A Management Plan for

Branan Field

Wildlife and Environmental Area

2017 – 2027

Clay and Duval counties, Florida

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

A Management Plan
for the
Branan Field Wildlife and Environmental Area

Duval and Clay counties, Florida

Owned and Managed by the
Florida Fish and Wildlife Conservation Commission

April 2017

Approved _____

Thomas H. Eason, Ph.D.
Director, Division of Habitat and Species Conservation

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)
Common Name of Property: Branan Field Wildlife and Environmental Area
Location: Duval and Clay counties, Florida
Acreage Total: 386 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Basin swamp	22.8	5.9%
Depression marsh	1.5	0.4%
Dome swamp	19.8	5.1%
Impoundment/artificial pond	1.5	0.4%
Mesic flatwoods	105.5	27.3%
Sandhill	84.9	22.0%
Wet flatwoods	147.1	38.1%
Xeric hammock	3.3	0.9%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.
Lease/Management Agreement No.: 3008 (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: List:
Type Acquisition: Fish and Wildlife Habitat Program
Unique Features: Natural: Natural communities basin swamp, depression marsh, dome swamp, mesic flatwoods, sandhill, wet flatwoods and xeric hammock
Archaeological/Historical: None documented within BFWEA.
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: Currently, there are 1,171 acres on the FWC Additions and Inholdings list; and 83,729 acres remaining for the Northeast Florida Timberlands and Watershed Reserve Florida Forever Project (Figure 13).
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	i, 1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	6-7
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	6-8
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	i; 1-5
5	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	4-5; 65
6	An **assessment** as to whether the property, or any portion, should be declared surplus. *Provide Information regarding **assessment and analysis** in the plan, and provide **corresponding map**.*	18-2.021	47
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. *Please clearly indicate parcels on a map.*	18-2.021	72-74
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	8-10
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)	6-8
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	8-11

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	45
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	43-45
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	43-47
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	7-8; 75-76
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	43; 69-70; 82-83

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	54-78
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)	44-47
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	44-47
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 12.15
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	13-20; 38-43; 54-78
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	N/A
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	68-69
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	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	13
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	Appendix 12.3.4
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032(10)	Appendix 12.3
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 12.3.1
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	Appendix 12.3.2 and 12.3.3
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	N/A
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
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

Section D: Natural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. *Use brief descriptions and include USDA maps when available.*	18-2.021	14-19; Appendix 12.4
33	Insert FNAI based natural community maps when available.	ARC consensus	31-32
34	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna and geological conditions.	18-2.021	14-32

35	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns and large sinkholes.	18-2.018 & 18-2.021	14-43
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	42
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	42-43
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	33-41
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	38-41
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	39; 41; Appendix 12.5
41	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032(10)	54-78
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.	↓	54-88
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.		78-88
42-C.	The associated measurable objectives to achieve the goals.		78-88
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. *Include fire management plans - they can be in plan body or an appendix.*		54-88; Appendix 12.11
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.		89-91; Appendix 12.10
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	20-23
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		54-88; Appendix 12.11

44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
44-C.	Measurable objectives (see requirement for #42-C).		78-88
44-D.	Related activities (see requirement for #42-D).		54-88
44-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10
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).	↓	54-88; Appendix 12.11
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
45-C.	Measurable objectives (see requirement for #42-C).		78-88
45-D.	Related activities (see requirement for #42-D).		54-88
45-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	24; 38-39; 63-64
47	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	Appendix 12.13 and 12.14
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).	↓	54-88
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
48-C.	Measurable objectives (see requirement for #42-C).		78-88
48-D.	Related activities (see requirement for #42-D).		54-88
48-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10

Section E: Water Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. *If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.*	18-2.018 & 18-2.021	10; 42

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	42
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	42
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	42
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).	↓	81-82
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
53-C.	Measurable objectives (see requirement for #42-C).		78-88
53-D.	Related activities (see requirement for #42-D).		54-88
53-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10

Section F: Historical, Archeological and Cultural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	43; 69-70
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	43; 69-70
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	69-70; Appendix 12.8
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).	↓	54-88
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
57-C.	Measurable objectives (see requirement for #42-C).		78-88
57-D.	Related activities (see requirement for #42-D).		54-88
57-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10

**While maps of Native American sites should not be included in the body of the management plan, the DSL urges each managing agency to provide such information to the Division of Historical Resources for inclusion in their proprietary

database. This information should be available for access to new managers to assist them in developing, implementing and coordinating their management activities.

Section G: Facilities (Infrastructure, Access, Recreation)			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. *See footnote.*	253.034(5)	65; 70
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).	↓	54-88
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
59-C.	Measurable objectives (see requirement for #42-C).		78-88
59-D.	Related activities (see requirement for #42-D).		54-88
59-E.	Budgets (see requirement for #42-E).		89-91; Appendix 12.10
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	65-70
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).	↓	54-88
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		78-88
61-C.	Measurable objectives (see requirement for #42-C).		78-88
61-D.	Related activities (see requirement for #42-D).		54-88
61-E.	Budgets (see requirement for #42-E).		89-91; Appendix 10.10

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	iii-x
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	ii
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	48-54
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	54-88

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)	89-91; Appendix 10.10
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)	89-91; Appendix 10.10
68	A statement of gross income generated, net income and expenses.	18-2.018	89-91; Appendix 10.10

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

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Management Plan Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
ARM	Archaeological Resource Management
BEBR	Bureau of Economic and Business Research
BFWEA	Branan Field Wildlife Management Area
CARL	Conservation and Recreation Lands Program
CAS	Conservation Action Strategy
DEP	Department of Environmental Protection
DOD	Department of Defense
DSL	Division of State Lands
FAC	Florida Administrative Code
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FS	Florida Statute(s)
FTE	Full Time Equivalent
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GFC	Florida Game and Freshwater Fish Commission
GIS	Geographic Information Systems
GPS	Geographic Positioning System
GRASI	Gulf Regional Airspace Initiative
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
IWHRS	Integrated Wildlife Habitat Ranking System
JEA	Jacksonville Electrical Authority
JSF	Jennings State Forest
LAP	Landowner Assistance Program

LMR	Land Management Review
MAG	Management Advisory Group
MOU	Memorandum of Understanding
MU	Management Unit
NGO	Non-Governmental Organization
NRCS	Natural Resources Conservation Service
NWR	National Wildlife Refuge
OBVM	Objective-Based Vegetation Management
OCPB	Optimal Conservation Planning Boundary
OFW	Outstanding Florida Waters
ORB	Optimal Resource Boundary
ORV	Off-Road Vehicle
PUD	Planned Unit Development
SJRWMD	St. John's River Water Management District
TNC	The Nature Conservancy
TPL	Trust for Public Land
USAF	United States Air Force
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WEA	Wildlife and Environmental Area
WMA	Wildlife Management Area

1 Introduction and General Information

Nestled within a major metropolitan area only 15 miles from downtown Jacksonville, visitors to the Branan Field Wildlife and Environmental Area (BFWEA) have opportunities to get respite from the nearby urban bustle and see gopher tortoises, carnivorous plants and colorful wildflowers along trails winding through a verdant pine forest. Straddling the border of southern Duval and northern Clay counties, adjacent to the Cecil Field Commerce Center, along with nearby conservation lands such as Jennings State Forest and the Cecil Field Conservation Corridor, BFWEA sustains natural elements of the once vast pine forest ecosystem that existed in this region of northeast Florida.

Composed of almost botanically intact natural communities such as mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock, the area was acquired by the FWC as a Gopher Tortoise Mitigation Park to protect vital habitat for the gopher tortoise. In addition to conserving important wildlife habitat, the area is also a wildlife corridor and watershed protection for the surface waters of Yellow Creek and Black Creek flowing through the area on their way to the St. Johns River.

Pine flatwoods (both mesic flatwoods and wet flatwoods) are the predominant plant community on the area. Wildlife is abundant on BFWEA; in addition to gopher tortoises, animals such as eastern indigo snakes, eastern diamondback rattlesnakes, gopher frogs and Florida pine snakes find refuge within tortoise burrows and are expected to occur on the area. Eastern bluebirds, woodpeckers, pine warblers and brown-headed nuthatches are common residents of pine flatwoods. Visitors to the area can listen for the distinctive calls of the eastern towhee and Bachman's sparrow along with a diverse variety of both resident and migratory bird species that frequently use the area. White-tailed deer and wild turkey are also occasionally observed here.

Carnivorous pitcher plants, sundews, showy wildflowers and lupine occur throughout the area. A number of imperiled plants have been identified here including; hooded pitcher plant, piedmont joint grass, non-crested Eulophia and Florida toothache grass.

Due to the intact nature of BFWEA's natural plant communities, the area is considered to be in "maintenance" condition meaning that the predominant resource management activities involve maintaining the natural cycle of prescribed fire, monitoring wildlife,

checking for exotic invasive plant species with little, if any, resource restoration work being needed. The area's hiking trail and boundary (fire break) are also maintained and monitored regularly. The population of gopher tortoises on the area is regularly monitored and appears stable over time. The physical characteristics and condition of the botanical communities are also monitored periodically as part of the FWC's Objective Based Vegetation Monitoring program (OBVM).

The BFWEA is managed by the FWC, primarily to conserve the natural communities on site that provide habitat conditions critical to sustaining an array of imperiled, rare and other more common wildlife species, including the gopher tortoise, Florida pine snake, Sherman's fox squirrel, and Bachman's sparrow, as well as to provide opportunities for wildlife-based public outdoor recreation that are compatible with the primary purpose for management of the area.

1.1 Management Plan Purpose

This Management Plan serves as the basic statement of policy and direction for the management of BFWEA. It provides information including the past usage, conservation acquisition history, and descriptions of the natural and historical resources found on BFWEA. Furthermore, it identifies FWC's future management intent, goals and associated short and long-term objectives, as well as identifying challenges and solutions. This Management Plan has been developed to guide each aspect of BFWEA's management for the next ten years.

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the FWC through the Florida Department of Environmental Protection's Division of State Lands (DSL), in compliance with paragraph seven of MOU No. 3008 (Appendix 12.1) and pursuant to Chapters 253 and 259, Florida Statutes (FS), and Chapters 18-2 and 18-4, Florida Administrative Code (FAC). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of DSL. Terms (Appendix 12.2) used in this Management Plan describing management activities and associated measurable goals and objectives conform to those developed for the Land Management Uniform Accounting Council Biennial Land Management Operational Report.

1.1.1 FWC Planning Philosophy

The FWC's planning philosophy includes emphasizing management recommendation consensus-building among stakeholders and input from user groups and the general public at the beginning of the planning process. The FWC engages stakeholders by convening a Management Advisory Group and solicits additional input from user groups and the general public at a public hearing (Appendix 12.3). The FWC also engages area, district, and regional agency staff, as well as other FWC staff expertise, in developing this Management Plan, thereby facilitating area biologist and manager "ownership" of the

Management Plan, and thus the development of meaningful management intent language, goals with associated measurable objectives, timelines for completion, and the identification of challenges and solution strategies for inclusion in the BFWEA Management Plan (Sections 5 – 8).

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

1.2 Location

As noted, the BFWEA is located in southern Duval and northern Clay counties. The BFWEA is located approximately 2 miles west of Oakleaf Plantation and 15 miles southwest of downtown Jacksonville (Figure 1). Interstate-10 is located approximately 7.5 miles north of the BFWEA.

Together with other nearby public conservation lands that include the Jennings State Forest and the Cecil Field Conservation Corridor, this is an important area for the protection of pine flatwoods communities and their associated fauna.

The BFWEA is located in Sections 35 and 36, Township 3 South, Range 24 East, as well as Sections 1, and 2, Township 4 South, Range 24 East (Figure 2).

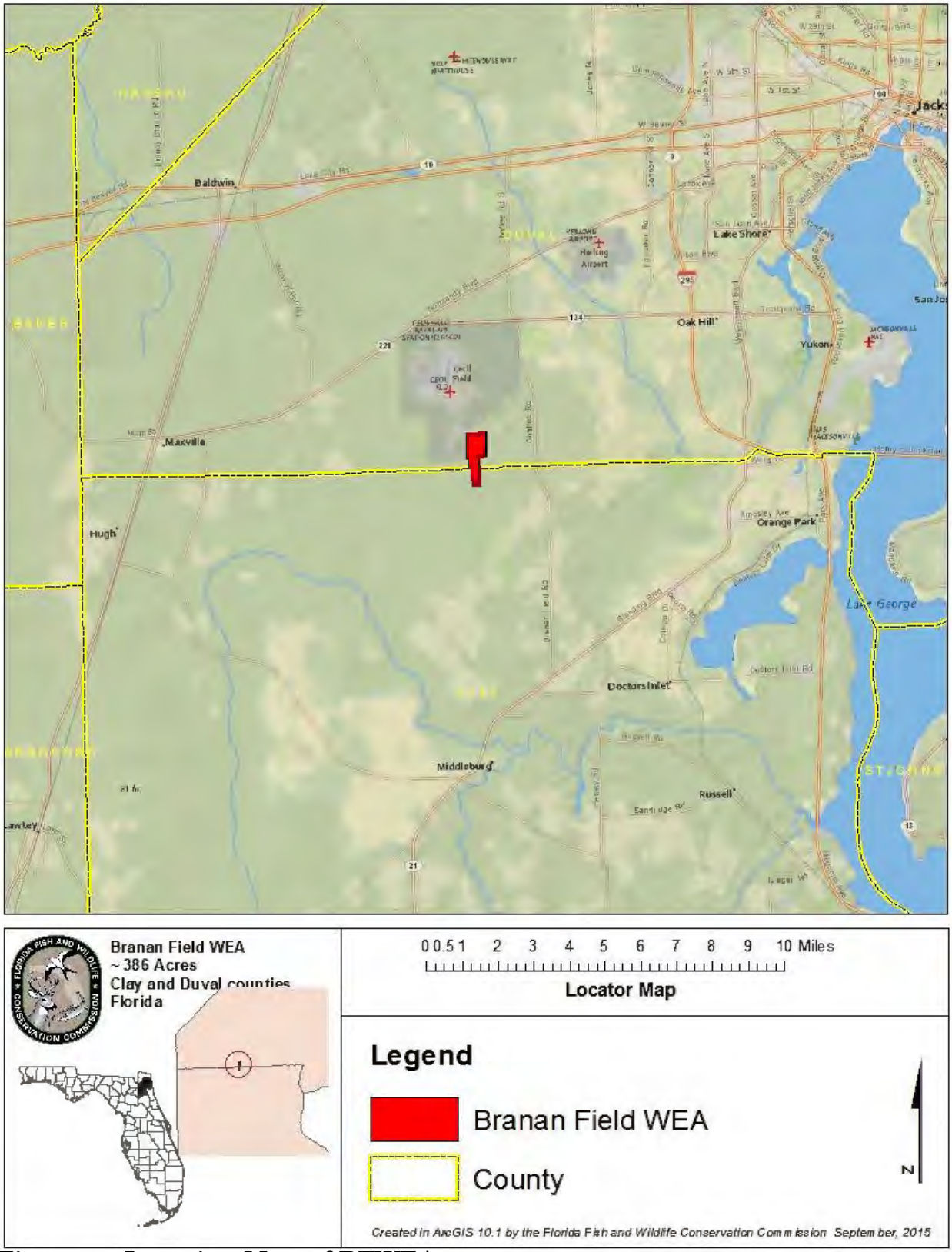

Figure 1. Location Map of BFWEA

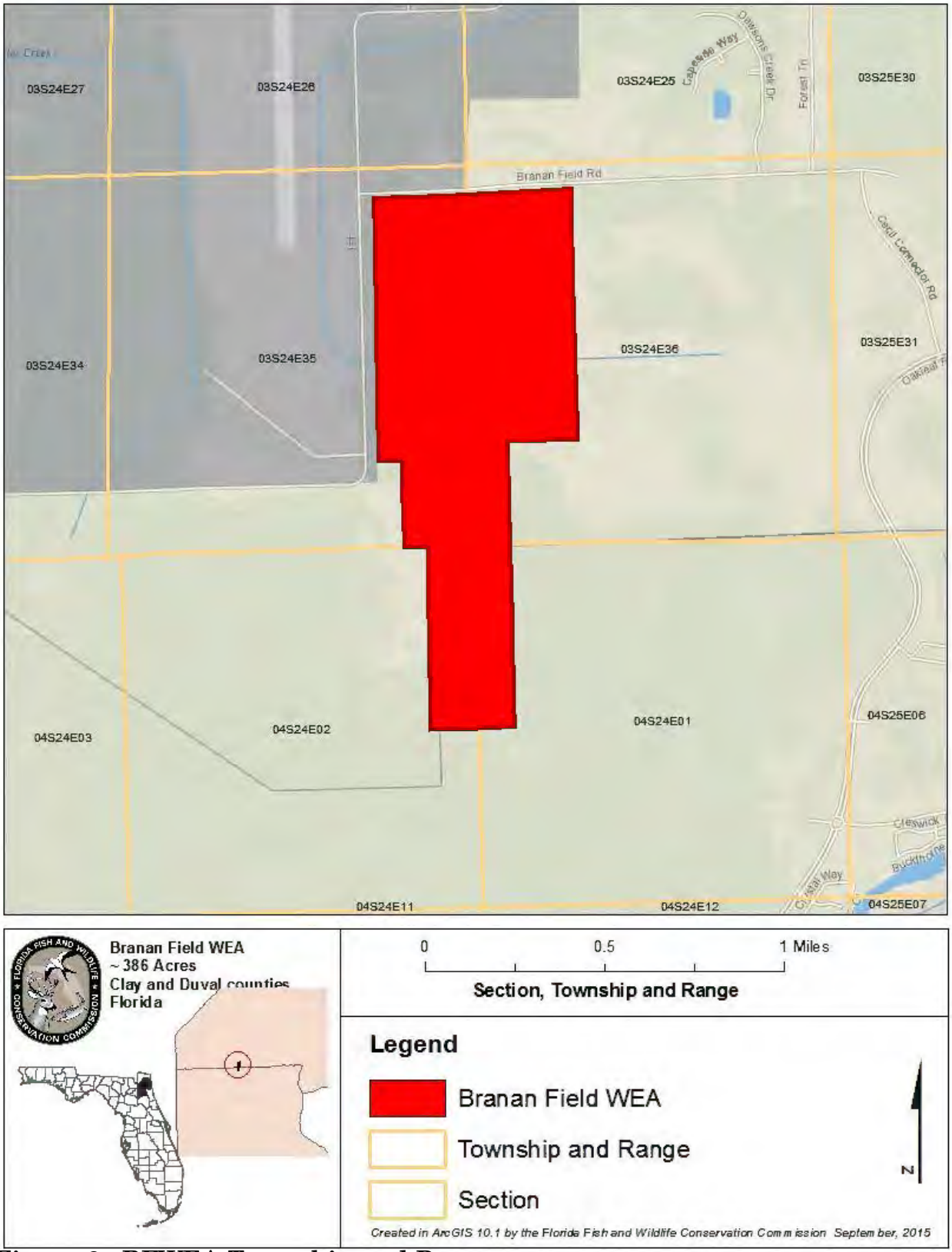

Figure 2. BFWEA Township and Range

1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

The primary purpose for acquisition of the BFWEA is to promote habitat conditions critical to meeting the life history requirements of the gopher tortoise and associated upland wildlife species. The BFWEA was acquired as a means to provide an offsite compensation alternative to state and federal listed species regulatory decisions. Approximately 95% of the funding for acquisition and management of the BFWEA originated from state regulatory actions taken on behalf of the gopher tortoise. The following mission statement was developed and approved by the FWC to guide management activities at the BFWEA: "It shall be the primary management missions at BFWEA to manage plant communities and public use in a manner that gives first consideration to the habitat needs and life history requirements of the gopher tortoise."

1.3.2 Acquisition History

Comprising 386 acres, the BFWEA was acquired with funds received through the FWC's Mitigation Park Program to restore and maintain the habitats critical to the long-term benefit of state and federally listed upland species, particularly the gopher tortoise.

The original portion of BFWEA, a 250-acre parcel owned by Gulfstream Properties, was acquired by the FWC in 1990 through the FWC Fish and Wildlife Habitat Acquisition Program with funding from the FWC Mitigation Park Program in partnership with the Trust for Public Land (TPL). Subsequently, FWC acquired a 136-acre tract from the TPL in 1992 and established the area as a WEA in 1993. The BFWEA acquisition was completed under an interagency Memorandum of Understanding (MOU) that involved the Northeast Florida Regional Planning Council, the Trust for Public Land, Florida Defenders of the Environment, and the FWC. This MOU was developed to provide an offsite mitigation alternative to land development interests and provided a template for the Mitigation Park Program.

The FWC implemented the now defunct Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Section 372.074 of the (FS) (since replaced by Chapter 379, FS).

The Mitigation Park Program was created by FWC to help protect endangered and threatened wildlife from the impacts of development by providing an offsite alternative to the previous method of on-site preservation of habitat within the boundaries of a development. Through this program, when developers proposed to develop habitat for an endangered or threatened species, they paid mitigation "taking" fees that were used to buy and manage high quality habitat elsewhere. As a result, the program provided an alternative method to preserve wildlife habitat while allowing developers to develop imperiled species habitat on their project sites. It also consolidates mitigation within a

geographical region by buying larger, more manageable tracts which are established as WEAs and can be utilized by the public for low-intensity, natural resource-based recreation.

All of the WEAs established through this program are managed primarily to protect and enhance habitat important to upland endangered or threatened wildlife, especially the gopher tortoise. The Mitigation Park Program has since been discontinued, but the 14 mitigation tracts acquired through the program continue to be actively managed by the FWC in accordance with their original purpose for acquisition. Gopher Tortoise Mitigation Parks, now established by the FWC as Wildlife and Environmental Areas (WEAs), provide conservation of important fish and wildlife habitat while allowing for public outdoor recreation within a multiple-use management regime that is primarily focused on restoration and management of gopher tortoise habitat. For this reason, management activities emphasize the maintenance and restoration of optimum listed species habitat.

1.4 Management Authority

The FWC is the designated lead managing agency for BFWEA under the authority granted by MOU 3008 that involved the Northeast Florida Regional Planning Council, the Trust for Public Land, Florida Defenders of the Environment, and the FWC. Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870 and of the Florida Statutes. These constitutional provisions and laws provide FWC the authority to protect, conserve, and manage the State's fish and wildlife resources.

1.5 Management Directives

As noted above, the FWC implemented the now defunct Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Section 372.074 of the (FS) (since replaced by Chapter 379, 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 to provide compatible fish and wildlife based public outdoor recreation. The interagency MOU 3008 with the Northeast Florida Regional Planning Council, the Trust for Public Land, Florida Defenders of the Environment, and the FWC directed FWC to provide an offsite mitigation alternative to land development interests and provided a template for the Mitigation Park Program.

1.6 Title Interest and Encumbrances

Title to the lands acquired and established as the BFWEA are vested with the FWC. Consequently, the FWC is the principal management authority for the BFWEA. As noted above, in section 1.4, additional management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327,

370, 372, 375, 378, 379, 403, 487, 597, and 870 of the Florida Statutes. These laws establish the overall authority of the FWC with regard to protection and management of the State's fish and wildlife resources. There are no known encumbrances or outstanding mineral rights or other interests within the established boundary of BFWEA.

1.7 Proximity to Other Public Conservation Lands

Florida Forever projects and conservation lands within a 10-mile radius of the BFWEA (Tables 1 – 2) include lands managed by public and private entities that contribute to the conservation of cultural and natural resources within this region of Florida. Most of the conservation lands within the vicinity of the BFWEA are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned by a private landowner while a public agency or not-for-profit organization holds a conservation easement and monitoring responsibility for the land. Other areas are simply owned by the private landowner, while public agencies or not-for profit organizations manage the land.

Conservation lands that are located in the vicinity of the BFWEA are shown in Figure 3. Located within 10 miles of the BFWEA are conservation areas managed by the Federal Government, Florida Forest Service (FFS), the FWC, the St. John's River Water Management District (SJRWMD), county governments, and private conservation organizations, such as the Timucuan Trails Parks Foundation. The Cecil Field Conservation Corridor, managed by the City of Jacksonville, lies directly adjacent to the western boundary of BFWEA.

Table 1. Conservation Lands within a 10-mile Radius of BFWEA

Federal Government	**Managing Agency**
Camp Blanding Joint Training Center	FL Dept. of Military Affairs
Jacksonville Naval Air Station	DOD
State of Florida	**Managing Agency**
Longbranch Crossing Gopher Tortoise Recipient Site	FWC
Cary State Forest	FFS
Jennings State Forest	FFS
Belmore State Forest	FFS
County/City	**Managing Agency**
Camp Milton Historic Preserve	City of Jacksonville
Bulls Bay Preserve	City of Jacksonville
Yellow Water Branch Trail Head	City of Jacksonville
Brandy Branch Trail Head	City of Jacksonville
Cecil Field Conservation Corridor	City of Jacksonville
Sal Taylor Creek Preserve	City of Jacksonville
Jacksonville-Baldwin Rail Trail	City of Jacksonville

International Paper	City of Jacksonville
Ringhaver Park	City of Jacksonville
Ferngully Preserve	City of Jacksonville
Goodbys Creek Preserve	City of Jacksonville
McGirts Creek Preserve	City of Jacksonville
Otis Road Trail Head	City of Jacksonville
Camp Chowenwaw Park	Clay County
Moccasin Slough	Clay County
Monticello Wildlands Conservation Easement	Duval County
Loblolly Park	Duval County
Loblolly Mitigation Preserve	Duval County
Alpine Groves Park	St. Johns County
Water Management District	**Managing Agency**
Skinner-Smith Parcel	SJRWMD
Stormwater Park	SJRWMD
Black Creek Ravines Conservation Area	SJRWMD
University of Florida Law Center Association Parcel	SJRWMD
Stone Mountain Industrial Park	SJRWMD
Arahatchee Conservation Easement	SJRWMD
Longbranch Crossing Conservation Easement	SJRWMD
Private	**Managing Agency**
Cedar River Sanctuary	Florida Audubon Society, Inc.
Trout River	Timucuan Trails Parks Foundation
Crosby Sanctuary	Duval Audubon Society, Inc.
Grandy Preserve	Duval Audubon Society, Inc.
Miller Farm	JEA
Peterson Tract	JEA
Raiford Wildlife Management Area	PRIDE Enterprises, Inc.

Acronym Key	Agency Name
DOD	Department of Defense
JEA	Jacksonville Electrical Authority
FFS	Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
SJRWMD	St. John's River Water Management District

Table 2. Florida Forever Projects within a 10-mile Radius of BFWEA

Project Name	GIS Acres
Northeast Florida Timberlands and Watershed Reserve	147,049.8
Baldwin Bay/St. Mary's River	9,130.8
Camp Blanding to Raiford Greenway	33,977.5

1.8 Adjacent Land Uses

The majority of BFWEA lies in Duval County. The 2015 U.S. Census estimates that there are ~905,574 people living in Duval County. The Bureau of Economic and Business Research (BEBR) medium-range population projections indicate that in the year 2020, there will be 959,600 people living in Duval County. The 2013 U.S. Census estimates that there are 196,399 people living in Clay County. The BEBR medium-range population projections indicate that in the year 2025, there will be 243,200 people living in Clay County. According to the BEBR population projections for the counties immediately surrounding Clay County for the year 2025 are as follows: Baker County-31,500; Bradford County - 29,000; Duval County -972,500; Putnam County -73,800; and St. Johns County - 283,200.

The current primary zoning ordinance for the BFWEA is agriculture. According to Duval and Clay counties' development code's section on zoning, a property zoned as agriculture land allows for cultivation and silvicultural practices. According to both Duval and Clay counties' future land use map, the BFWEA will be zoned recreation/preservation. Land zoned recreation/preservation allows for the following land uses: non-profit public recreation and open space amenities, and include natural resource land management activities and associated uses.

The current land use designations for areas in the vicinity of the BFWEA are agriculture/residential and planned unit development (PUD). Agriculture/residential zoning allows for 1 dwelling unit/10 acres, silvicultural activities, and family agricultural operations. In order to develop a PUD, there must be at least 5 acres of land and a visible barrier separating it from other property. Permitted uses on a property zoned PUD includes: any residential use, any nonresidential use as long as it is approved during the zoning process. Conditional uses for a PUD zoned property includes: land clearing debris disposal facility, public educational facilities, dwelling unit with kitchen addition for parent, grandparent or child, recreational vehicle parking for temporary use, home occupations, swimming pools, and residential group homes. Agricultural zoned property usages were discussed in the previous paragraph. Each counties' future land use map indicates that these same parcels will be rezoned to agriculture, recreation/preservation, and planned community which is similar to a PUD.

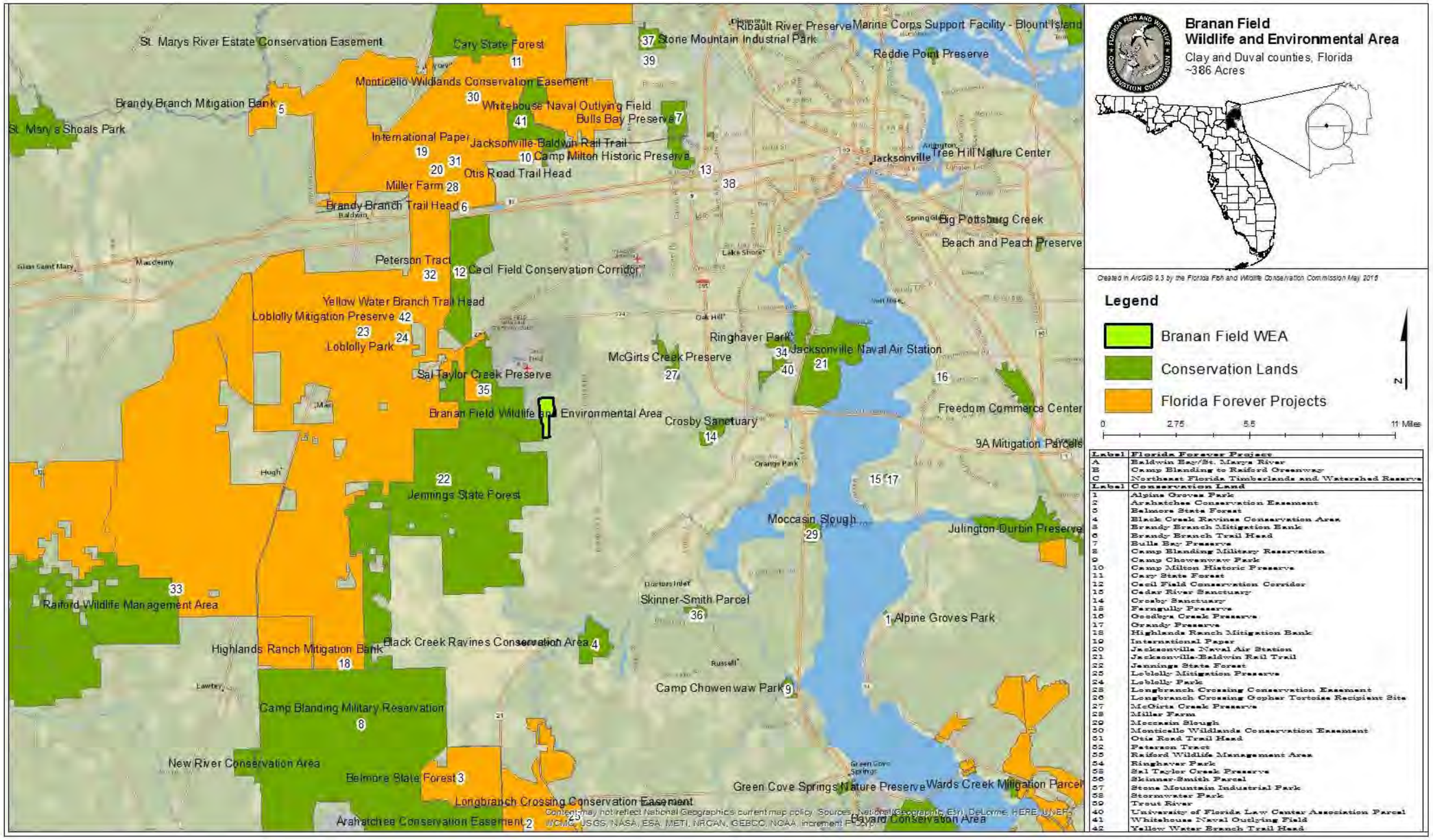

Figure 3. Florida Forever Projects and Conservation Lands near BFWEA

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1.9 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting in Green Cove Springs, Florida, on April 6th, 2016 to obtain input from both public and private stakeholders regarding management of BFWEA. Results of this meeting were used by FWC to develop management goals and objectives and to identify opportunities and strategies for inclusion in this Management Plan. A summary of issues and opportunities raised by the MAG, as well as a listing of participants, is included as Appendix 12.3.1. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Duval County on May 12, 2016. The report of that hearing is also contained in Appendix 12.3.5. 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 Historical Resources

Pine flatwoods (both mesic flatwoods and wet flatwoods) are the predominant plant community on the area. Wildlife is abundant on BFWEA. In addition to gopher tortoises, animals such as eastern indigo snakes, eastern diamondback rattlesnakes, gopher frogs and Florida pine snakes may find refuge within tortoise burrows and are expected to occur on the area. Eastern bluebirds, woodpeckers, pine warblers and brown-headed nuthatches are common residents of pine flatwoods. Visitors to the area can listen for the distinctive calls of the eastern towhee and Bachman's sparrow along with a diverse variety of both resident and migratory bird species that frequently use the area. White-tailed deer and wild turkey are also occasionally observed here.

Carnivorous pitcher plants, sundews, showy wildflowers and lupine occur throughout the area. A number of imperiled plants have been identified here including, the hooded pitcher plant, piedmont joint grass, non-crested Eulophia, hairy spikelet beakrush, Chapman's crownbeard and Florida toothache grass.

2.1 Physiography

The BFWEA occurs in a physiographic province known as the Duval Uplands. Topography in this region is mostly gentle to flat and composed of a series of marine terraces. Surface waters drain to Yellow Water Creek, through Black Creek, and to the St. Johns River. Topographic information for the area can be found by reviewing the Jacksonville Heights series of the 1988 U.S.G.S Quadrangle Map edition. Elevations within the area vary

gradually from a low of 75 feet to a high of 90 feet. Soil and surface moisture is greater in the southern portion of the tract, and decreases in a northerly direction.

2.1.1 Climate

On average, there are 221 sunny days per year in Duval and Clay counties, Florida. The July high is around 92 degrees. The January low is 43. Our comfort index, which is based on humidity during the hot months, is a 29 out of 100, where higher is more comfortable. The US average on the comfort index is 44.

Duval County, Florida, gets 52 inches of rain per year. The average US city gets 37 inches of rain per year. The number of days with any measurable precipitation is 114. Clay County, Florida, gets 52 inches of rain per year. The US average is 37 per year. The number of days with any measurable precipitation is 116.

2.1.2 Topography

The state of Florida, including Jacksonville, is a huge flat plateau with a high water table, and surface lakes are very shallow. The United States Geological Survey states that the highest point in Jacksonville is only 40 feet (12.2 meters) above sea level, making the area susceptible to flooding and storm surge. Soil composition is primarily sand and clay rather than limestone, so very few sinkholes develop; however deep, large diameter sinkholes do occur.

As previously noted, the BFWEA occurs in a physiographic province known as the Duval Uplands. The Duval Upland is predominantly flatwoods with elevations ranging 70 to 100 ft above sea level. According to the United States Census Bureau, the city has a total area of 874.3 square miles (2,264 km2), making Jacksonville the largest city in land area in the contiguous United States; of this, 86.66% (757.7 sq mi or 1,962 km2) is land and; 13.34% (116.7 sq mi or 302 km2) is water. Jacksonville surrounds the town of Baldwin. Nassau County lies to the north, Baker County lies to the west, and Clay and St. Johns County lie to the south; the Atlantic Ocean lies to the east, along with the Jacksonville Beaches. The St. Johns River divides the city. The Trout River, a major tributary of the St. Johns River, is located entirely within Jacksonville.

2.1.3 Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) data were used to identify the BFWEA's soil series and soil depth to water table (Figures 4 and 5). Twelve soil map units, described in the soil survey of the BFWEA, are distributed as shown in Figure 4. Analyses of depth to water table for map units occurring within the BFWEA are also provided in 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. Figure 4 provides aggregation data for BFWEA map units. Soils series descriptions may be found in Appendix 12.4.

Soils associations existing within the area include Leon, Lynn Haven, Mandarin, Ortega, Pamlico, Pottsburg, and Ridgeland. With the exception of the Pamlico series, these are mostly flatwoods soils characterized as fine sands with high permeability and low pH (4.5-6.0). The Pamlico soil series is an acidic soil with a sand base overlain by organic material.

2.1.4 Geologic Conditions

The surface sediments at BFWEA are primarily Pleistocene/Holocene Alluvium sediments, described below. The geology of Duval and Clay counties, as reflected on the U.S. Department of Interior, United States Geological Survey's website (http://mrdata.usgs.gov/geology/state/fips-unit.php?code=f12031) is as follows:

Holocene sediments (Holocene)

The Holocene sediments in Florida occur near the present coastline at elevations generally less than 5 feet (1.5 meters). The sediments include quartz sands, carbonate sands and muds, and organics.

Cypresshead Formation (Pliocene)

The Cypresshead Formation named by Huddlestun (1988), is composed of siliciclastics and occurs only in the peninsula and eastern Georgia. It is at or near the surface from northern Nassau County southward to Highlands County forming the peninsular highlands. It appears that the Cypresshead Formation occurs in the subsurface southward from the outcrop region and similar sediments, the Long Key Formation, underlie the Florida Keys. The Cypresshead Formation is a shallow marine, near shore deposit equivalent to the Citronelle Formation deltaic sediments and the Miccosukee Formation prodeltaic sediments. The Cypresshead Formation consists of reddish brown to reddish orange, unconsolidated to poorly consolidated, fine to very coarse grained, clean to clayey sands. Cross bedded sands are common within the formation. Discoid quartzite pebbles and mica are often present. Clay beds are scattered and not aerially extensive. In general, the Cypresshead Formation in exposure occurs above 100 feet (30 meters) above mean sea level (msl). Original fossil material is not present in the sediments although poorly preserved

molds and casts of mollusks and burrow structures are occasionally present. The presence of these fossil "ghosts" and trace fossils documents marine influence on deposition of the Cypresshead sediments. The permeable sands of the Cypresshead Formation form part of the surficial aquifer system.

Beach ridge and dune (Pleistocene/Holocene)

Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. Where these sediments exceed 20 feet (6.1 meters) thick, they were mapped as discrete units. In an effort to subdivide the undifferentiated sediments, those sediments occurring in flood plains were mapped as alluvial and flood plain deposits (Qal). Sediments showing surficial expression of beach ridges and dunes were mapped separately (Qbd) as were the sediments composing Trail Ridge (Qtr). Terrace sands were not mapped (refer to Healy [1975] for a discussion of the terraces in Florida). The subdivisions of the Undifferentiated Quaternary Sediments (Qu) are not lithostratigraphic units but are utilized in order to facilitate a better understanding of the State's geology. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present in the panhandle. Organics occur as plant debris, roots, disseminated organic matrix and beds of peat. Freshwater carbonates, often referred to as marls in the literature, are scattered over much of the State. In southern Florida, freshwater carbonates are nearly ubiquitous in the Everglades. These sediments are buff colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt and clay may be present in limited quantities. These carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks.

Undifferentiated sediments (Pleistocene/Holocene)

Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. Where these sediments exceed 20 feet (6.1 meters) thick, they were mapped as discrete units. In an effort to subdivide the undifferentiated sediments, those sediments occurring in flood plains were mapped as alluvial and flood plain deposits (Qal). Sediments showing surficial expression of beach ridges and dunes were mapped separately (Qbd) as were the sediments composing Trail Ridge (Qtr). Terrace sands were not mapped (refer to Healy [1975] for a discussion of the terraces in Florida). The subdivisions of the Undifferentiated Quaternary Sediments (Qu) are not lithostratigraphic units but are utilized in order to facilitate a better understanding of the State's geology. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present in the panhandle. Organics occur as plant

debris, roots, disseminated organic matrix and beds of peat. Freshwater carbonates, often referred to as marls in the literature, are scattered over much of the State.

Trail Ridge sands (Pleistocene)

Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. Where these sediments exceed 20 feet (6.1 meters) thick, they were mapped as discrete units. In an effort to subdivide the undifferentiated sediments, those sediments occurring in flood plains were mapped as alluvial and flood plain deposits (Qal). Sediments showing surficial expression of beach ridges and dunes were mapped separately (Qbd) as were the sediments composing Trail Ridge (Qtr). Terrace sands were not mapped (refer to Healy [1975] for a discussion of the terraces in Florida). The subdivisions of the Undifferentiated Quaternary Sediments (Qu) are not lithostratigraphic units but are utilized in order to facilitate a better understanding of the State's geology. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present in the panhandle. Organics occur as plant debris, roots, disseminated organic matrix and beds of peat. Freshwater carbonates, often referred to as marls in the literature, are scattered over much of the State. In southern Florida, freshwater carbonates are nearly ubiquitous in the Everglades. These sediments are buff colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt and clay may be present in limited quantities. These carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks.

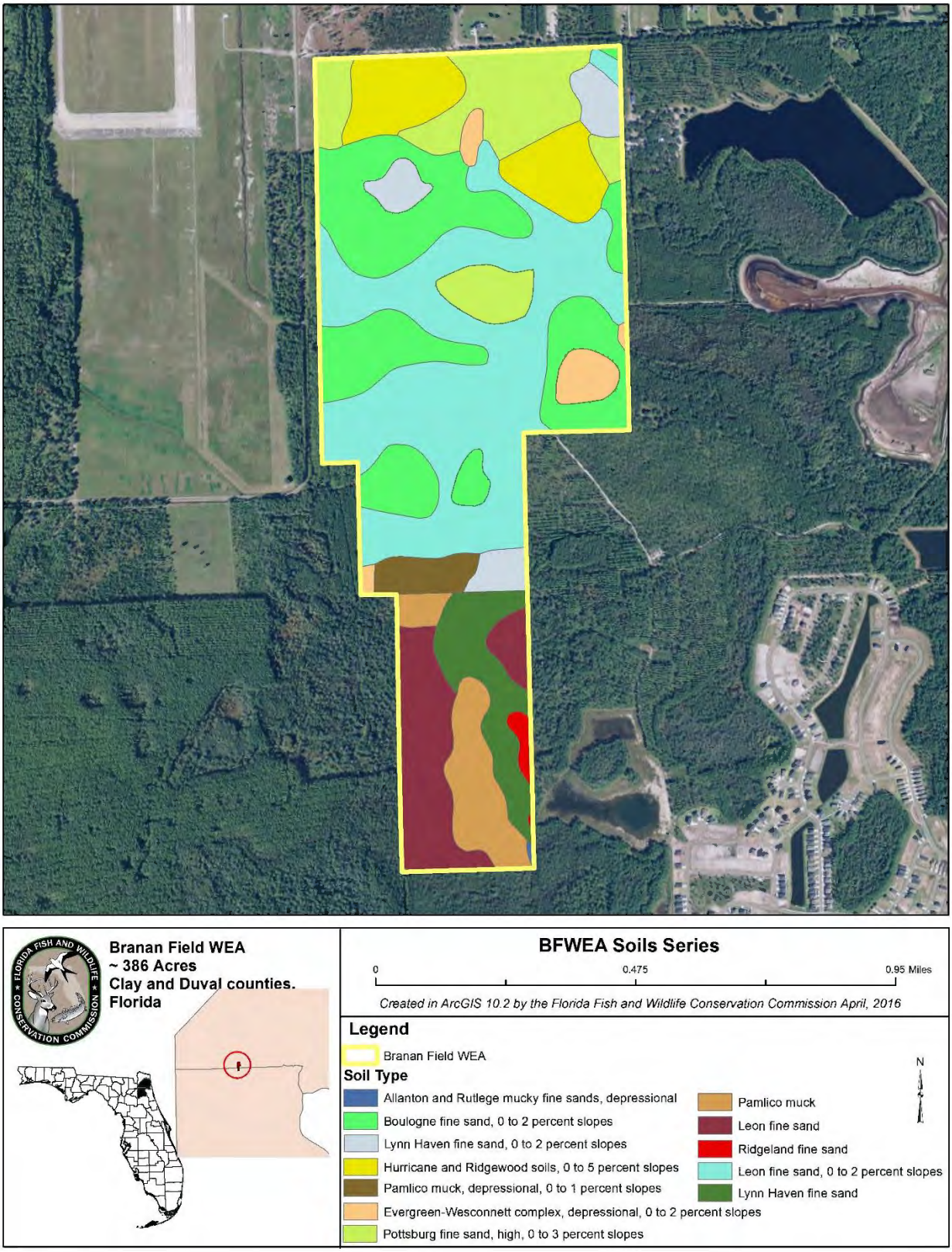

Figure 4. BFWEA Soils

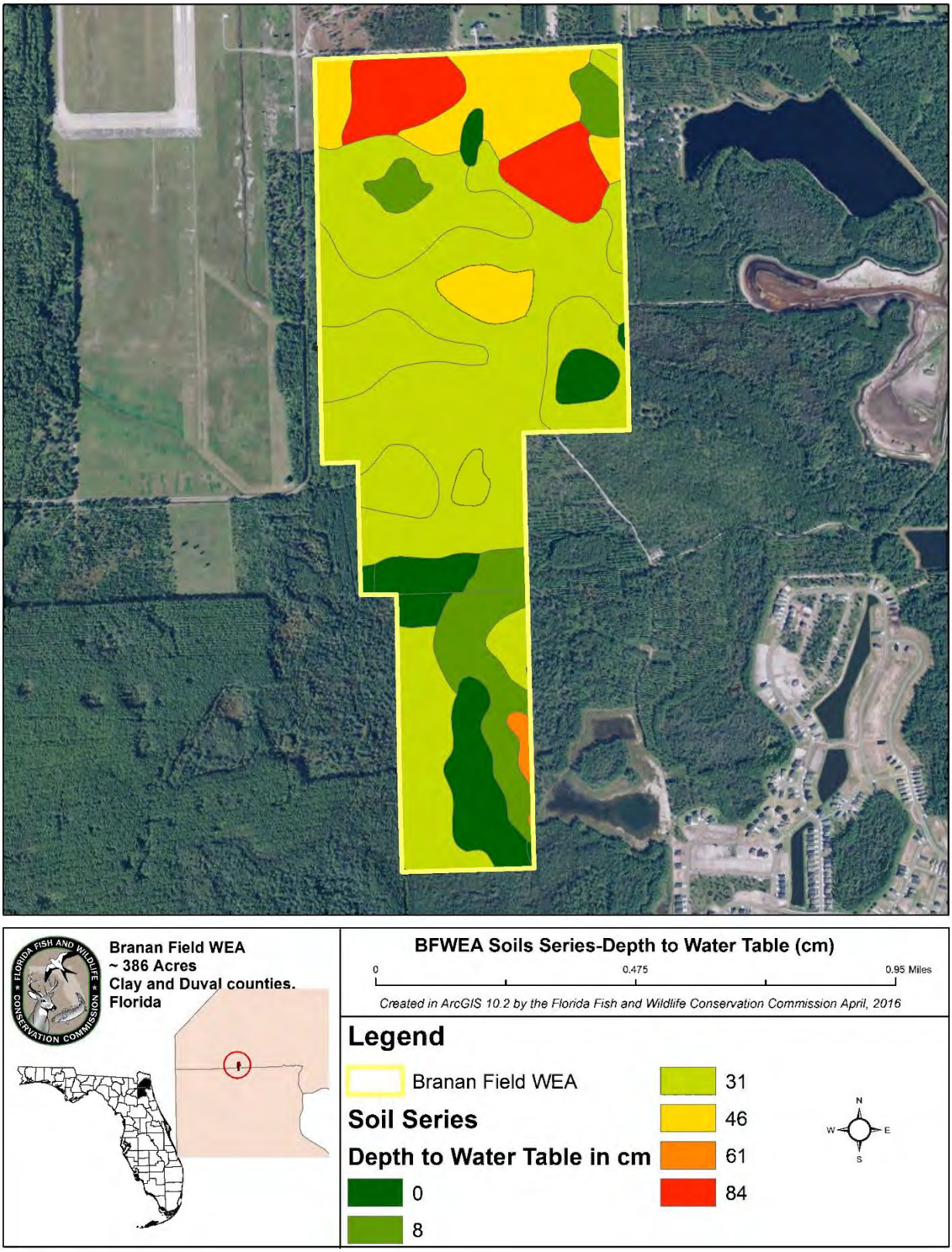

Figure 5. BFWEA Soils – Depth to Water Table

2.2 Vegetation

As previously noted, due to the nearly intact nature of BFWEA's natural plant communities, the area is considered to be in "maintenance" condition meaning that the predominant resource management activities involve maintaining the natural cycle of prescribed fire, monitoring wildlife, checking for exotic invasive plant species with little, if any, resource restoration work being needed. The area's hiking trail and boundary (fire break) are also maintained and monitored regularly. The population of gopher tortoises on the area is regularly monitored and appears stable over time. The physical characteristics and condition of the botanical communities are also monitored periodically as part of the FWC's Objective Based Vegetation Monitoring program. Aerial imagery is shown in Figure 6.

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC initially surveyed and mapped the natural and anthropogenic communities of the BFWEA in 2007. The area was re-mapped and the natural communities were recertified by the FNAI in 2014. This mapping effort identified 8 natural and anthropogenic community types existing on the BFWEA (Table 3 and Figure 7). The predominant natural communities found on the area are mesic flatwoods, sandhill and wet flatwoods. Surveys by FWC biologists and contracted FNAI staff have documented a variety of native and imperiled plant species (Tables 4 and 5). As noted above, BFWEA is in maintenance condition and no invasive exotic vegetation is recorded as currently being onsite. Previous limited occurrences of invasive/exotic plant species (Table 6) were identified and eradicated. The FNAI historic communities are shown in Figure 8.

Table 3. BFWEA FNAI Natural and Anthropogenic Communities

Community Type	Acreage*	Percentage
Basin swamp	22.8	5.9%
Depression marsh	1.5	0.4%
Dome swamp	19.8	5.1%
Impoundment/artificial pond	1.5	0.4%
Mesic flatwoods	105.5	27.3%
Sandhill	84.9	22.0%
Wet flatwoods	147.1	38.1%
Xeric hammock	3.3	0.9%

*GIS-calculated acreage may differ from actual acreage.

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
American beautyberry	*Callicarpa americana*
Black gum	*Nyssa sylvatica*
Blackroot	*Pterocaulon pycnostachyum*

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Blue huckleberry	*Gaylussacia frondosa var. tomentosa*
Blue maidencane	*Amphicarpum muhlenbergianum*
Bluejack oak	*Quercus incana*
Bottlebrush threeawn	*Aristida spiciformis*
Bracken fern	*Pteridium aquilinum*
Broomsedge bluestem	*Andropogon virginicus*
Carolina redroot	*Lachnanthes caroliana*
Chinquapin	*Castanea pumila*
Clasping waterhorehound	*Lycopus amplectens*
Climbing hempvine	*Mikania scandens*
Clustered sedge	*Carex glaucescens*
Coastalplain chaffhead	*Carphephorus corymbosus*
Common persimmon	*Diospyros virginiana*
Common ragweed	*Ambrosia artemisiifolia*
Creeping primrosewillow	*Ludwigia repens*
Curtiss' dropseed	*Sporobolus curtissii*
Dogfennel	*Eupatorium capillifolium*
Dogtongue wild buckwheat	*Eriogonum tomentosum*
Dollarleaf	*Rhynchosia reniformis*
Dwarf live oak	*Quercus minima*
Dwarf pawpaw	*Asimina pygmea*
Earleaf greenbrier	*Smilax auriculata*
Early whitetop fleabane	*Erigeron vernus*
Eastern milkpea	*Galactia regularis*
Eastern silver aster	*Symphyotrichum concolor*
Fascicled beaksedge	*Rhynchospora fascicularis*
Fernleaf yellow false foxglove	*Aureolaria pedicularia var. pectinata*
Fetterbush	*Lyonia lucida*
Flaxleaf false foxglove	*Agalinis linifolia*
Florida dropseed	*Sporobolus floridanus*
Florida greeneyes	*Berlandiera subacaulis*
Florida hoary-pea	*Tephrosia florida*
Florida threeawn	*Aristida rhizomophora*
Giant gallberry	*Ilex glabra*
Gopher apple	*Licania michauxii*
Highbush blueberry	*Vaccinium corymbosum*
Kidneyleaf rosinweed	*Silphium compositum*
Laurel greenbrier	*Smilax laurifolia*
Laurel oak	*Quercus hemisphaerica*

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Live oak	*Quercus virginiana*
Loblolly bay	*Gordonia lasianthus*
Longleaf pine	*Pinus palustris*
Lopsided indiangrass	*Sorghastrum secundum*
Maidencane	*Panicum hemitomon*
Manyhead rush	*Juncus polycephalos*
Marshelder	*Iva microcephala*
Mohr's thoroughwort	*Eupatorium mohrii*
Muscadine	*Vitis rotundifolia*
Myrtle dahoon	*Ilex cassine var. myrtifolia*
Myrtleleaf St. John's wort	*Hypericum myrtifolium*
Narrowfruit horned beaksedge	*Rhynchospora inundata*
Narrowleaf silkgrass	*Pityopsis graminifolia*
Needleleaf witchgrass	*Dichanthelium aciculare*
Netted nutrush	*Scleria reticularis*
Oblongleaf twinflower	*Dyschoriste oblongifolia*
Partridge pea	*Chamaecrista fasciculata*
Peelbark St. John's wort	*Hypericum fasciculatum*
Piedmont roseling	*Callisia rosea*
Pinebarren goldenrod	*Solidago fistulosa*
Pineywoods dropseed	*Sporobolus junceus*
Pond cypress	*Taxodium ascendens*
Purple lovegrass	*Eragrostis spectabilis*
Ragweed	*Ambrosia psilostachya*
Red maple	*Acer rubrum*
Rose-of-Plymouth	*Sabatia stellaris*
Rosy camphorweed	*Pluchea rosea*
Running oak	*Quercus elliottii*
Sand blackberry	*Rubus cuneifolius*
Sand post oak	*Quercus margarettae*
Savannah meadowbeauty	*Rhexia alifanus*
Saw palmetto	*Serenoa repens*
Scaleleaf aster	*Symphyotrichum adnatum*
Shiny blueberry	*Vaccinium myrsinites*
Shortleaf gayfeather	*Liatris tenuifolia*
Slash pine	*Pinus elliottii*
Slender flattop goldenrod	*Euthamia caroliniana*
Slender gayfeather	*Liatris gracilis*
Slender woodoats	*Chasmanthium laxum*

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Smallfruit beggarticks	*Bidens mitis*
Smooth beggarticks	*Bidens laevis*
Soft rush	*Juncus effusus subsp. solutus*
Southeastern primrosewillow	*Ludwigia linifolia*
Spadeleaf	*Centella asiatica*
Splitbeard bluestem	*Andropogon ternarius*
Sugarcane plumegrass	*Saccharum giganteum*
Swamp bay	*Persea palustris*
Swamp tupelo	*Nyssa biflora*
Tall elephantsfoot	*Elephantopus elatus*
Tarflower	*Bejaria racemosa*
Toothachegrass	*Ctenium aromaticum*
Turkey oak	*Quercus laevis*
Variable-leaf crownbeard	*Verbesina heterophylla*
Virginia chain fern	*Woodwardia virginica*
Wand goldenrod	*Solidago stricta*
Water cowbane	*Oxypolis filiformis*
Water oak	*Quercus nigra*
Wax myrtle	*Myrica cerifera*
Whitemouth dayflower	*Commelina erecta*
Whitetop aster	*Sericocarpus tortifolius*
Wiregrass	*Aristida stricta var. beyrichiana*
Woolly pawpaw	*Asimina incana*
Yankeeweed	*Eupatorium compositifolium*
Yellow hatpins	*Syngonanthus flavidulus*
Yellow jessamine	*Gelsemium sempervirens*
Yellow-eyed grass	*Xyris sp.*

Table 5. Imperiled Plants Known or Expected to Occur at BFWEA

Common Name	Scientific Name	Status
Chapman's crownbeard	*Verbesina chapmanii*	ST
Florida toothache grass	*Ctenium floridanum*	SE
Hairy spikelet beakrush	*Rhynchospora megaplumosa*	SE
Hooded pitcherplant	*Sarracenia minor*	ST
Non-crested eulophia	*Eulophia ecristata*	ST
Piedmont joint grass	*Coelorachis tuberculosa*	ST
Variable-leaf crownbeard	*Verbesina heterophylla*	US–Mgmt Concern

Table 6. Exotic Plant Species Known to Previously Occur on the BFWEA

Common Name	Scientific Name
Chinese tallow	*Triadica sebifera*
Japanese climbing fern	*Lygodium japonicum*
Mimosa	*Albizia julibrissin*

2.2.1 FNAI Natural and Anthropogenic Community Descriptions

Basin Swamp (~23 Acres)

Basin swamps are forested wetlands of primarily deciduous trees occurring in large (generally greater than 10 acres), irregularly shaped depressions that are not associated with lotic water systems. Typical plants include blackgum, cypress, slash pine and bays. Basin swamps are differentiated from dome swamps not only by their generally larger size, but also by their long hydroperiod that may extend to nearly permanent water. The long hydroperiod and the resulting incomplete burning often results in a sparse herbaceous cover and moderate to dense shrub cover.

At BFWEA, two basin swamps were identified and both extend off of the area. There is a nearly closed canopy of mature slash pine and pond cypress. The sub-canopy is composed of red maple, swamp tupelo, and pond cypress. There is a moderately dense tall shrub layer of red maple, myrtle dahoon, wax myrtle, and swamp bay. Short shrubs are occasional and include seedling red maple, myrtle dahoon, fetterbush, wax myrtle, and highbush blueberry. Herbaceous cover is sparse and patchy in the interior. Portions of the fringe are moderately dense. Species observed are broomsedge bluestem, smallfruit beggarticks, clustered sedge, yankeeweed, soft rush, Carolina redroot, creeping primrosewillow, clasping water-horehound, climbing hempvine, maidencane, rosy camphorweed, sugarcane plumegrass, pinebarren goldenrod, and Virginia chain fern. A large ditch along the edge of the northern basin swamp substantially affects the hydroperiod of this swamp and the surrounding communities.

The present extent of basin swamp at BFWEA is the same as indicated on historic aerial photographs. The signature on the photography is very dark with irregular dimpling of light gray. The large basin swamp at the southern end of BFWEA has a large patch of gray (a slightly raised area) that may have been cleared or burned preceding the photograph.

Depression marsh (~2 Acres)

Depression marshes are shallow, rounded depressions in sand substrate with herbaceous vegetation often in concentric bands along a hydrologic gradient. They are typically small (less than five acres) and not associated with flowing water. Depression marshes are typical of karst regions where sand has slumped around or over a sinkhole. These conical depressions are subsequently filled by direct rainfall, runoff, or seepage from surrounding

uplands. The substrate is usually acid sand, possibly with peat development toward the center or deeper areas. Some depressions may have a subsurface hardpan that slows water percolation. Depression marshes are distinguished from basin marshes by a short hydroperiod, which allows fire to regularly burn through the community, thus limiting establishment of shrubs and herbaceous species typical of permanent or nearly permanent water. Basin marshes are generally large, and may have nearly permanent water.

At BFWEA, two depression marshes were identified. Both marshes are less than one acre in size and are very shallow. One marsh has contains slash pine and pond cypress in the canopy. The tall shrub layer of the marshes is generally sparse, but includes red maple, myrtle dahoon, and swamp tupelo. The short shrub layer was represented by peelbark St. John's wort, which is common in the mid to outer rings of vegetation. Slash pine seedlings are also present. The herbaceous layer is moderately dense and includes broomsedge bluestem, dogfennel, Mohr's thoroughwort, slender flattop goldenrod, soft rush, manyhead rush, Carolina redroot, rosy camphorweed, and pinebarren goldenrod. Many of the herbaceous species observed are weedy species characteristic of areas that have experienced soil disturbance.

Dome Swamp (~20 Acres)

Dome Swamps are shallow, forested, often circular depressions that generally present a domed profile on the landscape. Pond cypress, swamp tupelo, and slash pine are common plants. Dome Swamps typically develop in sandy flatwoods and in karst areas where sand has slumped around or over a sinkhole, creating a conical depression. Soils are composed of peat, which becomes thickest toward the center of the dome, and are generally underlain with acidic sands over limestone. The hydroperiod is variable, but most dome swamps hold surface water for six to nine months. Some domes have a clay lens that helps retain water levels. Dome swamps are differentiated from basin swamps not only by their generally smaller size, but also by their shorter hydroperiod. The shorter hydroperiod allows for more complete burning, at least in some years, resulting in higher herbaceous cover and lower shrub cover, particularly around the periphery.

At BFWEA, several dome swamps were mapped. These generally have a moderate canopy of slash pine, and pond cypress. The sub-canopy fills most canopy tree gaps and is composed of red maple, swamp tupelo, and pond-cypress. The tall shrub layer is variable in density and includes myrtle dahoon, fetterbush, and wax myrtle. Short shrubs are also variable, represented by fetterbush and young shrubs and trees including common persimmon, myrtle dahoon, gallberry, and wax myrtle. Herb cover is generally moderately dense and was represented principally by broomsedge bluestem, clustered sedge, clasping waterhorehound, maidencane, rosy camphorweed, sugarcane plumegrass, and Virginia chain fern. The dome swamps at BFWEA are generally undisturbed.

Impoundment/Artificial Pond (~2 Acres)

A small borrow area in the sandhill was identified as ruderal – impoundment/artificial pond. It is a scraped-out depression in the sandhill measuring approximately one acre, and contains water, with levels dependent upon precipitation rates. There are no canopy or shrub layers. The herbaceous cover is moderate and composed almost entirely of weedy species. Dominants were ragweed, broomsedge bluestem, purple lovegrass, dogfennel, yankeeweed, Mohr's thoroughwort, marshelder, slender flattop goldenrod, southeastern primrosewillow, rosy camphorweed, and yellow hatpins. Although classified as ruderal this artificial pond may provide habitat for breeding amphibians. The site could be improved by reducing the slope of the banks and seeding or planting native marsh grasses and sedges.

Mesic Flatwoods (~106 Acres)

Mesic flatwoods was once the most widespread natural community in Florida, covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods is characterized by an open canopy of tall pines and a dense, low ground layer of shrubs, grasses, and forbs with no or few hardwoods. Longleaf pine is the principal canopy tree in northern and Central Florida, transitioning to predominately slash pine in south Florida. There is typically no tall shrub layer; however, short shrubs are diverse and may cover a large percentage of the community. Herbaceous cover is moderate to dense and typically very diverse. The typical plant association for mesic flatwoods is longleaf pine-saw palmetto-wiregrass. Soils are acidic, nutrient-poor, fine sands with upper layers darkened by organic matter. Drainage in this flat terrain can be impeded by a loosely cemented organic layer (spodic horizon) formed within several feet of the soil surface. The soils may be alternately xeric during dry periods, and saturated or even inundated after heavy rain events.

At BFWEA, the canopy in mesic flatwoods is generally open. Slash pine and longleaf pine are present. Areas in the southern portion of the site have been disturbed by past forestry practices and generally lack longleaf pine. The southern areas have a moderately dense tall shrub layer composed of loblolly bay, wax myrtle, swamp bay, laurel oak, water oak, and highbush blueberry. Northern areas are generally in better structural condition with no or sparse tall shrubs. Short shrub cover is variable in both structure and composition. Areas in the north are more characteristic of mesic flatwoods because of current management and moderate past disturbance. These areas supported dwarf pawpaw, tarflower, blue huckleberry, gallberry, gopher apple, fetterbush, running oak, dwarf live oak, saw palmetto, and shiny blueberry.

Common species in the disturbed and less frequently burned areas in the south included wax myrtle, highbush blueberry, and sand blackberry. Herbaceous cover was similarly representative and diverse in the northern areas. Species observed included flaxleaf false foxglove, broomsedge bluestem, Florida threeawn, bottlebrush threeawn, wiregrass, toothachegrass, needleleaf witchgrass, dogtongue wild buckwheat, dogfennel, Mohr's

thoroughwort, slender flattop goldenrod, Carolina redroot, slender gayfeather, shortleaf gayfeather, narrowleaf silkgrass, rosy camphorweed, blackroot, savannah meadowbeauty, rose-of-Plymouth, wand goldenrod, lopsided indiangrass, Curtiss' dropseed, eastern silver aster, yellow hatpins, and Virginia chain fern. Woody vines included yellow jessamine, earleaf greenbrier, and muscadine.

Sandhill (~85 Acres)

Sandhill is a forest of widely spaced pine trees and deciduous oaks and a moderate to dense ground cover of grasses and forbs on deep well-drained sands. The typical plant association is longleaf pine, turkey oak and wiregrass. Sandhills are important aquifer recharge areas because the porous sands allow water to percolate rapidly with little runoff and minimal evaporation. The deep sandy soils contribute to a xeric environment that is accentuated by the scattered overstory. Sandhills require growing season fires to maintain their open structure. In the absence of fire, succession may favor development of xeric hammock or turkey oak barrens. Sandhills provide habitat for several rare animal species including gopher tortoise, indigo snake, Sherman's fox squirrel, and Bachman's sparrow.

At BFWEA, the majority of sandhill is located in the northern part of the area. There is an open to sparse canopy of slash pine and longleaf pine. The sub-canopy throughout most of the site is composed of laurel oak and turkey oak. There are some sub-mesic areas that have no turkey oak, but may have a few laurel oaks. The tall shrub layer is composed of occasional bluejack oak, turkey oak, and sand post oak. Short shrubs are common and include woolly pawpaw, dwarf pawpaw, chinquapin, gopher apple, turkey oak, dwarf live oak, sand blackberry, saw palmetto, and shiny blueberry. Herbaceous cover is abundant and diverse throughout the sandhill as a result of regularly prescribed fire and the lack of extensive ground disturbance.

Species observed are splitbeard bluestem, wiregrass, fernleaf yellow false foxglove, Florida greeneyes, piedmont roseling, coastalplain chaffhead, whitemouth dayflower, needleleaf witchgrass, oblongleaf twinflower, tall elephantsfoot, early whitetop fleabane, yankeeweed, eastern milkpea, shortleaf gayfeather, narrowleaf silkgrass, bracken fern, dollarleaf, whitetop aster, kidneyleaf rosinweed, pineywoods dropseed, scaleleaf aster, Florida hoary-pea, and variable-leaf crownbeard. Woody vines are infrequent and include earleaf greenbrier. Evidence of moderate to severe ground disturbance is limited to small areas. Light disturbance is evident throughout; however, weedy cover was generally low.

Wet Flatwoods (~147 Acres)

Wet flatwoods occur in broad, low flatlands, often in a mosaic with these communities. They are found in the ecotones between mesic flatwoods, shrub bogs, wet prairies, dome swamps, or strand swamps. Wet flatwoods are pine forests with a sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The

relative density of shrubs and herbs varies greatly in wet flatwoods. Shrubs tend to dominate where fire has been absent for a long period or where cool season fires predominate; herbs are more abundant in locations that are frequently burned. Soils and hydrology also influence the relative density of shrubs and herbs. Soils of shrubby wet flatwoods are generally poorly to very poorly drained sands. These soils generally have a mucky texture in the uppermost horizon. Loamy sands are typical of soils in grassy wet flatwoods. They are relatively open-canopy forests of scattered pine trees or cabbage palms with either a thick shrubby understory and very sparse ground cover, or a sparse understory and a dense ground cover of hydrophytic herbs and shrubs. Several variations exist between these extremes. Wet flatwoods can occur on broad, poorly drained flats or as transitions from mesic flatwoods to wetlands.

At BFWEA, wet flatwoods occur in transitions between mesic flatwoods and wetlands. Some of the areas mapped as wet flatwoods appear to have been wet prairies (with inclusions of wet flatwoods) that have been planted in, or are otherwise invaded by, pine trees. There currently is a canopy of widely spaced mature slash pine. There is a sub-canopy layer in areas that have not burned in many years. Laurel oak is the dominant species. The tall shrub layer is variable, ranging from absent in the regularly burned areas to dense in the non-burned areas (generally in the southern end of the site). Dominant species are red maple, myrtle dahoon, wax myrtle, swamp bay, and laurel oak. Short shrubs are similarly variable; dominant species are peelbark St. John's wort, myrtle dahoon, gallberry, wax myrtle, swamp bay, sand blackberry.

Species observed are blue maidencane, broomsedge bluestem, wiregrass, smooth beggarticks, spadeleaf, toothachegrass, dogfennel, slender flattop goldenrod, myrtleleaf St. John's wort, soft rush, Carolina redroot, water cowbane, bahiagrass, rosy camphorweed, fascicled beaksedge, narrowfruit horned beaksedge, sugarcane plumegrass, netted nutrush, Florida dropseed, and Virginia chain fern. Most of the areas mapped as wet flatwoods have a high proportion of weedy species, indicating past ground disturbance. Vines were not a significant component of the wet flatwoods.

Xeric Hammock (~3 Acres)

Xeric Hammock is a forest of xerophytic oaks of variable height and density occurring on well-drained sandy soils. The typical plant association is sand live oak-scrub oaks-lyonia-saw palmetto. Xeric Hammock is a climax scrub community that naturally develops in fire shadows often associated with wetlands or steep slopes. Scrub or sandhill that has been allowed to develop an oak canopy because of insufficient fire is often classified as xeric hammock, which is the case for the one small hammock on BFWEA.

At BFWEA, although the xeric hammock can be seen on historic aerial photos, it is very small and not positioned to be sheltered from past fires. Development of this hammock has apparently occurred within the last 100 years. The canopy is composed of a few large live

oaks. The sub-canopy is composed of laurel oak. The tall shrub layer is composed of a few scattered common persimmon, and laurel oak. Short shrub cover is sparse and patchy; dominant species are woolly pawpaw, American beautyberry, laurel oak, and saw palmetto. Herbaceous cover is sparse and includes slender woodoats, needleleaf witchgrass, and bahia grass. Woody vines are common and include earleaf greenbrier, and muscadine.

2.2.2 Forest Resources

BFWEA, among others, helps sustain natural elements of the once vast pine forest ecosystem that existed in this region of northeast Florida. BFWEA is composed of almost botanically intact natural communities such as mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock. At BFWEA, the predominant forest resources are mesic pine flatwoods and sandhill, which comprise approximately 106 acres and 85 acres of the area respectively. As noted above, the mesic pine flatwoods and sandhill on site are open to sparse canopy of slash pine and longleaf pine. The current density of pine forests on BFWEA, likely indicate that timber thinning and harvesting activities will not be conducted in the near future.

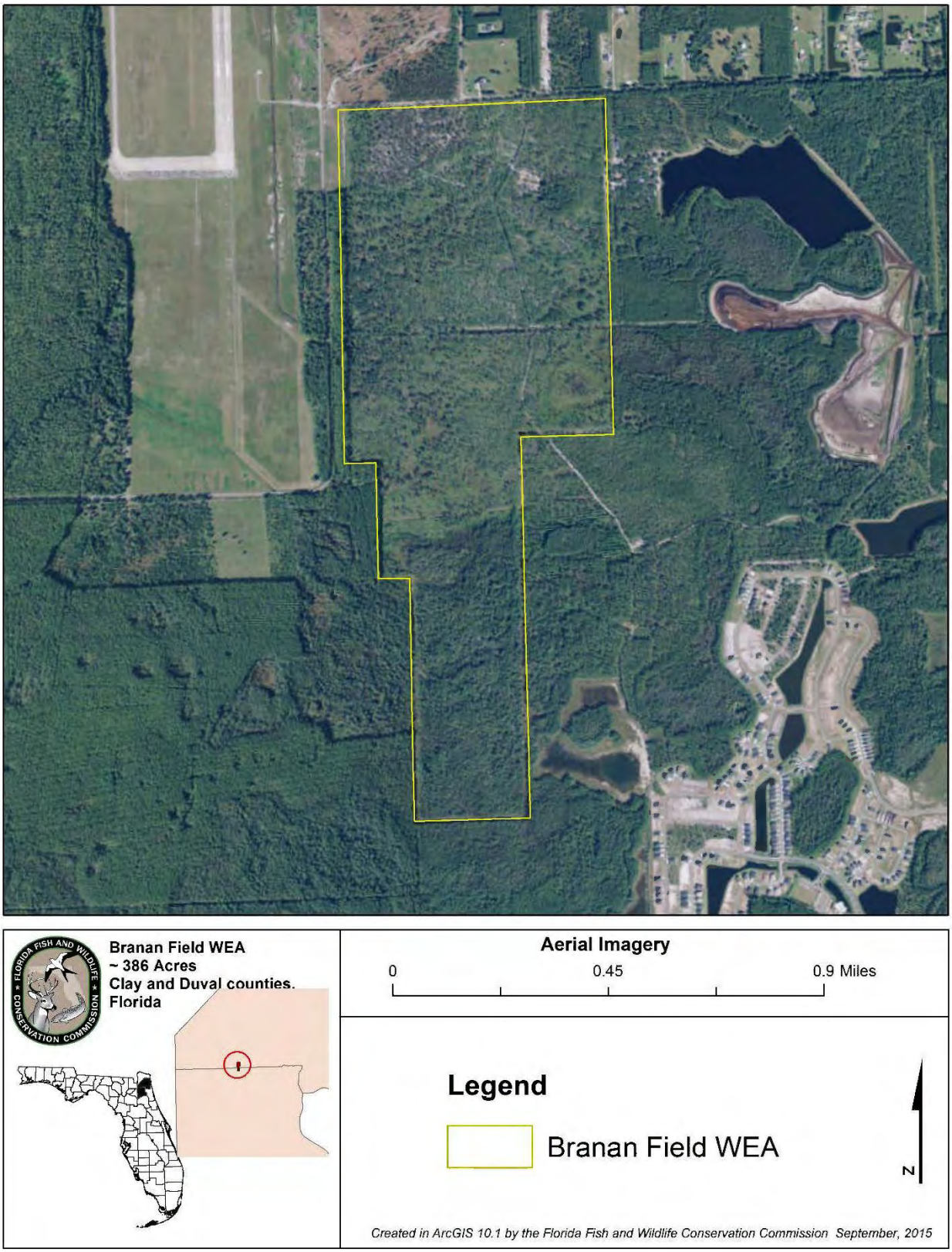

Figure 6. Aerial Image of BFWEA

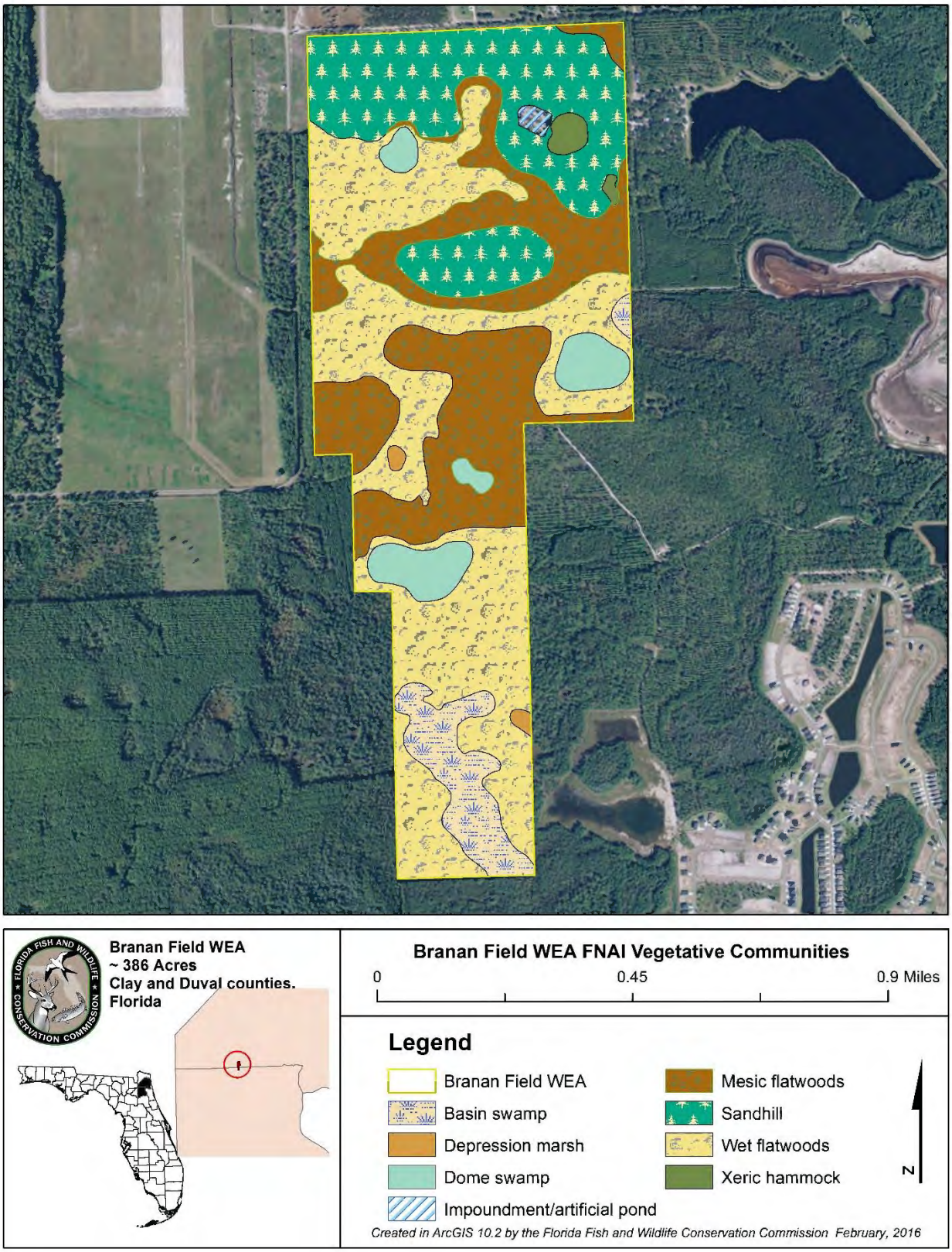

Figure 7. FNAI Natural Communities of BFWEA

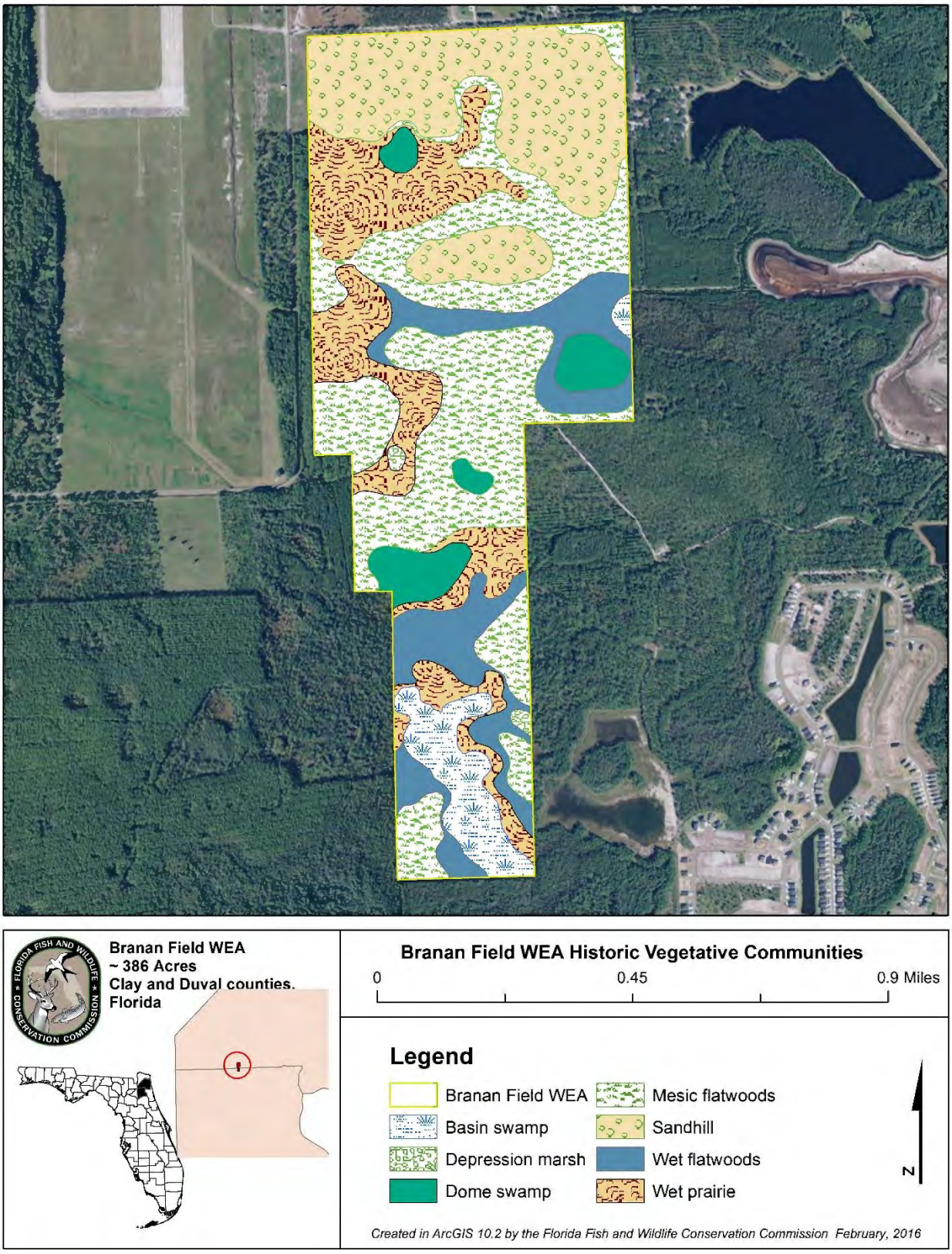

Figure 8. FNAI Historic Natural Communities of BFWEA

2.3 Fish and Wildlife Resources

Active wildlife management practices and a diversity of habitat types make the BFWEA an excellent place to view wildlife. The BFWEA's mesic flatwoods, sandhills, wet flatwoods and other natural communities provide critical habitat for resident and migratory wildlife. FWC maintains an inventory of fauna occurring or potentially occurring on BFWEA, including, native mammals identified as having potential habitat, (Table7), reptiles and amphibians (Table 8), birds (Table 9), invertebrates (Table 10). An inventory of exotic fauna is also maintained (Table 11).

Table 7. Native Mammal species Identified as Having Potential Habitat on BFWEA

Common name	Scientific name
Big brown bat	*Eptesicus fuscus*
Bobcat	*Lynx rufus*
Cotton mouse	*Peromyscus gossypinus*
Eastern woodrat	*Neotoma floridana*
Florida black bear	*Ursus americanus floridanus*
Long-tailed weasel	*Mustela frenata olivacea*
Northern yellow bat	*Lasiurus intermedius*
Raccoon	*Procyon lotor*
Round-tailed muskrat	*Neofiber alleni*
Sherman's fox squirrel	*Sciurus niger shermani*
Southeastern bat	*Myotis austroriparius*
Southeastern Pocket Gopher	*Geomys pinetis*
Southern shrew	*Sorex longirostris longisrostris*
Striped skunk	*Mephitis mephitis*
Virginia opossum	*Didelphis virginiana*
White-tailed deer	*Odocoileus virginianus*

Table 8. Amphibian and Reptile Species Known to Occur on BFWEA

Common Name	Scientific Name
Chicken turtle	*Deirochelys reticularia*
Cottonmouth	*Agkistrodon piscivorus*
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern hognose snake	*Heterodon platirhinos*
Eastern indigo snake	*Drymarchon couperi*
Florida box turtle	*Terrapene carolina bauri*
Florida pine snake	*Pituophis melanoleucus mugitus*
Florida watersnake	*Nerodia fasciata*
Gopher frog	*Lithobates capito*

Gopher tortoise	*Gopherus polyphemus*
Mole kingsnake	*Lampropeltis calligaster*
Oak toad	*Anaxyrus quercicus*
Ornate chorus frog	*Pseudacris ornata*
Southern fence lizard	*Sceloporus undulatus*
Southern hognose snake	*Heterodon simus*
Southern leopard frog	*Lithobates sphenocephalus*
Tiger salamander	*Ambystoma tigrinum*

Table 9. Avian Species Known to Occur on BFWEA

Common Name	Scientific Name
Acadian flycatcher	*Empidonax virescens*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American kestrel	*Falco sparverius*
American robin	*Turdus migratorius*
Bachman's sparrow	*Aimophila aestivalis*
Bald eagle	*Haliaeetus leucocephalus*
Barred owl	*Strix varia*
Black vulture	*Coragyps atratus*
Black-and-white warbler	*Mniotilta varia*
Blue grosbeak	*Passerina caerulea*
Blue jay	*Cyanocitta cristata*
Blue-gray gnatcatcher	*Polioptila caerulea*
Blue-headed vireo	*Vireo solitarius*
Boat-tailed grackle	*Quiscalus major*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Brown-headed nuthatch	*Sitta pusilla*
Burrowing owl	*Athene cunicularia*
Carolina chickadee	*Poecile carolinensis*
Carolina wren	*Thryothorus ludovicianus*
Cedar waxwing	*Bombycilla cedrorum*
Chimney swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Chuck-will's-widow	*Caprimulgus carolinensis*
Common grackle	*Quiscalus quiscula*
Common ground-dove	*Columbina passerina*
Common nighthawk	*Chordeiles minor*
Common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
Downy woodpecker	*Picoides pubescens*
Eastern bluebird	*Sialia sialis*
Eastern kingbird	*Tyrannus tyrannus*
Eastern meadowlark	*Sturnella magna*

Eastern phoebe	*Sayornis phoebe*
Eastern screech owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
European starling	*Sturnus vulgaris*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Gray catbird	*Dumetella carolinensis*
Great blue heron	*Ardea herodias*
Great crested flycatcher	*Myiarchus crinitus*
Great egret	*Ardea alba*
Great horned owl	*Bubo virginianus*
Green heron	*Butorides striatus*
Henslow's sparrow	*Ammodramus henslowii*
Hermit thrush	*Catharus guttatus*
Hooded warbler	*Wilsonia citrina*
House sparrow	*Passer domesticus*
House wren	*Troglodytes aedon*
Indigo bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
Lesser yellowlegs	*Tringa flavipes*
Little blue heron	*Egretta caerulea*
Loggerhead shrike	*Lanius ludovicianus*
Mississippi kite	*Ictinia mississipiensis*
Mourning dove	*Zenaida macroura*
Northern bobwhite	*Colinus virginianus*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Parula Americana*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Orange-crowned warbler	*Oreothlypis celata*
Orchard oriole	*Icterus spurius*
Osprey	*Pandion haliaetus*
Palm warbler	*Setophaga palmarum*
Pileated woodpecker	*Dryocopus pileatus*
Pine warbler	*Setophaga pinus*
Prairie warbler	*Setophaga discolor*
Prothonotary warbler	*Protonotaria citrea*
Purple gallinule	*Porphyrula martinica*
Purple martin	*Progne subis*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-eyed vireo	*Vireo olivaceus*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Ruby-crowned kinglet	*Regulus calendula*

Ruby-throated hummingbird	*Archilochus colubris*
Sharp shinned hawk	*Accipiter striatus*
Snowy egret	*Egretta thula*
Song sparrow	*Melospiza melodia*
Summer tanager	*Piranga rubra*
Swallow-tailed kite	*Elanoides forficatus*
Swamp sparrow	*Melospiza georgiana*
Tricolored heron	*Egretta tricolor*
Tufted titmouse	*Baeolophus bicolor*
Turkey vulture	*Cathartes aura*
White ibis	*Eudocimus albus*
White-eyed vireo	*Vireo griseus*
Wild turkey	*Meleagris gallopavo*
Wood duck	*Aix sponsa*
Wood stork	*Mycteria americana*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Yellow-billed cuckoo	*Coccyzus americanus*
Yellow-rumped warbler	*Setophaga coronata*
Yellow-throated vireo	*Vireo flavifrons*
Yellow-throated warbler	*Dendroica dominica*

Table 10. Invertebrate Species Known to Occur on BFWEA

Common Name	Scientific Name
Barred yellow	*Eurema daira daira*
Bella moth	*Utetheisa bella*
Berry's skipper	*Euphyes berryi*
Black swallowtail	*Papilio polyxenes*
Bleeding flower moth	*Schinia sanguinea*
Carolina satyr	*Hermeuptychia sosybius*
Ceraunus blue	*Hemiargus ceraunus*
Cloudless sulphur	*Phoebis sennae eubule*
Common buckeye	*Junonia coenia*
Common wood-nymph	*Cercyonis pegala*
Confused cloudywing	*Thorybes confusis*
Delaware skipper	*Anatrytone logan*
Dion skipper	*Euphyes dion*
Dotted roadside-skipper	*Amblyscirtes eos*
Eastern tiger swallowtail	*Papilio glaucus*
Fiery skipper	*Hylephila phyleus*
Gray hairstreak	*Strymon melinus*
Gulf fritillary	*Agraulis vanillae*
Horace's duskywing	*Erynnis horatius*
Little metalmark	*Calephelis virginiensis*

Little yellow	*Eurema lisa*
Long-tailed skipper	*Urbanus proteus*
Monarch	*Danaus plexippus*
Northern cloudywing	*Thorybes pylades*
Ocola skipper	*Panoquina ocola*
Palamedes swallowtail	*Papilio palamedes*
Palmetto skipper	*Euphyes arpa*
Phaon crescent	*Phyciodes phaon*
Pipevine swallowtail	*Battus philenor*
Queen	*Danaus gilippus*
Red-banded hairstreak	*Calycopis cecrops*
Sleepy orange	*Abaeis nicippe*
Spicebush swallowtail	*Papilio troilus*
Southern cloudywing	*Thorybes bathyllus*
Tawny-edged skipper	*Polites themistocles*
Twin-spot skipper	*Oligoria maculata*
Whirlabout	*Polites vibex*
Zarucco duskywing	*Erynnis zarucco*
Zebra longwing	*Heliconius charithonia*
Zebra swallowtail	*Eurytides marcellus*

Table 11. Exotic Fauna Identified as Having Potential Habitat on the BFWEA

Common name	Scientific name
Mammals	
Coyote	*Canis latrans*
Nine-banded armadillo	*Dasypus novemcinctusnovemcintus*
Wild hog	*Sus scrofa*
Birds	
European Starling	*Sturnus vulgaris*
Rock dove	*Columba livia*

2.3.1 Integrated Wildlife Habitat Ranking System

The FWC has developed the Integrated Wildlife Habitat Ranking System (IWHRS) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of land cover and wildlife species data. The IWHRS evaluates 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 BFWEA has a high mean wildlife value of 6.9. The FWC's IWHRS map for the BFWEA is shown in Figure 9.

2.3.2 Imperiled Species

As described above, the BFWEA has a variety of natural communities that support a number of imperiled (species listed by the U.S. Fish and Wildlife Service [USFWS] or the FWC as endangered, threatened, or species of special concern), rare, and other more abundant wildlife species. Table 12 lists some of the rare and imperiled wildlife species that have been documented as occurring on or in the vicinity of the BFWEA.

Table 12. Imperiled Wildlife Species Known or Expected to Occur at BFWEA

Common Name	Scientific Name	Status
Birds		
Southeastern American kestrel	*Falco sparverius paulus*	ST
Mammals		
Sherman's fox squirrel	*Sciurus niger shermani*	SSC
Reptiles		
Florida pine snake	*Pituophis melanoleucus mugitus*	ST
Gopher tortoise	*Gopherus polyphemus*	ST

Abbreviations: State-designated Threatened (ST), or State Species of Special Concern (SSC).

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 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."

On January 11, 2017, new threatened species rules approved by the FWC were implemented. 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.

2.3.3 FWC Wildlife Observations and FNAI Element Occurrences

A diversity of wildlife species are found on the BFWEA. The FNAI element occurrence records include six imperiled species. As defined by the FNAI, an "element" is any exemplary or rare component of the natural environment, such as a species, natural community, bird colony, spring, sinkhole, cave, or other ecological feature. An element occurrence is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. The FNAI assigns a rank to each "element" occurrence. This ranking system was developed by TNC 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 12.5 contains a letter from the FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

Table 13. FNAI Element Occurrences on BFWEA

Common Name	Scientific Name
Eastern Meske's Skipper	*Hesperia meskei straton*
Florida toothache grass	*Ctenium floridanum*
Gopher tortoise	*Gopherus polyphemus*
Non-crested eulophia	*Eulophia ecristata*
Piedmont jointgrass	*Coelorachis tuberculosa*
Variable-leaf crownbeard	*Verbesina heterophylla*
Yehl skipper	*Poanes yehl*

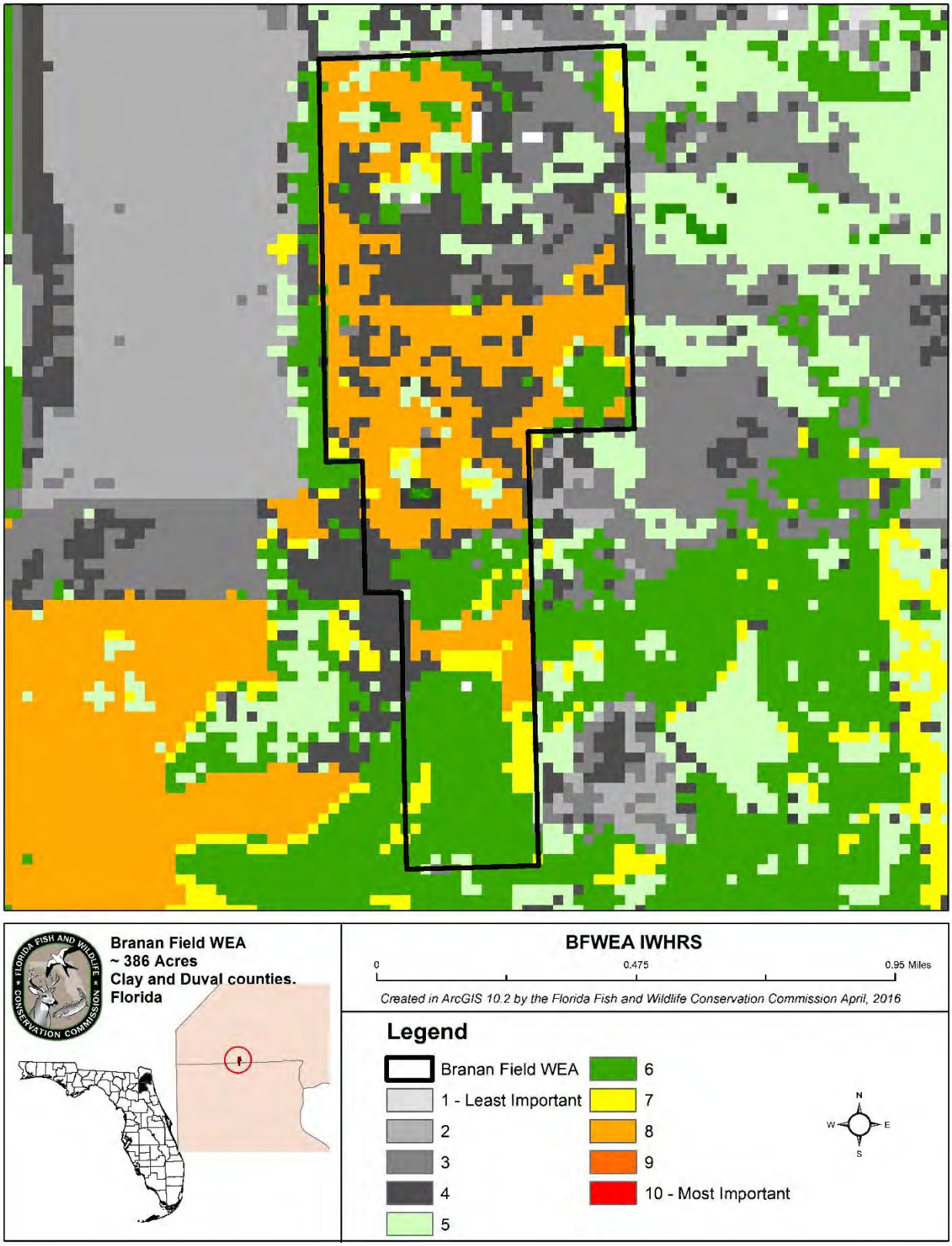

Figure 9. FWC Integrated Wildlife Habitat Ranking System 2009

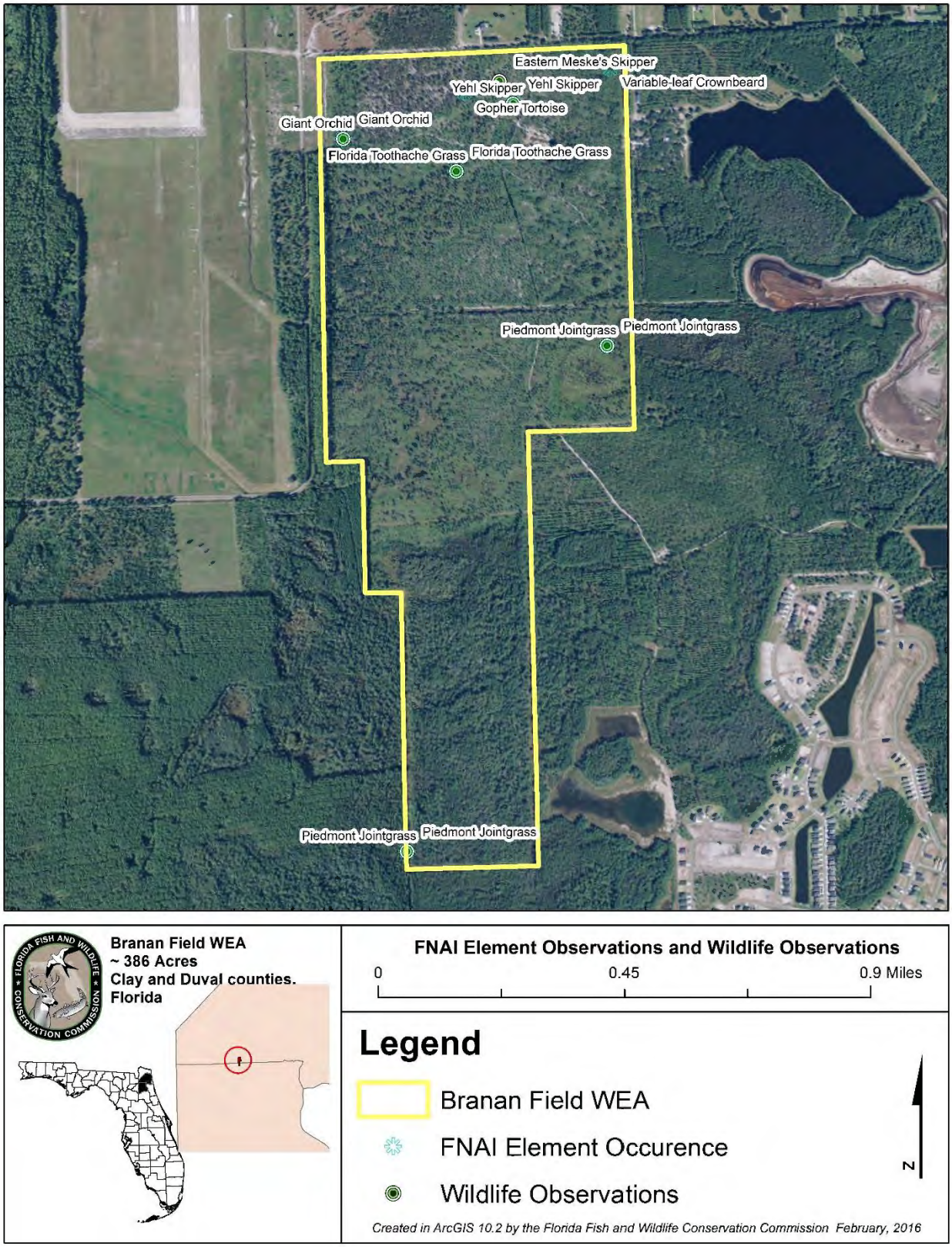

Figure 10. FNAI Element Occurrences on BFWEA

2.4 Native Landscapes

As described earlier, a variety of natural communities provide habitat for the fish and wildlife found at BFWEA. The area's almost botanically intact natural communities include mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock. BFWEA sustains natural elements of the once vast pine forest ecosystem. Complete descriptions of the natural communities found the BFWEA can be found in Section 2.2.1 of this Management Plan.

2.5 Water Resources

All surface waters of the State are classified by DEP according to designated uses as described in Chapter 62-302.44 FAC. The surface waters of BFWEA are designated as Class III, and classified for fish consumption; recreation, as well as propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Additionally, it is the policy of DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 FAC). No degradation of water quality, other than that allowed in subsections Chapter 62-4.242(2) and (3) FAC, is permitted in these OFW, notwithstanding any other DEP rules that may allow water quality lowering.

Surface waters on the BFWEA include the Big Branch and Sal Taylor creeks. These streams drain to Yellow Water Creek, through Black Creek, and to the St. Johns River. Drainage from the southern portion of the area is directed into a small unnamed tributary before discharging into the river. Soil and surface moisture is greater in the southern portion of the area, and decreases in a northerly direction.

Additionally, the entirety of the BFWEA falls within the Lower St. Johns Basin and all of the surface waters within the area are classified by the DEP as Class III. Class III waters are intended for recreation and propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Approximately 69 acres of the BFWEA are classified within the National Wetlands Inventory as either freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, or riverine.

No portion of the BFWEA has been designated as OFW. BFWEA is not included within an Area of Critical State Concern and is not under study for such a designation.

2.6 Beaches and Dunes

The BFWEA does not contain beaches or dunes.

2.7 Mineral Resources

According to the University of Florida soil survey of Duval and Clay counties, possible minerals available include minerals like sand, clay and limestone. Possible mineral resources in Duval and Clay counties include clay or mud, beach sand, silt, gravel, peat,

sand and limestone. Other possible mineral resources in these two counties include calcium, phosphorus-phosphates, and stone.

2.8 Historical Resources

The DHR Master Site File indicates that there are no recorded archaeological sites within the boundaries of the BFWEA. As a result, the FWC will work with the DHR to determine if a cultural resource survey is necessary for the area and to document any historical or archaeological sites as necessary and feasible. All Master Site recordings, assessments, and preservation strategies will be coordinated with the DHR.

2.9 Scenic Resources

With its mixture of scenic natural communities such as mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock flora and fauna are abundant on BFWEA. Carnivorous pitcher plants, sundews, showy wildflowers and lupine occur throughout the area. As previously noted, a number of imperiled plants have been identified here, some of these include; the hooded pitcher plant, piedmont joint grass, non-crested Eulophia and Florida toothache grass.

In addition to the variety of unique and imperiled plants several listed species of animals can be seen year round. Some of these species include: gopher tortoises, eastern indigo snakes, eastern diamondback rattlesnakes, gopher frogs and Florida pine snakes. A number of these listed species find refuge within tortoise burrows. Eastern bluebirds, woodpeckers, pine warblers and brown-headed nuthatches are common residents of pine flatwoods. Visitors to the area can listen for the distinctive calls of the eastern towhee and Bachman's sparrow along with a diverse variety of both resident and migratory bird species that frequently use the area. White-tailed deer and wild turkey are also occasionally observed here.

3 Uses of the Property

3.1 Previous Use and Development

Prior to European settlement, the landscape of Florida, including this area of northeast Florida, was settled and used by a variety of Native Americans whose culture relied mainly on hunting, fishing, and subsistence agriculture. According to DHR, aboriginal people began to inhabit the land in Florida approximately 12,000 years ago. The DHR indicates that between 6,000 and 4,000 years ago, aboriginal people began to inhabit the land between the Tolomato River and the Atlantic Ocean which lies southeast of the area.

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 the 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 centuries. Use of these agricultural practices began an era of increased alteration of the natural landscape. However, it was not until the nineteenth and twentieth centuries that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development.

In general, the relatively intact conditions of the area's natural communities indicate prior agricultural use likely consisted primarily of timber harvesting and cattle grazing. An examination of aerial photographs dating back to 1956 indicate the BFWEA had been recently timbered, with no visible signs of residences, homesteads, or other structural development. These photos show the runway features of the adjoining Cecil Field, and an east-west drainage ditch through what is now BFWEA that receives runoff from the runway. A one-acre borrow pit located just south of the main entrance seems to have been created in 1987.

The area was designated as "Hunting Preserve" in a 1978 proposed development master plan put forth by the previous owners of the tract, Gulfstream Properties, Inc. The majority of the site was planted in slash pine in the mid-1980s at densities typical of commercial stocking rates (i.e. 700 stems per acre). Some evidence of moderate cattle grazing was also visible within the tract prior to acquisition by the FWC for conservation.

3.2 Current Use of the Property

As noted, the BFWEA is managed by the FWC as a WEA in conformance with the original purpose for acquisition for the protection of habitat critical to the conservation of the gopher tortoise. The area is also managed to protect and provide for water conservation; maintain ecological diversity; conserve habitat for imperiled, rare, and more common wildlife species; and to provide a diversity of fish and wildlife-based public outdoor recreational opportunities that are compatible with the original purpose for acquisition and do not adversely impact the long-term well-being of fish and wildlife habitats and their associated wildlife populations.

The BFWEA is being managed as a multiple-use public conservation land. Multiple-use management strategies incorporate uses related to wildlife, habitat, and forest management with natural resource based public outdoor recreation. Provisions have been made for fish and wildlife-based public outdoor educational and recreational opportunities that are compatible with the original purposes for acquiring the BFWEA.

Due to the proximity of population centers in Duval County, public use can be expected to increase as public awareness of opportunities increases.

3.2.1 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is the primary source of economic benefits from BFWEA, and contribute to the overall economy for the northcentral region of Florida. An FWC economic analysis, based on a current daily recreational carrying capacity of 60 individuals, was conducted. Although it should be noted that the current visitation rates on the area are estimated to be much lower than the area's established recreational carrying capacity. However, if this carrying capacity were achieved, a maximum total of 21,900 visitors per year could be expected. Primarily, as a result of this estimated visitation and use of the area, FWC economic analysis estimates indicate that the BFWEA will generate an estimated annual economic impact of $4,279,041 for the State and the northeast Florida region. This estimated annual economic impact has aided in the support or creation of an estimated 44 jobs.

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

3.3 Single- or Multiple-use Management

BFWEA will be managed under the multiple-use concept as a Wildlife and Environmental Area. BFWEA will provide fish and wildlife resource based public outdoor recreation and educational opportunities, while protecting the natural and historical resources found on the area. Any natural and historical resources of BFWEA 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 BFWEA. Uses classified as "Approved" are considered to be in accordance with the purposes for acquisition, as well as with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals and objectives as expressed in the Agency Strategic Plan (Appendix 12.6). Uses classified as "Conditional" indicate that the use may be acceptable but will be allowed only if approved through a process other than the management plan development and approval process (e.g., special-use permitting,

managed-area regulation and rule development). Uses classified as "Rejected" are not considered to be in accordance with the original purpose of acquisition or one or more of the various forms of guidance available for planning and management:

	Approved	**Conditional**	**Rejected**
Apiaries		✓	
Astronomy		✓	
Bicycling			✓
Cattle grazing			✓
Citrus or other agriculture			✓
Ecosystem services and maintenance		✓	
Ecotourism		✓	
Environmental Education	✓		
First-responder training		✓	
Fishing			✓
Geocaching		✓	
Hiking	✓		
Horseback riding			✓
Hunting		✓	
Linear facilities			✓
Military training			✓
Preservation of historical resources	✓		
Primitive camping			✓
Protection of imperiled species	✓		
Off-road vehicle use			✓
Shooting sports-park			✓
Soil and water conservation	✓		
Timber harvest		✓	
Wildlife observation	✓		

3.3.2 Incompatible Uses and Linear Facilities

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

3.3.3 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 BFWEA (Sections 5 -8). A detailed assessment of the benefits and potential impacts of planned uses and activities on natural and historical resources was an integral part of the development of the management activities and intent, goals, objectives, challenges, and strategies sections of this Management Plan.

3.4 Acreage Recommended for Potential Surplus Review

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

This evaluation consists of GIS modeling and analysis, aerial photography interpretation, analysis of fish and wildlife resources, a review of resource and operational management needs, and a review of public access and recreational use of the area. Also, FWC considers recommendations for surplus lands as they relate to Florida's "No Net Loss of Hunting Lands" legislation (Ch. 379.3001 F.S.), as well as surplus restrictions for lands acquired through the Federal Aid in Wildlife Restoration Act (Pittman-Robertson) or through other federal grant programs.

The evaluation of BFWEA 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 BFWEA is recommended for potential surplus.

4 Accomplished Objectives from the BFWEA Management Plan 1997-2007

This section is dedicated to reporting the extent to which the Objectives described in the BFWEA Management Plan 1997 – 2007 (pages 9 - 27) were successfully completed. Accomplishments for BFWEA during the previous planning timeframe are further discussed in more comprehensive detail throughout **Section 5 Management Activities and Intent** of this Management Plan.

The following **Resource Management Goals and Objectives** from the 1997 – 2007 BFWEA Management Plan describe the planned activities for BFWEA during this period. The degree to which FWC was able to accomplish the planned activities during this period is reflected as **Percent Accomplished** for each associated Objective.

Objectives Accomplished from the 1997 Management Plan		
Goals and Objectives	**Percent Accomplished**	**Comments**
Goal 1: Promote habitat conditions most critical to meeting the life history requirements of the gopher tortoise.		
Objective 1: Utilize prescribed burning to enhance habitat for the gopher tortoise.	100%	*Ongoing. BFWEA Management Units (MUs) 1, 2, 3 and 4 are within burn rotation with emphasis on growing season burns.*
Objective 2: Initiate pine thinning on sites where canopy closure threatens to reduce gopher tortoise habitat quality.	100%	*Completed in 1999. Ongoing assessment for future needs.*
Objective 3: Periodically monitor gopher tortoise populations to alert managers of major population changes.	100%	*Tortoise burrow surveys were conducted in 2004, 2006, 2012. Standardized methodologies have changed over timeframe.*
Goal 2: Introduce management actions that will maintain the integrity of upland communities.		

Objective 1: Initiate treatment actions to reduce Chinese tallow infestations.	100%	*All identified Chinese tallow trees were eradicated using Pronone pellets. Monitoring for invasive exotic vegetation is ongoing.*
Objective 2: Utilize prescribed burning to maintain the health, vigor and composition of flatwoods vegetation.	100%	*Ongoing. MU's 1, 2, 3 and 4 are within burn rotation with emphasis on growing season burns.*
Goal 3: Provide for management actions that may enhance habitat and populations of other listed wildlife where such activities are compatible with the management mission of BFWEA.		
Objective 1: Take into consideration other habitat features at BFWEA, such as the borrow pit and hardwood hammock, to promote habitat features for the gopher frog and Sherman's fox squirrel, respectively.	100%	*The FWC has completed a WCPR strategy for BFWEA that is being implemented.*
Objective 2: Utilize wooden nest structures as a method to enhance nesting by Southeastern kestrel.	100%	*Nest boxes were removed since adequate natural cavities in snags exist and WCPR program no longer calls for kestrel nest box monitoring.*
Goal 4: Apply the practice of controlled burning under a variable regime of intensity, frequency and seasonality to further the management mission at BFWEA. Objective: Reduce fuel loads to acceptable levels in order to minimize habitat damage from both wildfire and planned prescribed bums.		
Objective 1: Control palmetto invasion on flatwoods sites.	100%	*Currently controlled with prescribed burning. 2013 OBVM monitoring suggests Serenoa sp. is controlled. Continued monitoring conducted via OBVM.*
Goal 5: Apply the practice of controlled burning in a manner that is safe, cost effective, and consistent with the management mission at BFWEA.		

Objective 1: Continue contractual burning services with the Florida Forest Service.	100%	*Currently prescribed burning is being performed in-house by FWC. However contractual burning is utilized by FWC when appropriate.*
Objective 2: Provide fire training to management personnel.	100%	*All FWC personal participating in prescribed burning are required to complete prescribed burning training and certification.*
Objective 3: Ensure that FWC management personnel have adequately acquainted contract personnel with job specifications, particularly in regards to fire line plowing and controlled burning activities.	100%	*Currently these management activities are completed in-house by FWC as needed. However contractual burning is utilized by FWC when appropriate.*
Objective 4: Defer to FFS decision making on issues concerning the application of fire and the potential threat to health and property.	100%	*Prescribed burning authorizations are obtained from FFS as required. Application of prescribed fire is performed in accordance with applicable laws and regulations.*
Goal 6: Apply the practice of controlled burning as a tool to achieve desired wildlife and community management objectives.		
Objective 1: Develop a burn schedule procedure that alters the timing and seasonality of burning.	100%	*Ongoing. A combination of dormant and growing season burns have been conducted with emphasis on growing season burning.*
Objective 2: Develop and implement a burn evaluation procedure that can be utilized by managers to assess burn results and regime burn strategies when necessary.	100%	*Ongoing. The FWC has implemented OBVM monitoring to assess the*

		effectiveness of prescribed burning at meeting Desired Future Conditions of vegetative attributes.
Objective 3: Minimize soil disturbances caused by fire lines.	100%	*Ongoing. Permanent fire-lines are established and maintained in order to minimize any additional soil disturbance in native habitats.*
Goal 7: Prevent all wildfire from causing personal injury or offsite property damage.		
Objective 1: Any application of fire at BFWEA must be consistent with a burn plan approved by the FFS.	100%	*Ongoing. All prescribed burns are authorized by FFS as required and are conducted in accordance with an approved burn prescription.*
Objective 2: In the event of wildfire, defer all decision making regarding fire suppression to the FFS incident commander.	100%	*Ongoing. FFS administers Florida's Forest Fire Laws and Open Burning Regulations. A wildfire occurred on BFWEA in early 2016. FFS responded as appropriate regarding fire suppression activities.*
Goal 8: Maintain improvements and necessary infrastructure in serviceable and appropriate condition.		
Objective 1: Perform routine inspection of internal roads, fencing, signage, and improvements and initiate service/repair actions when necessary.	100%	*Ongoing. FWC staff perform monitoring and maintenance of road and infrastructure routinely to maintain their operational effectiveness.*

Goal 9: Utilize contractual services as a means to achieve cost effectiveness in management situations that require either large pools of manpower, specialized training or expertise, or reliance on heavy equipment and machinery.		
Objective 1: Ensure that all contractors have been adequately briefed regarding job specifications and contract requirements.	100%	*Ongoing. FWC's contractual procedures ensure that a Project Manager's responsibilities include a Scope of Project Work Specifications to ensure all contractual requirements are performed satisfactorily.*
Objective 2: Advise all contractors of resource management objectives at BFWEA, and attempt to identify actions or situations where contractors might be in conflict with these objectives.	100%	*Ongoing. FWC's contractual procedures ensure that a Project Manager's responsibilities include a Scope of Project Work Specifications to ensure all contractual requirements are performed satisfactorily.*
Goal 10: Reduce Chinese tallow plant infestations to levels that can be adequately controlled through regular herbicide applications performed by program personnel.		
Objective 1: Monitor exotic plant infestations on an annual basis.	100%	*Ongoing. FWC continues to monitor and treat any exotic plant species identified on the area to control invasive exotic plant species.*
Objective 2: Inform adjoining property owners of the resource problems associated with exotic plants and obtain landowner cooperation for including private lands in a control program.	100%	*Ongoing. No major exotic plant species infestations have*

		been identified at this time on BFWEA.
Goal 11: Maintain native tree and herbaceous cover at levels consistent with listed wildlife management goals.		
Objective 1: Utilize fire and thinning to maintain canopy cover below 80%.	100%	*Ongoing. FWC completed timber thinning on the area in 1999. Continued monitoring of the plant structure and composition is accomplished through OBVM.*
Objective 2: Perform Wildlife Stand Improvement including use of herbicides and selective tree cutting to reduce canopy closure by hardwoods.	100%	*Ongoing. Currently hardwood control is accomplished through prescribed burning. Alternate mechanical and chemical treatments will be considered as appropriate.*
Goal 12: Provide quality wildlife viewing opportunities to the public.		
Objective 1: Identify suitable areas where habitat can be managed to increase wildlife viewing.	100%	*Trails and recreational opportunities were sited to best take advantage of wildlife viewing opportunities.*
Objective 2: Develop amenities such as nature trails, pamphlets, viewing platforms, food plots and interpretive signage to enrich and promote wildlife viewing opportunities.	100%	*Ongoing. Site appropriate amenities and infrastructure have been developed including trails, kiosk, a sandhill restoration sign, trail map, and website. FWC will continue to evaluate opportunities to improve recreational opportunities.*
Objective 3: Establish baseline standards for assessing the quality of wildlife viewing, and routinely monitor uses to determine if	100%	*Ongoing. FWC has established a carrying capacity for*

recreational levels need to be adjusted to meet standards.		*BFWEA and will continue to monitor user satisfaction and resource impacts.*
Objective 4: Allow personnel to be available to the public for programs and exhibits that feature wildlife viewing at BFWEA.	100%	*Ongoing. FWC participates in these activities as requested and feasible.*
Goal 13: Insure that increased demands for recreational use and access do not conflict with listed wildlife management goals.		
Objective 1: Coordinate with LE for patrol and enforcement of adopted rules.	100%	*Ongoing. FWC has established a carrying capacity for BFWEA and will continue to monitor user satisfaction and resource impacts.*
Objective 2: Install and maintain appropriate signage to inform the public of accepted uses, rules and regulations.	100%	*Ongoing. FWC installed informational signs to provide the areas allowable uses, rules and regulations.*
Goal 14: Develop broader constituency support for the FWC Mitigation Park Program.		
Objective 1: Coordinate with conservation organizations and universities to promote access to BFWEA and encourage volunteer work programs.	100%	*Ongoing. In 2008, the University of Florida completed a study on Upper Respiratory Tract Disease (URTD) in gopher tortoise populations at BFWEA.*

5 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve or otherwise use fragile natural resources and nonrenewable historical resources. In general, the FWC management intent for BFWEA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity, especially fish and wildlife resources. In conjunction with this primary emphasis, it is FWC's intent to provide quality fish and wildlife resource based public outdoor recreational opportunities on BFWEA. The FWC will utilize the best available data,

guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, as noted earlier, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

5.1 Land Management Review

Pursuant to Ch. 259.036, FS, the DEP-DSL is required to "cause periodic management reviews to be conducted" on Board of Trustees conservation lands to determine if they "are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to FS, 259.032." However, as previously discussed, title to the BFWEA is held by FWC, therefore an LMR is not statutorily required for the area. As a result, no LMR has been conducted for the BFWEA.

5.2 Adaptive Management

Adaptive management is "learning by doing";[1] it is the adjustment or modification of conservation actions to achieve a desired conservation goal. In practice, adaptive management is a rigorous process that includes sound planning and experimental design with a systematic evaluation process that links monitoring to management.[1, 2] Adaptive management requires flexibility for implementation, but should be fitted over a fundamentally sound, well-planned design.

An adaptive management process produces the strongest inference and most reliable results when experimental design components are incorporated into the monitoring process. Adaptive management is most rigorously applied in an active format when components of experimental design (i.e., controls, replication, and randomization) are included in the monitoring process.[2, 3] Incorporating valid statistical analyses of results will further enhance the value of the adaptive management process. However, in some situations, rigorous experimental design procedures can be relaxed without invalidating monitoring results. In a passive format, adaptive management can involve applying a conservation action at a site, observing the results and adjusting the action in the future if warranted. [2, 3]

Proposed adaptive management, monitoring and performance measures are developed through literature reviews and FWC staff meetings. Overall, a results-based approach is incorporated into this Management Plan, for which effective monitoring is an integral component. The FWC will monitor conservation actions, species, habitats, and major threats to the conservation of the natural and historical resources of BFWEA.

5.2.1 Monitoring

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

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

For natural communities, monitoring protocols are established through FWC's OBVM, program (Section 5.3.1), which monitors how specific vegetative attributes are responding to FWC management. For imperiled and focal fish and wildlife species, monitoring protocols are established through FWC's WCPR program (Section 5.4.2). FWC staff may monitor additional fish and wildlife species when deemed appropriate. Exotic and invasive plant and animal species (Section 5.5) are also monitored as needed and appropriate. Recreational uses are monitored through FWC's Office of Public Access and Wildlife Viewing Services, and work in conjunction with the establishment and adjustment of public access carrying capacities (Section 5.6.3). Historical resources (Section 5.9) are monitored with guidance from DHR.

5.2.2 Performance Measures

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

5.2.3 Implementation

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

5.3 Habitat Restoration and Improvement

On BFWEA, FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, and restoration of disturbed areas. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions and/or the use of mechanical or chemical forest

management techniques as appropriate. Retention of the native old growth component of forests, while also providing for natural regeneration, remains an important consideration. BFWEA has high-quality native communities including depression marshes, creeks, floodplain swamps, hammocks and pine uplands that FWC will continue to manage and protect. On disturbed upland sites, FWC intends to initiate ground cover and natural community restoration.

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

5.3.1 Objective-Based Vegetation Management

The FWC uses a comprehensive resource management approach to 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 attributes are responding to FWC management.

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

After natural communities have been mapped, FWC land managers will identify those natural communities that will influence and guide management decisions, known as the actively managed natural communities. Through OBVM monitoring, FWC collects data on a number of specific vegetation attributes that provide insight about the condition of the natural community. Because FWC is interested in the overall effect of management on the natural communities, OBVM data is analyzed at the natural community level.

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

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

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

Initial mapping and vegetation sampling 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 important operational information on a natural community's vegetation structural status at a given point in time and trend over time. Using this information, managers can evaluate, adjust and modify their management practices to meet the stated objectives. By comparing natural community mapping products through the years, managers can track progress in moving altered communities to functioning natural communities.

5.3.2 Prescribed Fire and Fire Management

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

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

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

diversity and a mosaic of vegetation patterns. This mosaic is designed to have both frequently burned and infrequently burned aspects.

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

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 1-4 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 will be developed and implemented for BFWEA. This plan will include, but not be limited to, delineation of burn management units, detailed descriptions of prescribed fire methodology, safety, and smoke management guidelines.

Since acquisition, all upland acres at BFWEA have been managed with prescribed fire at least 7 to 8 burn rotations. Fire dependent communities at BFWEA are kept on a 2 to 3 year rotation and there are no back logged acres that are fire type acres. All prescribed fire data is uploaded into FWC's land management information system.

Potential projected challenges with continuing to successfully implement prescribed fire on the area are described further in Section 8. The continuing benefits of prescribed fire on

the area's wildlife habitats along with other ongoing habitat restoration activities that are being implemented on BFWEA are discussed in more detail below.

5.3.3 Habitat Restoration

As noted above, BFWEA is in maintenance condition and no restoration work is taking place on the area, but the hiking trail and boundary (fire break) are maintained and the area is checked for invasive exotic vegetation periodically. The population of gopher tortoises has been monitored as required and the population appears stable over time. The physical characteristics of the botanical communities are monitored periodically as part of the OBVM program.

On BFWEA, FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, retention of the native old growth component of forests, while also providing for natural regeneration, remains an important consideration. BFWEA has high-quality native communities including mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock that FWC will continue to manage and protect.

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

In addition to the prescribed burning activities described above, the FWC has established OBVM management prescriptions, associated monitoring and has implemented resource management regimes, including prescribed burning, mechanical treatments, exotic plant species treatments, etc., which includes sandhill and mesic flatwoods communities on the area. Continuing habitat management activities on BFWEA will focus on enhancing natural communities, maintaining recommended fire return intervals for fire adapted communities, treating and removing exotic plant species, and controlling vegetation through mowing and roller chopping as needed. Exotic species control is more extensively discussed in Section 5.5, below. Further specific habitat management and improvement objectives planned for BFWEA are described in Section 6 below.

5.4 Fish and Wildlife Management, Imperiled and Focal Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration

5.4.1 Fish and Wildlife

Due to the variety of natural communities, a diversity of associated wildlife, including rare, imperiled, common game, and non-game species, can be found on BFWEA. In managing for wildlife species, an emphasis will be placed on conservation, protection and management of natural communities. As noted above, natural communities important to wildlife include mesic flatwoods, sandhill and wet flatwoods. Natural communities that are less

represented on BFWEA include basin swamp, depression marsh, dome swamp, impoundment/artificial pond, and xeric hammock.

The size and natural community diversity of BFWEA creates a habitat mosaic for a wide variety of wildlife species. Resident wildlife will be managed for optimum richness, diversity and abundance. In addition to resident wildlife, BFWEA provides resources critical to many migratory birds including passerines, raptors, and others. Habitats important to migratory species will be protected, maintained or enhanced.

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

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

5.4.2 Imperiled and Focal 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 WCPR program to ensure management is having the desired effect on wildlife.

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

The WCPR program helps 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. By providing FWC managers with information on actions they should undertake, the FWC intends for the strategy to assure the presence and persistence of Florida's endangered and threatened fish and wildlife species (see http://myfwc.com/media/1515251/Threatened-Endangered-Species.pdf), as well as select focal species found on the area.

In summary, for FWC-managed areas, the WCPR program helps assess imperiled and focal wildlife species needs and opportunities, prioritize what FWC does for imperiled and focal species, prescribe management actions to aid in species recovery, prescribe monitoring protocols to allow evaluation of the species' response to management, and ensure the information is shared with others. Through the actions of this program, FWC will facilitate fulfilling the needs of focal and imperiled wildlife species on BFWEA. In the long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining wildlife species.

The FWC held a WCPR workshop for the BFWEA in September 2009. After incorporating input from a review by experts, subsequently the WCPR Strategy was reviewed and approved by FWC in May 2013. Using statewide landcover-based habitat models, the BFWEA WCPR Strategy identifies 13 focal species as having potential habitat on the area. Of the focal species identified as having habitat on the area, the BFWEA WCPR Strategy provides measurable objectives or recommends some level of monitoring for Florida mouse and gopher tortoise. Limited opportunity species included Florida black bear, and striped newt (and the species group wading birds).

BFWEA staff will continue to implement the BFWEA WCPR Strategy. The FWC will also review and revise this document as appropriate. During the previous planning period, a survey by staff in 2012 yielded a density estimate of 1 tortoise per acre. Additional tortoise survey were conducted in 1994 and 2006, yielding similar densities. These densities are within the range of average densities in good gopher tortoise habitat. The densities, coupled with evidence of reproduction and recruitment, indicate a sustainable population.

Ongoing natural community management emphasizing the frequent use of prescribed fire to promote a diverse ground cover and open tree canopy will benefit gopher tortoises.

Based on the life history of this species and the rate at which it responds to management, workshop participants reached consensus that monitoring on a 5-year interval is appropriate (Section 5.2.1 of the WCPR Strategy).

The FWC conducted three trapping surveys, within 2 management units of BFWEA that had gopher tortoise burrows, intact ground cover, and had been treated with fire on a 2-year rotation, specifically looking for the Florida mouse. No Florida mice were captured during the separate trapping events. Therefore, staff has not documented the species on BFWEA. Additional monitoring efforts will continue as appropriate and feasible. These imperiled species projects, along with other ongoing imperiled species management activities, will continue to be implemented in accordance with the BFWEA WCPR Species Management Strategy.

The FWC will continue to implement the BFWEA WCPR Strategy (Appendix 12.12). The FWC will also continue to review and revise this document as appropriate.

Table 14. Focal Species Identified as Having Potential Habitat on the BFWEA

Common Name	Scientific Name
Bachman's sparrow	*Peucaea [Aimophila] aestivalis*
Brown-headed nuthatch	*Sitta pusilla*
Eastern Indigo snake	*Pituophis melanoleucus mugitus*
Florida black bear	*Ursus americanus floridanus*
Florida mouse	*Podomys floridanus*
Florida pine snake	*Pituophis melanoleucus mugitus*
Frosted flatwoods salamander	*Ambystoma cingulatum*
Gopher tortoise	*Gopherus polyphemus*
Northern bobwhite	*Colinus virginianus*
Sherman's fox squirrel	*Sciurus niger shermani*
Swallow-tailed kite	*Elanoides forficatus*
Striped newt	*Notophthalmus perstriatus*
Wading birds	(*Multiple spp.*)

5.5 Exotic and Invasive Species Maintenance and Control

The FWC will continue efforts to control the establishment and spread of Florida Exotic Pest Plant Council (FLEPPC) Category I or II plants on BFWEA. Control technologies may include mechanical, chemical, biological, and other appropriate treatments. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

Exotic and invasive plant species previously known to occur on the BFWEA are treated as needed and include Japanese climbing fern, mimosa and Chinese tallow. Exotic and invasive plant species have been previously identified as occurring at varying densities on

approximately 1 acre of the BFWEA. However, the FWC's methodology for determining the number of acres "infested" with invasive exotic plants only represents a cumulative acreage, and does not reflect the degree of the invasive exotic occurrence. The degree of infestation among areas identified with invasive exotic plant occurrences often varies substantially by species, level of disturbance, environmental conditions, and the status of ongoing eradication and control efforts. The FWC will continue to focus treatments on areas identified as having invasive exotic plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring.

Additionally, the FWC will continue efforts to control the introduction of exotic and invasive species, as well as pests and pathogens, on the BFWEA by inspecting any vehicles and equipment brought onto the area by contractors and requiring that they be free of vegetation and dirt. If vehicles or equipment used by contractors are found to be contaminated, they will be referred to an appropriate location to clean the equipment prior to being allowed on the area. This requirement is included in every contract for contractors who are conducting any operational or resource management work on the area. In this way, FWC implements a proactive approach to controlling the introduction of exotic pests and pathogens to the area.

An exotic animal species of limited concern on the BFWEA is the feral hog. These animals have high reproductive rates, and when populations reach high densities, feral hogs can significantly degrade natural communities through foraging activity (rooting). The FWC will consult with other regional natural resource managing agencies and private landowners to coordinate feral hog control measures as necessary. Trapping is one measure that may be implemented to augment ongoing feral hog control efforts and to further reduce the natural community damage and degradation caused by this species.

Currently, maintenance and control of invasive exotic plant species (Table 6) is not a significant management challenge at BFWEA. During the previous 10-year planning period, FWC continued to implement exotic and invasive species control and maintenance activities throughout BFWEA. These included exotic plant species treatments on a total of 1 acre within areas classified as infested, resulting in an overall 100% of BFWEA currently being in a maintenance condition. No area of BFWEA remains classified in an infested condition, thus requiring continued intensive treatments. The FWC will continue to focus control and maintenance activities on areas identified as having invasive exotic plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring activities. Ongoing exotic plant species objectives and challenges for BFWEA are further detailed in Sections 6 - 8 below and are displayed in Figure 11.

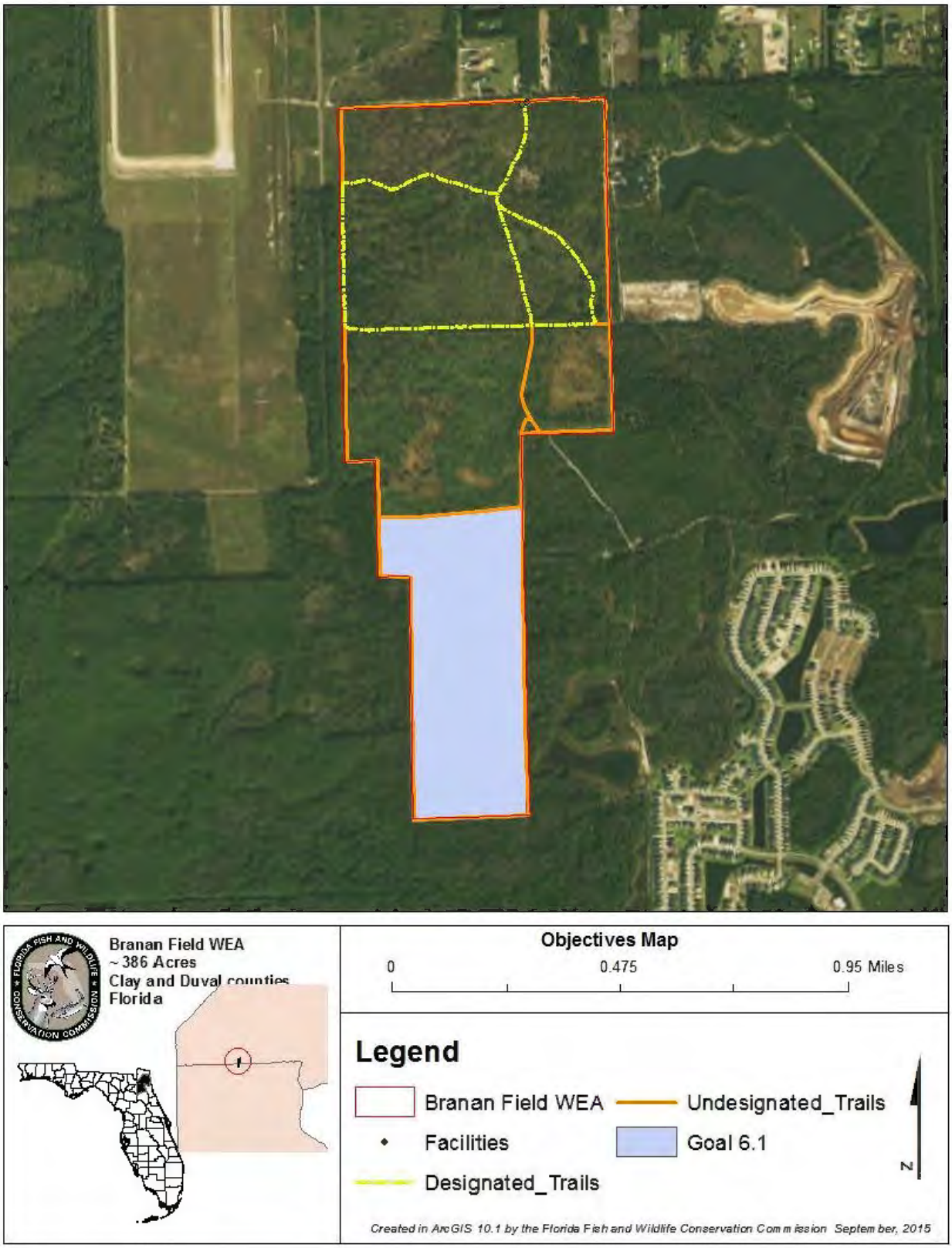

Figure 11. Objectives Map for the BFWEA

5.6 Public Access and Recreational Opportunities

5.6.1 Americans with Disabilities Act

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

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

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

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

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

5.6.2 Recreation Master Plan

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife resource based public outdoor recreational opportunities for BFWEA. To accomplish this, FWC will work with recreational stakeholders and the general public to develop a Recreation Master Plan for BFWEA 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.

5.6.3 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 through this process are used as a tool to help plan and develop public access, wildlife viewing, and fish and wildlife resource based public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities, and the anticipated proportional visitation levels of the various user groups, FWC has determined that BFWEA

can currently support 60 visitors per day. In Section 6.5 of this plan, an objective to maintain the public access carrying capacity at 60 visitors per day has been proposed. It is important to note that public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area in order to protect the natural and historical resources on BFWEA and to ensure that visitors will have a high-quality visitor experience. The public access carrying capacity will be periodically reevaluated, and additional capacity may be contemplated as part of the Recreation Master Plan development and implementation process.

5.6.4 Wildlife Viewing

The BFWEA is home to a variety of resident wildlife found within its sandhills, pine flatwoods, and other natural communities. The BFWEA's variety of habitat types create outstanding wildlife viewing opportunities.

5.6.5 Hunting

Due to the size and configuration of the area, hunting is prohibited on BFWEA. FWC managed hunting opportunities are offered at the nearby Jennings State Forest (JSF).

5.6.6 Fishing

Due to the size and configuration of the area and characteristics of its limited water features, fishing is prohibited on BFWEA. However, there are many nearby public fishing areas.

5.6.7 Trails/Hiking

Currently, the BFWEA offers nearly three miles of designated trails and slightly over four miles of undesignated trails/service roads.

5.6.8 Bicycling

Bicycling is prohibited on the BFWEA. However, there are ample opportunities for the public to go bicycling on nearby JSF and other nearby multi-purpose trails.

5.6.9 Equestrian

Horseback riding is prohibited on the BFWEA. However, there are ample opportunities for the public to go horseback riding on nearby JSF and other nearby equestrian trails.

5.6.10 Camping

Due to the size and configuration of the area camping is not permitted on any portion of the BFWEA. Primitive camping opportunities are offered on the nearby JSF.

5.6.11 Geocaching

Geocaching, also known as Global Positioning System (GPS) Stash Hunt and GeoStash, is a contemporary combination of orienteering and scavenger hunting generally utilizing a GPS receiver unit. Geocache websites routinely promote good stewardship. However, the

potential exists for resource damage, user conflicts, or safety issues caused by inappropriately placed caches and/or links that do not provide adequate information about the area.

It is the policy of the FWC to allow placement of geocaches only in those locations that do not present the potential for resource damage, user conflicts, or threats to the safety of the activity participants. The placement of geocaches on 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 .

5.6.12 Environmental Education/Interpretation

To facilitate wildlife viewing recreational opportunities on the area, FWC has continued to maintain three miles of trails, a kiosk, and website and trail brochure. Further planned public access facility improvements are detailed in Section 6 below. Ongoing public access and recreational opportunity management challenges are addressed in Section 8 below. In addition, the FWC will continue to implement public access, recreational, and educational opportunities on the area in accordance with the BFWEA Recreational Master Plan upon its development and approval.

5.7 Hydrological Preservation and Restoration

5.7.1 Hydrological Assessment

The FWC will conduct or obtain an onsite hydrological assessment to identify potential hydrology restoration needs on the BFWEA.

5.7.2 Water Resource Monitoring

Currently, the FWC cooperates with the DEP and the SJRWMD for the monitoring of surface and ground water quality and quantity, and will continue to cooperate with those agencies to develop and implement any additional surface water quality and quantity monitoring protocols for the BFWEA. In this capacity, the FWC will primarily rely on the expertise of the SJRWMD and the DEP to facilitate these monitoring activities. As necessary, the FWC may independently conduct or contract for water resource monitoring, as guided by the DEP and the SJRWMD.

5.8 Forest Resource Management

A Timber Assessment of the timber resources of BFWEA will be conducted by the Florida Forest Service, or a contracted professional forester. The management of timber resources will be considered in the context of the Timber Assessment and the overall land management goals and activities. Additionally, the FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

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. Reforestation techniques often vary depending on the natural community characteristics and species composition of the area. One of the primary management techniques for reforestation involves regeneration harvests of off-site pine species once they reach merchantable pulpwood size and then replanting with a naturally occurring pine species for the area. Another often used technique is to conduct a series of thinning operations gradually to reduce the pine basal area to 30-40 sq. ft./acre and then under-plant sites with an appropriate pine species to increase the uneven-aged character of the stands, over-story structure, and species diversity. However, the current density of pine forests on the BFWEA at the present time likely indicate that such timber thinning activities will not be necessary in the near future.

Forested wetlands are managed for stands with old growth characteristics. Snags will be protected to benefit cavity-nesting species.

5.8.1 Timber Management Plan

As noted above, a Comprehensive Forest Management Plan has not been completed for the BFWEA. Once completed, this plan will be used to evaluate the area's timber resources and to explore the feasibility of utilizing silvicultural techniques as a management activity on the area. The FWC will continue to cooperate with the FFS or professional forester, if needed, on the Timber Assessment. Also, the FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. In addition, as described above, FWC will implement the BFWEA Forest Management Plan, (when completed), to aid in the ongoing implementation of habitat restoration management activities which will seek to restore altered areas to their historic natural community types. This Forest Management Plan will include reforestation and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of the BFWEA.

5.9 Historical Resources

Procedures outlined by DHR will be followed to preserve the historical sites of BFWEA. The FWC will consult with DHR in an attempt to locate any additional historical features

on the area. In addition, FWC will ensure management staff has DHR Archaeological Resources Monitoring training (ARM). The FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for management of these resources, and prior to any facility development or other ground disturbing activities. Furthermore, as appropriate and necessary, FWC will contact professionals from DHR for assistance prior to any ground-disturbing activity on BFWEA.

To date, a formal archaeological and historical resource survey has yet to be completed on BFWEA. FWC staff will coordinate with the DHR to determine if a formal resource is needed. If needed, the FWC will submit subsequently located historic sites on BFWEA to DHR for inclusion in their Master Site File.

5.10 Capital Facilities and Infrastructure

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

The FWC will continue to maintain an entrance sign and kiosk, as well as nearly four miles of undesignated trails/service roads. Section 6.8 of this plan includes an objective to develop one new public access entrance package with handicapped parking, a covered picnic table and a new informational entrance kiosk.

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

5.11 Land Conservation and Stewardship Partnerships

The FWC utilizes a three-tiered approach to identifying, acquiring or otherwise protecting important conservation lands adjacent to or in proximity to existing FWC-managed areas. This involves development of an Optimal Resource Boundary (ORB), Optimal Conservation Planning Boundary (OCPB) and associated Conservation Action Strategy (CAS). Increasingly, cooperative land steward partnership efforts with private landowners plays an integral role in this effort as does ongoing land conservation, either through fee-simple or less-than-fee conservation easements. In combination, this tiered model helps FWC to further the regional conservation of important fish and wildlife habitats through a proactive, comprehensive, and cooperative approach towards conservation.

5.11.1 Optimal Resource Boundary

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

5.11.2 Optimal Conservation Planning Boundary

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

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

5.11.3 Conservation Action Strategy

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

Primary components of the CAS may include:

- FWC Landowner Assistance Program
- FWC conservation planning
- FWC Additions and Inholdings Program Land Conservation Work Plan
- Forest Stewardship Program proposals
- Florida Forever project proposals and boundary modifications

- Conservation easements
- Federal or State grant conservation proposals
- Regional or local conservation proposals
- Local, state, and federal planning proposals
- Non-governmental organization conservation proposals

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

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

5.11.4 FWC Florida Forever Additions and Inholdings Acquisition List

Currently, there are 22 parcels included on the FWC Florida Forever Additions and Inholdings list for the BFWEA, and 83,729 acres remaining for the Northeast Florida Timberlands and Watershed Reserve Florida Forever Project. Upon completion of the CAS, modifications to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended for the area.

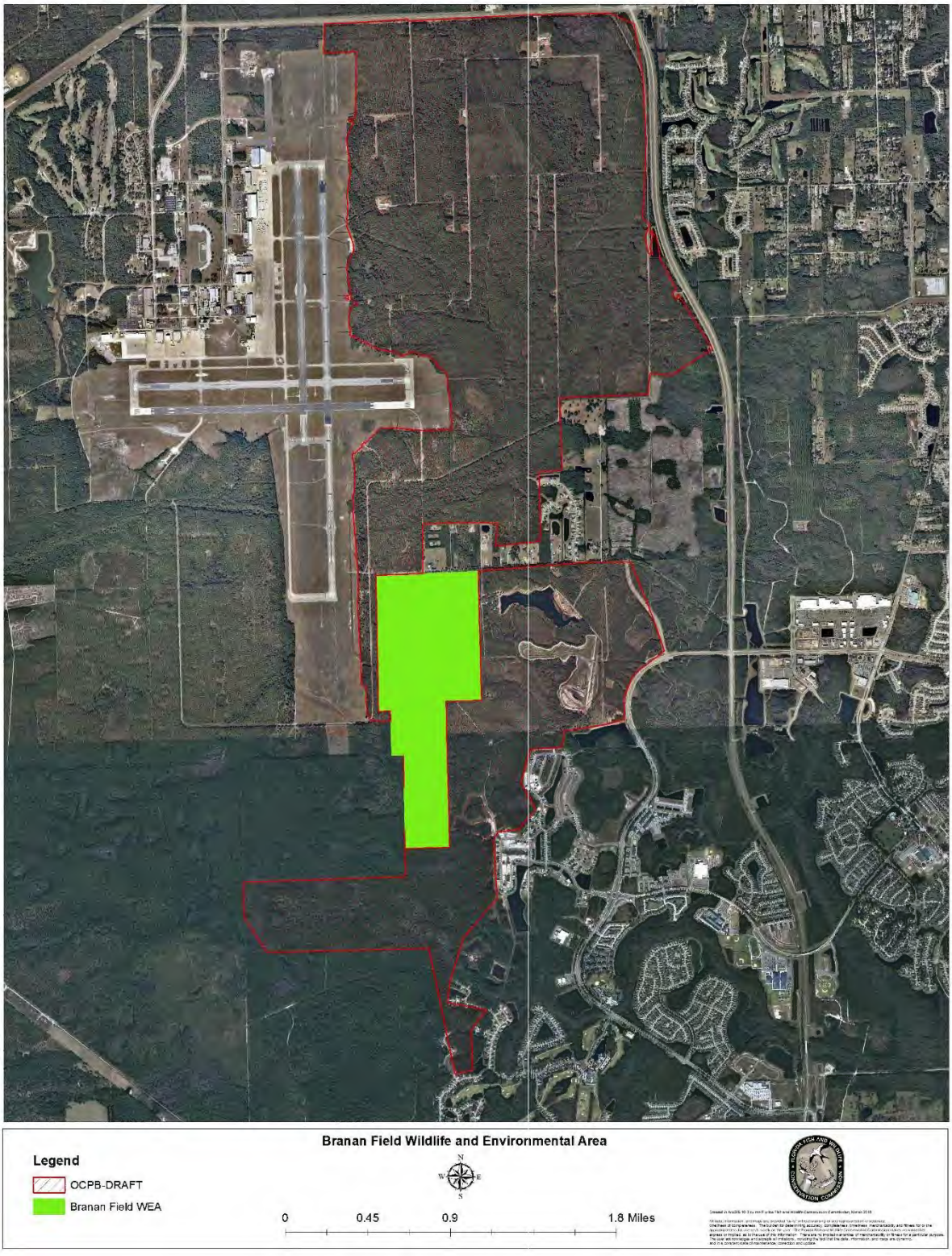

Figure 12. OCPB for BFWEA

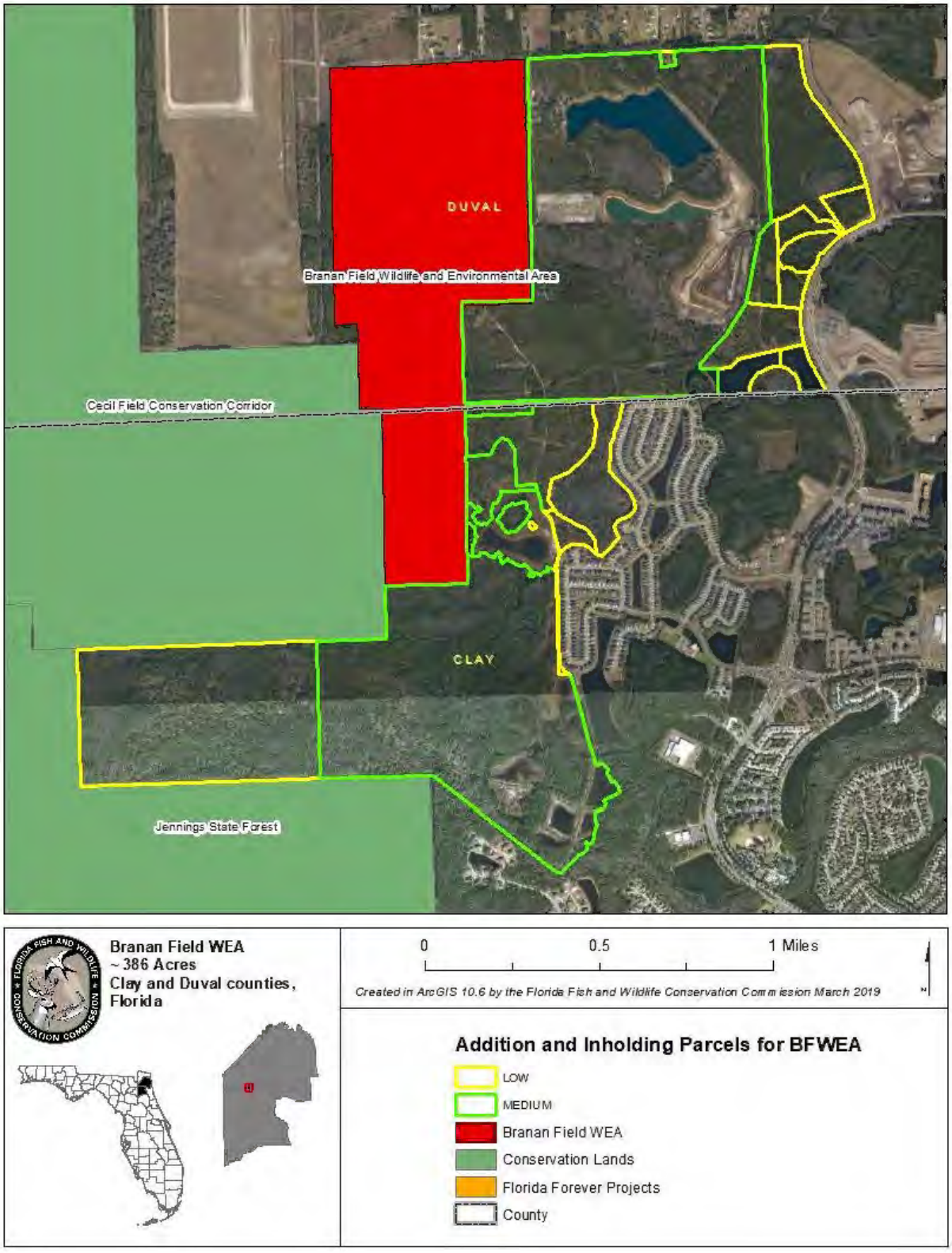

Figure 13. FWC Addition and Inholding Parcels for the BFWEA

5.12 Research Opportunities

The FWC intends to cooperate with researchers, universities, and others as feasible and appropriate. For BFWEA, 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 BFWEA must have prior approval by FWC.

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of BFWEA as set forth in the MOU agreements with the Northeast Florida Regional Planning Council, the TPL, Florida Defenders of the Environment, and the FWC. In keeping with the MOU agreements, and in order to conduct its management operations in the most effective and efficient manner, the FWC cooperates with other agencies to achieve management goals and objectives described in this management plan. These include cooperating with DHR to ensure the requirements of the Management Procedures Guidelines - Management of Archaeological and Historical Resources document (Appendix 12.8) 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. Also, FWC cooperates and consults with the SJRWMD and DEP for the monitoring and management of both ground and surface water resources and the overall management of BFWEA.

5.13.2 First Responder and Military Training

First-responder (public governmental police department or agency, fire and emergency medical service personnel) training and military training are conditionally allowed on BFWEA. Such activities are considered allowable uses only when undertaken intermittently for short periods of time, and in a manner that does not impede the management and public use of BFWEA, and causes no measurable long-term impact to the natural resources of the area. Additionally, FWC staff must be notified and approve the training through issuance of a permit prior to any such training taking place on BFWEA. Any first-responder or military training that is not low-impact, intermittent and occasional would require an amendment to this management plan, and therefore will be submitted by FWC to DSL and ARC for approval consideration prior to authorization.

5.13.3 Apiaries

Currently, there are no apiaries operating on BFWEA. However, use of apiaries is conditionally approved for BFWEA, and is deemed to be consistent with purposes for acquisition, is in compliance with the Conceptual State Lands Management Plan, and is consistent with the FWC agency mission, goals, and objectives as expressed in the Agency Strategic Plan and priorities document (Appendix 12.6). Location, management, and

administration of apiaries on BFWEA will be guided by the FWC Apiary Policy (Appendix 12.7). The FWC Apiary Policy will be followed with regards to site location, management, and administration of apiaries.

5.14 Climate Change

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

The Intergovernmental Panel on Climate Change (IPCC), a multi-national scientific body, reports that climate change is likely proceeding at a rate where there will be unavoidable impacts to humans, wildlife, and habitat. Given current levels of heat-trapping greenhouse gas emissions, shifts in local, regional, and national climate patterns including changes in precipitation, temperature, increased frequency and intensity of extreme weather events, rising sea levels, tidal fluctuations, and ocean acidification are projected . The current trend of global temperature increase has appeared to accelerate in recent decades, and continued greenhouse gas emissions may result in projected global average increases of 2 – 11.5° F by the end of the century.[5]

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, and protection from flooding, as well as and other recreational opportunities. Consequently, climate change is a challenge not only because of its likely direct effects, but also because of its potential to amplify the stress on ecosystems, habitats, and species from existing threats such as exponential increases in surface and ground water use, habitat loss due to increased urbanization, introduction of invasive species, and fire suppression.

Potential impacts that may be occurring as a result of climate change include: change in the timing of biological processes, such as flowering, breeding, hibernation, and migration; [6, 7, 8] more frequent invasions and outbreaks of exotic invasive species;[9] and loss of habitat in coastal areas due to sea level rise.[10] 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.[11] 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 Management Plan.

For these reasons, there is a continuing need for increased information and research to enable adaptive management to cope with potential long-term climate change impacts. The most immediate actions that FWC can take are to work with partners to gather the best scientific data possible for understanding natural processes in their current state, model possible impacts and subsequent changes from climate change, develop adaptive management strategies to enhance the resiliency of natural communities to adapt to climate change, and formulate criteria and monitoring for potential impacts when direct intervention may be necessary to protect a species. To this end, when appropriate, FWC will participate in organizations such as 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. In addition, FWC will consider the need for conducting vulnerability assessments to model the potential effects of climate change, especially sea level rise and storm events, on imperiled species and their habitats on FWC managed land.

Elements of climate change that may potentially affect BFWEA include more frequent and more potent storm events, alteration of vegetation reproductive cycles, and changes in the fire regime. The potential loss of habitat may result in the loss of species using that habitat, including migrating and nesting birds. Climate change may amplify and hasten these effects, potentially at rates that exceed the normal resiliency of plant communities to recover, shift or adapt accordingly.[16, 17] Projected salt water intrusion into the subsurface freshwater lens from potential sea level rise and saltwater inundation of surface freshwaters from storm surges may alter freshwater marshes, possibly resulting in more salt-tolerant aquatic plant communities.

To address the potential impacts of climate change on the BFWEA, Goals and Objectives have been developed as a component of this Management Plan (Section 6.11). Depending on the recommendations of the adaptive management strategies described above, additional specific goals and objectives to mitigate potential climate change impacts may be developed for the BFWEA Management Plan in the future.

5.15 Soil and Water Conservation

Soil disturbing activities will be confined to areas that have the least likelihood of experiencing erosion challenges. On areas that have been disturbed prior to acquisition, an assessment will be made to determine if soil erosion is occurring, and if so, appropriate measures will be implemented to stop or control the effects of this erosion.

6 Resource Management Goals and Objectives

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

6.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term

6.1.1 Conduct prescribed burning on 88 acres of fire adapted communities (sandhill and mesic flatwoods) per year.

6.1.2 Maintain 264 acres of fire adapted communities (78%) within 1 - 3 year target fire return interval.

6.1.3 Develop and implement a prescribed burn plan.

6.1.4 Continue to implement the OBVM program.

Long-term

6.1.5 Continue to conduct prescribed burning on 88 acres of fire adapted communities (sandhill and mesic flatwoods) per year.

6.1.6 Continue to maintain 264 acres of fire adapted communities (78%) per year within the target fire return intervals.

6.1.7 Continue to implement prescribed burn plan.

6.1.8 Contract with the FNAI for recertification of historic and current natural community maps every 5 years.

6.1.9 Continue to implement the OBVM program.

6.1.10 If determined to be necessary, conduct timber harvest for the purpose of habitat improvement.

6.1.11 Consider and implement alternate habitat improvement treatments (mechanical, chemical, timber harvest, and others as needed) on MU 5, as feasible.

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

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

Short-term

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

6.2.2 As described in the WCPR strategy, implement monitoring protocols for two imperiled and focal species (gopher tortoise and Florida mouse).

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

Long-term

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

6.2.5 As described in the WCPR strategy, implement monitoring protocols for two imperiled and focal species (gopher tortoise and Florida mouse).

6.2.6 Update the WCPR Strategy for the area.

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

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

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

Short-term

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

Long-term

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

6.4 Exotic and Invasive Species Maintenance and Control

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

Short-term

6.4.1 Annually treat all FLEPPC Category I and Category II invasive exotic plant species including Japanese climbing fern, mimosa and Chinese tallow, as they appear.

6.4.2 Continue to monitor for occurrences of exotic animal and plant species and implement control measures, as necessary.

Long-term

6.4.3 Continue to annually treat all FLEPPC Category I and Category II invasive exotic plant species including Japanese climbing fern, mimosa and Chinese tallow, as they appear.

6.4.4 Continue to monitor for occurrences of exotic animal and plant species and implement control measures, as necessary.

6.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Short-term

6.5.1 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 60 visitors per day.

6.5.2 Continue to provide kiosk, website and trail brochure for interpretation and education.

6.5.3 Maintain 3 miles of trails.

6.5.4 Develop a Recreational Master Plan.

6.5.5 Monitor trails annually.

6.5.6 Establish a visitor counting program for BFWEA

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

6.5.8 Continue to identify partnerships that could provide for environmental educational programs and outreach

Long-term

6.5.9 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 60 visitors per day.

6.5.10 Continue to provide kiosk, website and trail brochure for interpretation and education.

6.5.11 Maintain 3 miles of trails.

6.5.12 Develop two new interpretive/education programs (bird and butterfly lists).

6.5.13 Monitor trails annually.

6.5.14 Implement the Recreational Master Plan.

6.5.15 Reassess recreational opportunities every three years.

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

6.5.17 Continue to identify partnerships that could provide for environmental educational programs and outreach

6.6 Hydrological Preservation and Restoration

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

Short-term

6.6.1 Continue to cooperate with the SJRWMD and the DEP for the monitoring of surface and ground water quality and quantity

Long-term

6.6.2 Obtain a site hydrological assessment to identify potential hydrology restoration needs.

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

6.6.4 Following results of the hydrological assessment, implement hydrological restoration as feasible

6.7 Forest Resource Management

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

Short-term

6.7.1 Cooperate with the FFS to complete a Timber Assessment.

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

Long-term

6.7.3 Prepare and implement a Forest Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of BFWEA.

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

6.8 Historical Resources

Goal: Protect, preserve and maintain historical resources.

Short-term

6.8.1 In cooperation with DHR, determine if a historical resource survey is needed.

6.8.2 Continue to cooperate with the DHR to manage and maintain any identified historical resources.

6.8.3 Coordinate with DHR to assess the need for conducting an archaeological resource survey.

6.8.4 Ensure management staff has DHR Archaeological Resources Monitoring training.

6.8.5 Follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.

Long-term

6.8.6 If resources are found, after a formal survey, staff will ensure all known sites are recorded in the Florida Division of Historical Resources Master Site file as necessary.

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

6.9 Capital Facilities and Infrastructure

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

Short-term

6.9.1 Maintain 4.37 miles of undesignated trails/service roads.

6.9.2 Monitor trails and infrastructure for visitor impacts biannually.

6.9.3 Improve one facility, an entrance package (ADA parking, covered picnic table, and kiosk) along Branan Field Road, as feasible.

Long-term

6.9.4 Continue to maintain 1 facility.

6.9.5 Maintain 4.37 miles of undesignated roads.

6.9.6 Continue to maintain 3 miles of trails and monitor trails and infrastructure for visitor impacts biannually.

6.10 Land Conservation and Stewardship Partnerships

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

Short-term

6.10.1 Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational/resource management needs.

6.10.2 Identify and develop conservation stewardship partnerships.

6.10.3 Identify and pursue conservation acquisition needs.

6.10.4 Develop and maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for FWC's LAP and Land Acquisition Programs.

6.10.5 Develop a Conservation Action Strategy.

6.10.6 Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship, partnerships, and potential conservation easements.

6.10.7 Determine which parcels should be added to the FWC acquisition list.

6.10.8 Identify potential non-governmental organization partnerships and grant program opportunities.

6.10.9 Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.

6.10.10 Identify potential conservation easements donations.

6.10.11 Evaluate and determine if any portions of BFWEA are no longer needed for conservation purposes, and therefore may be designated as surplus lands.

6.10.12 Coordinate and cooperate with DOD military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of BFWEA.

Long-term

6.10.13 To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed OCPB for BFWEA as appropriate and necessary.

6.10.14 Continue to identify and develop conservation stewardship partnerships.

6.10.15 Continue to identify and pursue conservation acquisition needs.

6.10.16 Continue to maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for the FWC LAP and Land Acquisition Program.

6.10.17 Continue to propose nominations of selected properties as additions to the FWC acquisition list.

6.10.18 Continue to pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.

6.10.19 As feasible, continue to periodically contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy, and coordinate landowner assistance/conservation stewardship partnership workshops as deemed appropriate.

6.10.20 Coordinate and conduct landowner assistance/conservation stewardship partnership workshop(s) as necessary and appropriate.

6.10.21 Continue to identify potential conservation easements donations.

6.10.22 Continue to evaluate and determine if any portions of BFWEA are no longer needed for conservation purposes, and therefore may be designated as surplus lands.

6.10.23 Continue to coordinate and cooperate with DOD military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of BFWEA.

6.11 Research Opportunities

Goal: Explore and pursue cooperative research opportunities.

Long-term

6.11.1 Explore and pursue cooperative research opportunities through universities, University of Florida, Fish and Wildlife Research Institute, etc.

6.11.2 Continue to cooperate with researchers, universities, and others as appropriate.

6.11.3 Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.

6.12 Cooperative Management and Special Uses

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

Long-term

6.12.1 Continue to cooperate with Clay and Duval counties on comprehensive adjacent land use planning issues or concerns.

6.12.2 Continue to cooperate with Jacksonville Airport Authority for land management activities at BFWEA, such as implementing prescribed burning.

6.12.3 Continue to cooperate with adjacent land owners on land management activities.

6.13 Climate Change

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

Long-term

6.13.1 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 BFWEA.

6.13.2 As appropriate, update the BFWEA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of BFWEA's fire-adapted habitats.

6.13.3 As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change; assess the need to incorporate public education about climate change into the update of the BFWEA Recreation Master Plan.

7 Resource Management Challenges and Strategies

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

7.1 **Challenge**: Currently, the BFWEA is understaffed for both land management and law enforcement, with one full-time equivalent (FTE) staff responsible for management of five widely distributed areas spread across five counties, including the BFWEA located 85 miles from the FTE's headquarters.

7.1.1 Strategy: Continue to seek approval for additional funding for appropriate staffing levels.

7.1.2 Strategy: Seek approval for one FTE staff position dedicated for the BFWEA.

7.2 **Challenge**: Staff are encountering limitations when trying to implement prescribed burning plans (e.g., weather, smoke management, burn notifications) due to the properties' location between the Cecil Commerce Center Airport, Oak Leaf Plantation Development, and future toll road Florida State Road 23.

7.2.1 Strategy: Improve interagency cooperation with FFS, Florida Department of Transportation, Florida Highway Patrol, and local county governments.

7.2.2 Strategy: Consider alternate habitat management techniques for maintaining desired future conditions for the natural communities.

7.3 **Challenge:** FWC currently does not have the funding and capability to monitor, interpret, and analyze groundwater resources.

7.3.1 Strategy: Work with the SJRWMD to conduct a hydrological assessment for the BFWEA.

7.3.2 Strategy: Coordinate with the SJRWMD to obtain expertise and resources for placement of monitoring devices, collection, and analysis of data.

7.3.3 Strategy: Contract for water quality assessments as feasible.

7.4 **Challenge**: Insufficient area exists within the BFWEA for long-term conservation of far-ranging species that have been documented or are expected to occur on the BFWEA, such as eastern indigo snake and Sherman's fox squirrel. In addition, increased development and urbanization surrounding BFWEA isolates the property from other suitable wildlife habitat and poses a risk to the property becoming an isolated island of habitat.

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

7.5 **Challenge**: Currently the FDOT Type A field fencing around much of the boundary of the BFWEA is having adverse impacts on wildlife in the area.

7.5.1 Strategy: Consider and pursue alternatives to alleviate the adverse impacts from this type of fencing on wildlife in the area, including potentially replacing the existing fencing or installing gaps in the current fencing.

7.6 **Challenge**: Staff are encountering limitations (e.g., wet conditions, hazardous fuel loading, limited equipment access) when trying to implement land management activities to management unit BFWEA MU 5.

7.6.1 Strategy: Explore alternatives with various state and private entities to develop habitat restoration/improvement strategies.

7.7 **Challenge:** The BFWEA is not a well-known recreation destination.

7.7.1 Strategy: Cross-promote the BFWEA with other regional public conservation lands.

7.7.2 Strategy: Work with county tourism boards to promote the BFWEA as a recreation destination.

7.7.3 Strategy: Cooperate with NGO user groups such as Audubon and North American Butterfly Association.

7.8 **Challenge**: Currently the geocaches located on BFWEA are not in compliance with the FWC's Geocaching Guidelines.

7.8.1 Strategy: Continue to cooperate with geocaching user groups to ensure geocaching activities are in compliance with FWC guidelines and regulations.

7.9 **Challenge**: The BFWEA is located adjacent to a residential community and a nearby urban interface, which provides the potential for high impact or excessive impacts from neighboring residents utilizing the area for recreational activities.

7.9.1 Strategy: Communicate and coordinate with local residents to encourage low impact use that is consistent with the area's purpose and regulations.

7.10 **Challenge**: Illegal access and use has occurred on the area.

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

7.10.2 Strategy: Request additional funding for increased law enforcement staff.

7.10.3 Strategy: Increase communication with Law Enforcement to have an enhanced knowledge of the area and law enforcement issues.

8 Cost Estimates and Funding Sources

The following represents the actual and unmet budgetary needs for managing the lands and resources of BFWEA. 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 estimated to be what is necessary for optimal management, and is consistent with the current and planned resource management and operation of BFWEA. 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 2015-2016 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 12.10.

Branan Field WEA Management Plan Cost Estimate

Maximum expected one year expenditure

Resource Management	**Expenditure**	**Priority**
Exotic Species Control	$732	(1)
Prescribed Burning	$8,546	(1)
Cultural Resource Management	$301	(1)
Timber Management	$902	(1)
Hydrological Management	$2,559	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$16,157	(1)
Subtotal	**$29,196**	
Administration		
General administration	**$1,032**	(1)
Support		
Land Management Planning	$7,332	(1)
Land Management Reviews	$3,438	(3)
Training/Staff Development	$902	(1)
Vehicle Purchase	$4,215	(2)
Vehicle Operation and Maintenance	$3,512	(1)
Other (Technical Reports, Data Management, etc.)	$3,659	(1)
Subtotal	**$23,058**	
Capital Improvements		
New Facility Construction	$29,606	(2)
Facility Maintenance	$5,004	(1)
Subtotal	**$34,609**	
Visitor Services/Recreation		
Info./Education/Operations	**$6,127**	(1)
Law Enforcement		
Resource protection	**$353**	(1)
Total	**$94,375**	*

Priority schedule:

Bold	**(1) Immediate (annual)**
Normal	(2) Intermediate (3-4 years)
Italic	*(3) Other (5+ years)*

* Based on the characteristics and requirements of this area, 1 FTE position would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

Branan Field WEA Management Plan Cost Estimate
Ten-year projection

Resource Management	**Expenditure**	**Priority**
Exotic Species Control	$6,430	(1)
Prescribed Burning	$75,090	(1)
Cultural Resource Management	$2,642	(1)
Timber Management	$7,925	(1)
Hydrological Management	$22,479	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$141,954	(1)
Subtotal	**$256,520**	
Administration		
General administration	**$9,072**	(1)
Support		
Land Management Planning	$64,423	(1)
Land Management Reviews	$9,840	(3)
Training/Staff Development	$7,925	(1)
Vehicle Purchase	$14,833	(2)
Vehicle Operation and Maintenance	$30,853	(1)
Other (Technical Reports, Data Management, etc.)	$32,149	(1)
Subtotal	**$160,024**	
Capital Improvements		
New Facility Construction	$85,516	(2)
Facility Maintenance	$43,962	(1)
Subtotal	**$129,478**	
Visitor Services/Recreation		
Info./Education/Operations	**$53,831**	(1)
Law Enforcement		
Resource protection	**$3,098**	(1)
Total	**$612,023**	*

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

* Based on the characteristics and requirements of this area, 1 FTE position would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

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

The following management and restoration activities have been considered for outsourcing to private entities. It has been determined that items selected as "approved" below are those that 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:

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

10 Compliance with Federal, State, and Local Governmental Requirements

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

Uses planned for the BFWEA 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 12.6). Such uses also comply with the authorities of the FWC as derived from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters, 253, 259, 327, 370, 379, 403, 870, 373, 375, 378, 487, and 597 FS.

The FWC has developed and utilizes an Arthropod Control Plan for the BFWEA in compliance with Chapter 388.4111 F.S. (Appendix 12.13 and 12.14). This plan was developed in cooperation with local Duval and Clay counties arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Duval and Clay counties, Florida, (Appendix 12.15).

11 Endnotes

[1] Aldridge, C. L., M. S. Boyce and R. K. Baydack. 2004. Adaptive management of prairie

grouse: how do we get there? Wildlife Society Bulletin 32:92-103.

[2] Wilhere, G. F. 2002. Adaptive management in Habitat Conservation Plans.

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12 Appendices

12.1 Memorandum of Understanding

MITIGATION PARK PROGRAM

MEMORANDUM OF UNDERSTANDING

This is a Memorandum of Understanding dated as of January 15, 1988 between THE TRUST FOR PUBLIC LAND (TPL), a California nonprofit corporation; the FLORIDA GAME AND FRESH WATER FISH COMMISSION (GFC), an agency of the State of Florida; and the FLORIDA DEFENDERS OF THE ENVIRONMENT (FDE), a not-for-profit Florida corporation; and is intended as a conceptual framework for the development and implementation of a mitigation land bank program for off-site mitigation required in Development of Regional Impact Development Orders within the Withlacoochee Regional Planning Council boundaries.

This Memorandum of Understanding is entered into with reference to the following facts:

A. That under Section 380.06 (12)(b), F.S., the GFC has certain responsibilities in determining the impact and mitigative measures recommended for Development Orders issued by local governments on Developments of Regional Impacts (DRIs).

B. That the GFC agrees that preference will be shown, wherever possible, for on-site mitigation of fish, wildlife and vegetative impacts; but it is recognized that there will be cases where this approach will not be desirable or possible and the parties to the Development Order will agree that off-site mitigation will better serve all interests involved.

C. That a mitigation park program is a viable form of off-site mitigation whereby the impacts to fish and wildlife habitats can be mitigated through the acquisition and protection of other similar habitats.

Based upon these facts, the parties agree as follows:

1. Wildlife Resource Mitigation Fund - TPL shall establish a Withlacoochee Wildlife Resource Mitigation Fund (the Fund) as a separate bank account segregated from all other funds and accounts.

2. Initial Deposit - The amount specified in the Development Order of a DRI shall be paid to TPL and deposited in the Fund.

3. Interest and Annual Report - Interest earned by the Fund shall accrue to the benefit of the Fund. Within 90 days of the close of its fiscal year on March 31, TPL shall provide a statement to the parties to this Memorandum of Understanding indicating the balance of the Fund and describing any transactions that have occurred since the establishment of the Fund or the prior such annual statement.

4. Allocations - Any deposit in the Fund shall be allocated as follows: Ten percent (10%) of the Fund shall be allocated for management purposes and ninety percent (90%) of the Fund shall be allocated for land acquisition purposes provided GFC may request that up to five percent (5%) of the Fund be disbursed by TPL to accommodate ancillary costs while complying with the Development Order or the terms of this Memorandum of Understanding and TPL shall make any such disbursement requested by GFC. Any such disbursement for ancillary costs shall be taken on a prorated basis from the management and land acquisition portions of the Fund.

5. Land Acquisition

a. Sites - GFC in consultation with other local regional and state agencies shall establish selection criteria, such as geographical location, vegetative characteristics, and proximity to State or Federal lands, and shall prepare a list of candidate sites in order of preference. GFC shall give the ranked list to TPL.

b. Acquisition and Reconveyance - TPL shall attempt diligently to acquire for reconveyance to GFC, one or more of the sites valued in an amount approximately equal to the amount of the Fund allocated for land acquisition.

c. Disbursements for Land Acquisition - TPL shall attempt to acquire such sites for below market prices, and shall, upon conveyance of any such site to GFC, disburse to itself from the portion of the Fund allocated for land acquisition an amount equal to the fair market value of the site conveyed. It is the intent of the parties that TPL shall be compensated for its activities pursuant to this Memorandum of Understanding by

retaining the difference between its actual acquisition costs and the money it is entitled to disburse to itself from the Fund for said land. TPL will initiate and complete all negotiations pertaining to site acquisition and assume any ancillary costs related to acquisition. All risk and monies expended prior to conveyance of a site to GFC shall be the responsibility of TPL.

d. Reconveyance - GFC shall accept any site acquired by TPL pursuant to this Memorandum of Understanding. The need for restrictive covenants and for reversions in the deeds from TPL to GFC shall be determined on a case-by-case basis but TPL will have no continuing enforcement obligations after conveyance of any site.

e. Valuation - The value of any site to be acquired pursuant to this Memorandum of Understanding shall be established in the following manner. TPL shall obtain from the Florida Department of Natural Resources a state approved list of appraisers. TPL shall hire an appraiser from the state approved list to determine the fair market value of the site. The market value, for purposes of this Memorandum, is defined as follows: the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing, but not obligated to sell to a knowledgeable purchaser who desires, but is not obligated to buy. GFC and RPC shall designate a review appraiser to review the initial appraiser's opinion of value. In the event the review appraiser approves the initial appraisal, the value established by the initial appraisal shall be deemed to be the value of the site for purposes of this Memorandum of Understanding.

In the event the review appraiser disagrees with the initial appraisal, the appraiser, the review appraiser, TPL and any other party to the agreement, which wishes to participate, shall meet to discuss the matter, and the appraiser and review appraiser shall be encouraged to agree upon a value for the site.

In any event, the review appraiser's opinion shall be determinative of the value of the site for purposes of this Memorandum of Understanding.

f. Title Commitments - TPL will provide GFC with a title commitment for any site to be acquired pursuant to this Memorandum of Understanding.

g. Closings - Closings shall occur as soon as possible following approval of title by GFC and a determination of value.

6. Management - GFC shall develop a management plan and a proposed budget to guide future land management activities for each site acquired. Upon the conveyance to GFC of any site, TPL shall disburse the portion of the Fund allocated for management to FDE whose only obligation shall be to deposit said funds in a federally insured interest bearing account. FDE shall disburse funds from said management account as directed in writing by the Executive Director of GFC.

7. Termination

a. Any party may terminate this Memorandum of Understanding upon 10 days written notice to the other parties, in which case TPL may retain from the Fund an amount equal to its uncompensated costs incurred pursuant to this Memorandum of Understanding, and shall pay the balance of the Fund as directed by GFC.

b. Any portion of this Fund not disbursed by TPL within two (2) years of the date of this Memorandum of Understanding shall be paid to such existing state land acquisition fund as may be designated by the Commission, and this Memorandum of Understanding shall terminate, provided that TPL may elect to retain the Fund and extend this Memorandum of Understanding for one additional year at which time this Memorandum of Understanding shall terminate unless extended by agreement of the parties.

8. Non-agency of TPL - The parties acknowledge that TPL is an independent nonprofit charitable corporation and is not a partner or agent of the State of Florida.

9. Non-liability of TPL - TPL shall have no liability to the parties to this Memorandum of Understanding with regard to its good faith management of the Fund or disbursements from the Fund nor for any other activities undertaken in good faith pursuant to this Memorandum of Understanding.

10. Non-agency of FDE - The parties acknowledge that FDE is an independent nonprofit charitable corporation and is not a partner or agent of the State of Florida.

11. Non-liability of FDE - FDE shall have no liability to the parties to this Memorandum of Understanding with regard to its good faith management of the Fund or disbursements from the Fund nor for any other activities undertaken in good faith pursuant to this Memorandum of Understanding.

12. Advisory Committee - A three-member committee consisting of one representative each from TPL, the FDE and GFC shall be created to attempt to resolve any conflicts that may arise during the acquisition phases of the Mitigation Land Bank Program.

13. Supremacy of Development Order - The terms and conditions of the Development Order, with regard to off-site mitigation of fish, wildlife and vegetative impacts, shall control the acquisition activities of the parties hereto. Nothing in this agreement shall be construed in a manner so as to usurp the terms and conditions of the Development Order or the duly constituted authority of the local government entity.

This Memorandum of Understanding is made and entered on the date executed by the last signatory hereto:

By: William V Branan
William V. Branan
Executive Director
Florida Defenders of
the Environment

Date: 3 Feb 88

By: W. Dale Allen
W. Dale Allen
Regional Manager
The Trust for Public Land

Date: February 3, 1988

By: Robert M. Brantly
Colonel Robert M. Brantly
Executive Director
Florida Game and Fresh Water
Fish Commission

Date: Jan 19th 1988

E507-6758

12.2 Definitions of Management Plan Terms

Management Plan Goals and Objectives

Terms and Definitions

Assessment: Assessment—when a historic resource professional determines the possible effects—positive or negative—that an action or inaction may have on a historical resource (e.g., site, building, object or structures) by analyzing its current condition and documenting any modifications and changes to its original state as well as identifying any potential human or natural threats to its existence.

Capital Improvement: Capital improvement" or "capital project expenditure" means those activities relating to the acquisition, restoration, public access, and recreational uses of such lands, water areas, and related resources deemed necessary to accomplish the purposes of this chapter. Eligible activities include, but are not limited to: the initial removal of invasive plants; the construction, improvement, enlargement or extension of facilities' signs, firelanes, access roads, and trails; or any other activities that serve to restore, conserve, protect, or provide public access, recreational opportunities, or necessary services for land or water areas. Such activities shall be identified prior to the acquisition of a parcel or the approval of a project. The continued expenditures necessary for a capital improvement approved under this subsection shall not be eligible for funding provided in this chapter.

Desired future condition: Desired Future Condition is a description of the land or resource conditions that are believed necessary if management goals and objectives are fully achieved. Desired Future Condition varies by specific habitat and ecosystem. It can also vary, based upon a specific agency's management goals.

Evaluation: Review by a professional in archaeology, history or architecture as to the integrity and significance of the site, building or structure. The criteria of the National Register of Historic Places will be applied.

Facility: all developed structures and improvements provided for a specific purpose or contained within a clearly defined area.

Fire management plan: An element of the land management plan or an independent document that outlines the goals and objectives of a fire management program (prescribed and wildfire) for a predetermined period of time.

Historic: An object, site or structure that is 50 years or older.

Hydrological assessment: A documented, systematic evaluation by a qualified professional of the existing and historical quantity, quality, movement and function of water resources (e.g., computer modeling).

Imperiled species: A species or subspecies that is listed by the U.S. Fish and Wildlife Service as Endangered or Threatened; Florida Fish and Wildlife Conservation Commission (FWC) as Endangered, Threatened, or Special Concern; Florida Department of Agriculture

and Consumer Services (FDACS) as Endangered or Threatened; or is tracked by Florida Natural Areas Inventory (FNAI) as globally or state Critically Imperiled or Imperiled. Imperiled Species does NOT refer to species that are on the FDACS list of commercially exploited plants that are not Endangered or Threatened.

Improve: the enhancement or expansion of facilities, roads and trails.

Maintenance: the daily or regular work of keeping facilities, roads and trails in proper condition.

Monitoring: Periodic examination of the site, building or structure to determine the current condition and threats such as erosion, structural deterioration, vegetation intrusion, poaching or vandalism. An updated Florida Master Site File form is used to complete this assessment.

Natural community/habitat/ecological improvement: Similar to restoration but on a smaller less intense scale. Typically includes small scale vegetation management activities, spot treatments of exotic plants, or minor habitat manipulations. Any habitat alteration that increases the diversity of a habitat or increases the population of a particular species.

Natural community/habitat/ecological restoration: The process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegitation structure, and physical characters. Activities may include vegetative treatments (e.g., hardwood removal, mechanical treatment, pine tree thinning, etc.), groundcover establishment, non-commercial tree plantings, erosion control, hydrological manipulation (filling ditches), and beach management.

Not in maintenance condition: Species composition and/or structure is outside the targeted range. The natural community is in need of more frequent or recurring management treatments that are beyond maintenance activities. Examples include natural communities with exotic plant or animal infestations that are at levels requiring significant treatment, natural communities that have exceeded maximum targeted fire return intervals, and natural communities in need of restoration treatments.

Poor, fair, good condition: Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists against the ideal. "Good" describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. "Fair" describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A "fair" assessment is cause for concern. "Poor" describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

Population survey: Using broadly accepted methodologies to detect changes in population trends over time.

Public access: access by the general public to state lands and water, including vessel access made possible by boat ramps, docks, and associated support facilities, where compatible with conservation and recreation objectives.

Recorded: A Florida Master Site File form has been completed and filed with the Florida Department of State, Division of Historical Resources.

Recreational/visitor opportunity: measure of potential number of users based on existing resource conditions and developed facilities.

Repair (major): the restoration of facilities, road and trails to proper condition after damage or failure.

Restoration underway: restoration planning/design, executing, evaluating and reporting.

Restored/Maintenance condition: (refers to natural community) - within the range of target species composition and structure such that no significant, non-recurring alterations to structure or species composition are needed for ecological restoration. Invasive exotic plants or animals are absent or at levels requiring minimal recurring treatments, and prescribed fire rotations are within target intervals. Refers to Natural Communities. Includes NCs that meet DFC, and NCs that have received restoration action (such as thinning, clearcut and native species planting) and only require time and recurring maintenance actions such as prescribed fire, maintenance level exotics control, or sustainable forestry practices if applicable.

Road: a paved or unpaved motor vehicle route unless identified and managed as a trail.

Significant: Listed in or determined eligible for listing in the National Register of Historic Places as an individual property, element of a multiple listing or in an historic district. Cultural resource professionals are able to make the determination, but final determination rests with the Director of the Division of Historical Resources.

Sustainable forestry: The stewardship and harvest of forest products in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national and global levels, and that does not cause damage to other ecosystems.

Systematic survey: A sampling protocol designed to assess the occurrence or population status of a species or a suite of species (e.g., presence/absence, mark and recapture, transect survey, etc.).

Trail: a linear route or path which has been specifically prepared or designed for one or more recreational functions such as hiking, biking, horseback riding or multiple use. In many cases, unimproved service roads are also designated as trails.

Treatment: A mechanical, chemical, biological or manual action that changes the structure or composition of an area in order to facilitate restoration or improvement.

Visitor carrying capacity: An estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site.

Wildlife activities: wildlife-associated recreation such as birdwatching, fishing, hunting, etc.

12.3 Public Input

12.3.1 Management Advisory Group Meeting Results

Branan Field Wildlife and Environmental Area (BFWEA)

Management Advisory Group (MAG)

Consensus Meeting Results

April 6, 2016 in Green Cove Springs, Florida

The intent of convening a consensus meeting is to involve a diverse group of stakeholders in assisting the Florida Fish and Wildlife Conservation Commission (FWC) in development of a rational management concept for lands within the agency's managed area system. FWC does this by asking spokespersons for these stakeholders to participate in a half-day meeting to provide ideas about how FWC-managed lands should be protected and managed.

The MAG consensus meeting was held on the morning of *April 6, 2016* at Camp Chowenwaw, in Green Cove Springs, Florida in Clay County. The ideas found below were provided by stakeholders for consideration in the 2016 – 2026 Management Plan (MP) with priority determined by vote. These ideas represent a valuable source of information to be used by biologists, planners, administrators, and others during the development of the MP. Upon approval by FWC, the Acquisition and Restoration Council (ARC), and the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the MP will guide the activities of FWC personnel over the ten-year duration of the management plan and will help meet agency, state, and federal planning requirements.

Numbers to the left of **bold-faced ideas** listed below represent the total number of votes and the score of each idea. Rank is first determined by the number of votes (vote cards received for each idea) and then by score. Score is used to break ties when two or more ideas have the same number of votes. A lower score indicates higher importance because each voter's most important idea (recorded on card #1) received a score of 1, and their fifth most important idea (recorded on card #5) received a score of 5. Ideas not receiving any votes are listed, and were considered during the development of the MP, but carry no judgment with regard to priority.

Statements following the bold-faced ideas represent a synopsis of the clarifying discussion of ideas as transcribed and interpreted by the FWC recorder at the meeting. As indicated above, the ideas below are presented in priority order:

Rank	# of Votes	Score	Idea
1.	[6]	[7]	1. **Manage natural plant and animal communities.** Attempt to manage with the original purpose of acquisition for gopher tortoise mitigation. Including implementing management techniques such as prescribed fire, monitoring of wildlife species, mechanical treatment, and hydrological management.
2.	[6]	[15]	3. **Maintain ability to conduct prescribed burning.** A challenge going forward, due to being in between an active runway and growing subdivision community, also a toll road and medical center being developed, the adjacent community makes severe comments to FFS when burning in certain areas. FFS has a system in place for notification and education regarding burns. Ensure FWC is aware and prepared for the challenges with prescribed burning on the area.
3.	[5]	[18]	5. **Control invasive exotic species and restore native species.**
4.	[3]	[12]	6. **Improve public access.** In order for an area to be successful the public needs to be aware of the area. Improve trail and interpretative signs, and outreach. Possibly allowing dogs or equestrian use on the area.
5.	[2]	[5]	11. **Ensure coordination of rule development with law enforcement.** In an area that is so close to urban areas, there is a wide range of people that access the area, and many people don't want to follow the rules. Make sure FWC gives LE the rules of the area, so LE can fully enforce those rules.
6.	[2]	[6]	4. **Increase patrol of illegal use.** FWC LE is complaint driven, and if no public awareness is on the area, then LE is not aware if there is illegal activity taking place. Increase public awareness, and provide hotline numbers to notify LE of illegal activity.

Rank	# of Votes	Score	Iden	
7.	[2]	[8]	7.	**Manage fire lines to maintain optimal butterfly habitat.** Management practices need to allow the plants to thrive, especially during spring season, so that butterflies have the nectar to thrive as well. Be aware of the plants that grow along the fire lines at certain times of the year so that population is maintained.
8.	[2]	[8]	17.	**Continue to limit recreational use with passive use.**
9.	[1]	[2]	9.	**Coordinate land use planning for surrounding development.** Coordinate land use, regarding urban sprawl and regional planning surrounding the area.
10.	[1]	[3]	2.	**Increase awareness of hunting on adjacent property.** Notify the public of hunting seasons, and that there is hunting activity on adjacent property. Possibly placing signs at the entrance, to increase safety of the public accessing the area.
11	[1]	[3]	13.	**Restore dark/night light environment.** The night sky is a natural resource and is important for nocturnal animals. It is becoming harder to find good night skies. Future success of having dark skies, is not just with the management unit, but also surrounding areas. Make the area part of the American Dark Sky Association, as a way to lower impact user groups out there and surrounding areas.
12.	[1]	[4]	12.	**Limit disturbance during active breeding bird season.** Regarding control burns or tilling, ensure those management practices don't disturbed breeding birds. Also, ensure dogs are not disturbing the habitat for birds.
13.	[1]	[5]	16.	**Reduce fuel loads on southern portion of the property, as feasible.** Possibly one time timber sale, reducing fuel loads also reduce risk of wildfire and improve wildlife habitat, and in turn restoring the natural vegetative community.

Rank	# of Votes	Score	Idea

Two items of equal rank:

The following item received no votes. All ideas represent valuable input, and are considered in development of the MP, but carry no rank with regard to the priority perceptions of the MAG.

14.	[]	[]	8.	**Improve the coordination with county parks department and the county tourism department.** Improve communication and notification, regarding the area, with county departments.
15.	[]	[]	14.	**Restore important, specific nectar plants for northeast Florida pollinators.** Restoring plant communities and paying attention to depreciation of fortified plants, especially in the fall for northeast Florida pollinators. One way to control that is with prescribed burns, and these plants are located in sand hill communities on the north area. Ensure exotics are not taking over those plant communities.
16.	[]	[]	18.	**Maintain trail brochure availability on the area.**

Branan Field Wildlife and Environmental Area
MAG Meeting Participants

Name	Affiliation
Active Participants	
Nathan Lambert	FWC Area Biologist
Lt. Philip Glover	FWC Law Enforcement
Carly Wainwright	Duval County Audubon
Carolyn Morgan	Clay County Planning Department
Bill Berthet	FNAI Volunteer
Scott Miller	Adjacent Land Owner
Sam Negaren	Florida Forest Service
Jen Benson-Hughes	Department of Environmental Protection
Supportive Participants	
Matt Pollock	FWC Habitat and Species Conservation (HSC), Regional Biologist
Scott Johns	FWC HSC, District Biologist
Ginger Morgan	FWC HSC, Landowner Assistance Program
Rich Noyes	FWC Office of Public Access and Wildlife Viewing Services (OPAWVS)
Tom M. Matthews	FWC OPAWVS
Terry McCaffrey	FWC OPAWVS
Scotland Talley	FWC Habitat and Species Conservation (HSC), Regional Conservation Biologist
Invited but Unable to Attend	
Rocky Thompson	St. John's River Water Management District
Diana Hutchings	Clay County Commissioner (District 1)
James Richardson	Duval County Commissioner (EPB Administrator)
Kristen Reed	Duval County Planning Department
Mike Wisenbaker	Division of Historical Resources
Al Oliver	Natural Resources Conservation Service
North Florida Trailblazers	Florida Trail Association
Dan Hipes	Florida Natural Areas Inventory
Linda Schneider	Florida Native Plant Society
Bob Richter	Hiking Recreation
Ricky Lackey	National Wild Turkey Federation
Brian Burket	Duval County Parks and Recreation
Matt Chopp	FWC- Division of Hunting and Game Management
David Telesco	FWC Florida Black Bear
Dan Sullivan	FWC HARP Program Coordinator
David Johnson	FWC WHM Assistant Section Leader

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Linda King	FWC – Invasive Plant Management
John Fury	Division of Freshwater Fisheries Management
Beth Stys	FWC FWRI Climate Change
Kristen Sommers	FWC – Exotic Species Selection
Steve Rockwood	FWC - Aquatic Habitat Conservation and Restoration

FWC Planning Personnel

Gary Cochran	Land Conservation and Planning Administrator, Facilitator
Tom Houston	Recorder
Dylan Imlah	Recorder

12.3.2 Public Hearing Notice

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC)
Announces a

PUBLIC HEARING

for the

Branan Field

Wildlife and Environmental Area

Management Plan

Clay and Duval County, Florida

7:00 P.M. Thursday, May 12th, 2016

Cecil Recreation Complex
13611 – A Normandy Blvd.
Jacksonville, FL 32221

PURPOSE: To receive public comment regarding considerations for the FWC ten-year Land Management Plan for the Branan Field Wildlife and Environmental Area (BFWEA). This hearing is being held EXCLUSIVELY for discussion of the DRAFT Branan Field WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to: http://myfwc.com/about/rules-regulations/

or call (850) 487-1764.

A Management Prospectus for the Branan Field WEA is available upon request. For a copy, please contact Rebecca Shelton, Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 617-9404.

12.3.3 Legal Advertisements and Press Release

PUBLISHER AFFIDAVIT
CLAY TODAY
Published Weekly
Orange Park, Florida

STATE OF FLORIDA
COUNTY OF CLAY:

Before the undersigned authority personally appeared Jon Cantrell, who on oath says that he is the publisher of the "Clay Today" a newspaper published weekly at Orange Park in Clay County, Florida: that the attached copy of advertisement being a

LEGAL NOTICE

in the matter of

PUBLIC HEARING

LEGAL: 37065 ORDER: 252408

was published in said newspaper in the issues:

05/05/2016

Affiant further says that said "Clay Today" is a newspaper published at Orange Park, in said Clay County, Florida, and that the said newspaper has heretofore been continuously published in said Clay County, Florida, weekly, and has been entered as Periodical material matter at the post office in Orange Park, in said Clay County, Florida, for period of one year next proceeding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

LEGAL NOTICE

The Florida Fish and Wildlife conservation Commission (FWC) announces a **PUBLIC HEARING** for the FWC Lead Managed Portions of Branan Field Wildlife and Environmental Area located in Clay County and Duval County, Florida

7:00P.M. THURSDAY, MAY 12TH, 2016 Cecil Recreation Complex 2nd Floor 13611 Normandy Blvd. Jacksonville, Fl 32221

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Branan Field Wildlife and Environmental Area (BFWEA).

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Branan Field WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to http://myfwc.com/about/rules-regulations/changes/. A Management Prospectus for Branan Field WEA and copy of the agenda is available upon request from the Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group, 620 South Meridian Street, Tallahassee, Florida 32399-1600, Telephone (850) 617-9408 or by e-mail at Rebecca.Shelfo@myFWC.com.

Legal 37065 published May 5, 2016 in Clay County's Clay Today newspaper.

CHRISTIE LOU WAYNE
MY COMMISSION # EE875062
EXPIRES: September 20, 2016

Sworn to me and subscribed before me 05/05/2016

NOTARY PUBLIC, STATE OF FLORIDA

3515 US HWY 17 Suite A, Fleming Island FL 32003
Telephone (904) 264-3200 - FAX (904) 264-3285
E-Mail: Christie@opcfla.com

Mon, Apr 25, 2016
09:14:57

Receipt No:

Classified Ad Receipt

The Florida Times-Union

One Riverside Ave
359-4321

Name: FL FISH AND WILDLIFE CONSE
Address: 620 S MERIDIAN ST

City: TALLAHASSEE State: FL Zip: 32399-6517

Ad Name: 16714949D
Ad Id: 16714949

Reply Request
Standby Type:

The Florida Fish and Wildlife Conservation Commission (FWC) announce a PUBLIC HEARING for the FWC Lead Managed Portions of Branan Field Wildlife and Environmental Area located in Clay County and Duval County, Florida.

7:00 P.M. Thursday, May 12th, 2016
Cecil Recreation Complex
2nd Floor
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Jacksonville, FL 32221

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Thank you for your business!

25·16

Help plan the future of Branan Field Wildlife and Environmental Area

The 10-year Draft Management Plan for the Branan Field Wildlife and Environmental Area (WEA) will be presented at a public hearing in Duval County on Thursday, May 12th, 2016.

People are invited to the 7 p.m. Public Hearing at the Cecil Recreation Complex, 13611 –A Normandy Blvd. Jacksonville, FL.

Florida Fish and Wildlife Conservation Commission (FWC) staff will present the draft land management plan for the FWC-managed Branan Field WEA, and the public is encouraged to comment and ask questions. For more information on the upcoming local public hearing, go to MyFWC.com/Conservation and select "Terrestrial Programs" then "Management Plans."

The Branan Field WEA is located in southern Duval and northern Clay counties. Recreational activities offered on the area include hiking, wildlife viewing, photography, and geo-caching (allowed only by permit).The gopher tortoise, Florida pine snake, Sherman's fox squirrel, and Bachman's sparrow are among the native species living here. Pine flatwoods (both mesic flatwoods and wet flatwoods) and sandhill are the predominant plant communities on the area. Carnivorous pitcher plants, sundews, showy wildflowers and lupine occur throughout the area.

"Branan Field WEA was purchased to promote habitat conditions critical to meeting the life history requirements of the gopher tortoise and associated upland wildlife species, and to ensure the preservation of fish and wildlife resources, other natural and historical resources, and to provide fish- and wildlife-based public outdoor

recreation," said Rebecca Shelton, FWC Land Conservation Planner. "This draft plan will specify how we intend to do that."

All lands purchased with public funds must have a management plan that ensures the property will be managed in a manner that is consistent with the intended purposes of the purchase.

Hunting and fishing regulations are not included in this plan or meeting; those are addressed through a separate public process.

To obtain a copy of the land management prospectus for Branan Field WEA, call Sarah Pierce at 850-487-7063 or email Sarah.Pierce@MyFWC.com.

For more information and background on management plans and their goals, visit MyFWC.com/Conservation and select "Terrestrial Conservation Programs" then "Management Plans."

To learn more on the Branan Field WEA, go to MyFWC.com and select "Wildlife Viewing" then "Wildlife Management Areas."

ID 17185507

Notice of Meeting/Workshop Hearing

FISH AND WILDLIFE CONSERVATION COMMISSION

Freshwater Fish and Wildlife

The Fish and Wildlife Conservation Commission announces a public meeting to which all persons are invited

DATE AND TIME: Thursday, May 12, 2016, 7:00 p.m.

PLACE: Cecil Recreation Complex, 2nd Floor, 13611-A Normandy Blvd., Jacksonville, FL 32221

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Florida Fish and Wildlife Conservation Commission (FWC) announces a public hearing for the FWC Lead Managed Portions of Branan Field Wildlife and Environmental Area located in Clay County and Duval County, Florida

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Branan Field Wildlife and Environmental Area (BFWEA)

This hearing is being held exclusively for discussion of the DRAFT Branan Field WEA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to: http://myfwc.com/about/rules-regulations/changes/

A Management Prospectus for Branan Field WEA and copy of the agenda are available upon request from the Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group, 620 South Meridian Street, Tallahassee, Florida 32399-1600, (850)617-9404 or by emailing Rebecca.Shelton@myfwc.com

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 14 days before the workshop/meeting by contacting: Sarah Pierce, Sarah.Pierce@MyFWC.com, (850)487-7063. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

For more information, you may contact: Sarah Pierce, Sarah.Pierce@MyFWC.com, (850)487-7063.

5/10/16

Sarah Pierce

12.3.4 Management Prospectus

Management Prospectus
BRANAN FIELD WILDLIFE AND ENVIRONMENTAL AREA
April 2016
Florida Fish and Wildlife Conservation Commission

Introduction

Nestled in close proximity to a major metropolitan area, visitors to the Branan Field Wildlife and Environmental Area (BFWEA) have opportunities to get respite from the nearby urban bustle and see gopher tortoises, carnivorous plants and colorful wildflowers along trails winding through a verdant pine forest. Straddling the border of southern Duval and northern Clay counties, alongside the Cecil Commerce Center, BFWEA conserves important wildlife habitat for an array of imperiled, rare, and other more common wildlife species, including the gopher tortoise, Florida pine snake, Sherman's fox squirrel, and Bachman's sparrow.

Along with the adjacent Cecil Field Conservation Corridor and other nearby conservation lands such as the Jennings State Forest, Camp Chowenwaw Park, Sal Taylor Creek Preserve, Cary State Forest, the Loblolly Mitigation Preserve, among others, BFWEA sustains natural elements of the once vast pine forest ecosystem that existed in this region of northeast Florida. BFWEA is composed of almost botanically intact natural communities such as mesic pine flatwoods interspersed with basin swamp, depression marsh, dome swamp and xeric hammock. In addition to conserving important wildlife habitat, the area also provides wildlife corridor and watershed protection for the surface waters of Yellow Creek and Black Creek flowing through the area on their way to the St. Johns River.

Established and managed by the Florida Fish and Wildlife Conservation Commission (FWC) since 1993, BFWEA covers 386 acres in southern Duval and northern Clay counties, Florida. The area was acquired by FWC, as a Gopher Tortoise Mitigation Park, to protect vital habitat for the gopher tortoise as described in more detail below. Together with other nearby public conservation lands that include the Jennings State Forest and the Cecil Field Conservation Corridor, this is an important area for the protection of pine flatwoods communities and their associated flora and fauna.

BFWEA is located about 15 miles southwest of downtown Jacksonville Florida, 9.5 miles west of Oronge Park and 17 miles north of Green Cove Springs (Figure 1). The BFWEA is located in Sections 35 and 36, Township 3 South, Range 24 East, as well as Sections 1, and 2, Township 4 South, Range 24 East (Figure 2).

This resource and management prospectus has been developed in conformance with the requirements of Section 259.032, Florida Statutes (FS), to provide the Management Advisory Group stakeholders and the general public with a general understanding of and

purpose for the BFWEA, prior to the required public hearing to solicit public input on the BFWEA management plan.

Adjacent Public and Private Conservation Lands and Florida Forever Projects

Florida Forever projects and conservation lands within a 10-mile radius of the BFWEA (Tables 1 – 2) include lands managed by public and private entities that contribute to the conservation of cultural and natural resources within this region of Florida. Most of the conservation lands within the vicinity of the BFWEA are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned by a private landowner while a public agency or not-for-profit organization holds a conservation easement and monitoring responsibility for the land. Other areas are simply owned by the private landowner, while public agencies or not-for profit organizations manage the land.

Conservation lands that are located in the vicinity of the BFWEA are shown in Figure 2. Located within 10 miles of the BFWEA are conservation areas managed by the Federal Government, Florida Forest Service (FFS), the FWC, the St. John's River Water Management District (SJRWMD), county governments, and private conservation organizations, such as the Timucuan Trails Parks Foundation. The Cecil Field Conservation Corridor, managed by the City of Jacksonville, lies directly adjacent to the western boundary of BFWEA.

Table 1. Conservation Lands within a 10-mile Radius of BFWEA

Federal Government	Managing Agency
Camp Blanding Joint Training Center	FL Dept. of Military Affairs
Jacksonville Naval Air Station	DOD
State of Florida	**Managing Agency**
Longbranch Crossing Gopher Tortoise Recipient Site	FWC
Cary State Forest	FFS
Jennings State Forest	FFS
Belmore State Forest	FFS
County/City	**Managing Agency**
Camp Milton Historic Preserve	City of Jacksonville
Bulls Bay Preserve	City of Jacksonville
Yellow Water Branch Trail Head	City of Jacksonville
Brandy Branch Trail Head	City of Jacksonville
Cecil Field Conservation Corridor	City of Jacksonville
Sal Taylor Creek Preserve	City of Jacksonville
Jacksonville-Baldwin Rail Trail	City of Jacksonville
International Paper	City of Jacksonville
Ringhaver Park	City of Jacksonville

Ferngully Preserve	City of Jacksonville
Goodbys Creek Preserve	City of Jacksonville
McGirts Creek Preserve	City of Jacksonville
Otis Road Trail Head	City of Jacksonville
Camp Chowenwaw Park	Clay County
Moccasin Slough	Clay County
Monticello Wildlands Conservation Easement	Duval County
Loblolly Park	Duval County
Loblolly Mitigation Preserve	Duval County
Alpine Groves Park	St. Johns County
Water Management District	**Managing Agency**
Skinner-Smith Parcel	SJRWMD
Stormwater Park	SJRWMD
Black Creek Ravines Conservation Area	SJRWMD
University of Florida Law Center Association Parcel	SJRWMD
Stone Mountain Industrial Park	SJRWMD
Arahatchee Conservation Easement	SJRWMD
Longbranch Crossing Conservation Easement	SJRWMD
Private	**Managing Agency**
Cedar River Sanctuary	Florida Audubon Society, Inc.
Trout River	Timucuan Trails Parks Foundation
Crosby Sanctuary	Duval Audubon Society, Inc.
Grandy Preserve	Duval Audubon Society, Inc.
Miller Farm	JEA
Peterson Tract	JEA
Raiford Wildlife Management Area	PRIDE Enterprises, Inc.

Acronym Key	Agency Name
DOD	Department of Defense
JEA	Jacksonville Electrical Authority
FFS	Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
SJRWMD	St. John's River Water Management District

Table 2. Florida Forever Projects within a 10-mile Radius of BFWEA

Project Name	GIS Acres
Northeast Florida Timberlands and Watershed Reserve	147,049.8
Baldwin Bay/St. Mary's River	9,130.8
Camp Blanding to Raiford Greenway	33,977.5

Purpose for Acquisition

The primary purpose for acquisition of the BFWEA is to promote habitat conditions critical to meeting the life history requirements of the gopher tortoise and associated upland wildlife species. The BFWEA was acquired as a means to provide an offsite compensation alternative to state and federal listed species regulatory decisions. Approximately 95% of the funding for acquisition and management of the BFWEA originated from state regulatory actions taken on behalf of the gopher tortoise. The following mission statement was developed and approved by the FWC to guide management activities at the BFWEA: "It shall be the primary management mission at BFWEA to manage plant communities and public use in a manner that gives first consideration to the habitat needs and life history requirements of the gopher tortoise."

Acquisition History

BFWEA was acquired with funds received through the FWC's Mitigation Park Program to restore and maintain the habitats critical to the long-term benefit of state and federally listed upland species, particularly the gopher tortoise.

The original portion of BFWEA, a 250-acre parcel owned by Gulfstream Properties, was acquired by the Game and Fresh Water Fish Commission (now FWC) in 1990 through the FWC Fish and Wildlife Habitat Acquisition Program with funding from the FWC Mitigation Park Program in partnership with the Trust for Public Land (TPL). Subsequently, FWC acquired a 136-acre tract from the TPL in 1992 and established the area as a WEA in 1993. The BFWEA acquisition was completed under an interagency Memorandum of Understanding (MOU) that involved the Northeast Florida Regional Planning Council, the Trust for Public Land, Florida Defenders of the Environment, and the FWC. This MOU was developed to provide an offsite mitigation alternative to land development interests and provided a template for the Mitigation Park Program

The FWC implemented the now defunct Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Section 372.074 of the (FS) (since replaced by Chapter 379, 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 to provide compatible fish and wildlife based public outdoor recreation.

As noted above, the Mitigation Park Program was created by FWC in 1988 to help protect endangered and threatened wildlife from the impacts of development by providing an offsite alternative to the previous method of on-site preservation of habitat within the boundaries of a development. Through this program, when developers proposed to develop habitat for

an endangered or threatened species, they paid mitigation "taking" fees that were used to buy and manage high quality habitat elsewhere. As a result, the program provided an alternative method to preserve wildlife habitat while allowing developers to develop imperiled species habitat on their project sites. It also consolidates mitigation within a geographical region by buying larger, more manageable tracts which are established as WEAs and can be utilized by the public for low-intensity, natural resource-based recreation.

All of the WEAs established through this program are managed primarily to protect and enhance habitat important to upland endangered or threatened wildlife, especially the gopher tortoise. The Mitigation Park Program has since been discontinued, but the 14 mitigation tracts acquired through the program continue to be actively managed by the FWC in accordance with their original purpose for acquisition. Gopher Tortoise Mitigation Parks, now established by the FWC as Wildlife and Environmental Areas (WEAs), provide conservation of important fish and wildlife habitat while allowing for public outdoor recreation within a multiple-use management regime that is primarily focused on restoration and management of gopher tortoise habitat. For this reason, management activities emphasize the maintenance and restoration of optimum listed species habitat.

Title and Encumbrances

Title to the lands acquired and established as the BFWEA are vested with the FWC. There are no known encumbrances on the property. Consequently, the FWC is the principal management authority for the BFWEA. Additional management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 372, 375, 378, 379, 403, 487, 597, and 870 of the Florida Statutes. These laws establish the overall authority of the FWC with regard to protection and management of the State's fish and wildlife resources.

Natural Resources

Pine flatwoods (both mesic flatwoods and wet flatwoods) are the predominant plant community on the area. Wildlife is abundant on BFWEA; in addition to gopher tortoises; animals such as eastern indigo snakes, eastern diamondback rattlesnakes, gopher frogs and Florida pine snakes find refuge within tortoise burrows and are expected to occur on the area. Eastern bluebirds, woodpeckers, pine warblers and brown-headed nuthatches are common residents of pine flatwoods. Visitors to the area can listen for the distinctive calls of the eastern towhee and Bachman's sparrow along with a diverse variety of both resident and migratory bird species that frequently use the area. White-tailed deer and wild turkey are also occasionally observed here.

Carnivorous pitcher plants, sundews, showy wildflowers and lupine occur throughout the area. Four imperiled plants have been identified here; hooded pitcher plant, piedmont joint grass, giant orchid and Florida toothache grass.

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Due to the nearly intact nature of BFWEA's natural plant communities, the area is considered to be in "maintenance" condition meaning that the predominant resource management activities involve maintaining the natural cycle of prescribed fire, monitoring wildlife, checking for exotic invasive plant species with little, if any, resource restoration work being needed. The area's hiking trail and boundary (fire break) are also maintained and monitored regularly. The population of gopher tortoises on the area is regularly monitored and appears stable over time. The physical characteristics and condition of the botanical communities are also monitored periodically as part of the FWC's Objective Based Vegetation Monitoring program.

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC initially surveyed and mapped the natural and anthropogenic communities of the BFWEA in 2007. The area was re-mapped and the natural communities were recertified by the FNAI in 2014. This mapping effort identified 8 natural and anthropogenic community types existing on the BFWEA (Table 3 and Figure 5). The predominant natural communities found on the area are mesic flatwoods, sandhill and wet flatwoods. Surveys by FWC biologists and contracted FNAI staff have documented a variety of native and imperiled plant species (Tables 4 and 5). As noted above, BFWEA is in maintenance condition and no invasive exotic vegetation is recorded as currently being onsite. Previous limited occurrences of invasive/exotic plant species (Table 6) were identified and eradicated. The FNAI historic communities are shown in Figure 6.

Table 3. BFWEA FNAI Natural and Anthropogenic Communities

Community Type	Acreage*	Percentage
Basin swamp	22.8	5.9%
Depression marsh	1.5	0.4%
Dome swamp	19.8	5.1%
Impoundment/artificial pond	1.5	0.4%
Mesic flatwoods	105.5	27.3%
Sandhill	84.9	22.0%
Wet flatwoods	147.1	38.1%
Xeric hammock	3.3	0.9%

*GIS-calculated acreage may differ from actual acreage.

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
American beautyberry	*Callicarpa americana*
Bahiagrass	*Paspalum notatum*
Blackgum	*Nyssa sylvatica*
Blackroot	*Pterocaulon pycnostachyum*
Blue huckleberry	*Gaylussacia frondosa var. tomentosa*

Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Blue maidencane	*Amphicarpum muhlenbergianum*
Bluejack oak	*Quercus incana*
Bottlebrush threeawn	*Aristida spiciformis*
Bracken fern	*Pteridium aquilinum*
Broomsedge bluestem	*Andropogon virginicus*
Carolina redroot	*Lachnanthes caroliana*
Chinquapin	*Castanea pumila*
Clasping waterhorehound	*Lycopus amplectens*
Climbing hempvine	*Mikania scandens*
Clustered sedge	*Carex glaucescens*
Coastalplain chaffhead	*Carphephorus corymbosus*
Common persimmon	*Diospyros virginiana*
Common ragweed	*Ambrosia artemisiifolia*
Creeping primrosewillow	*Ludvigia repens*
Curtiss' dropseed	*Sporobolus curtissii*
Cypress	*Taxiodium sp.*
Dogfennel	*Eupatorium capillifolium*
Dogtongue wild buckwheat	*Eriogonum tomentosum*
Dollarleaf	*Rhynchosia reniformis*
Dwarf live oak	*Quercus minima*
Dwarf pawpaw	*Asimina pygmea*
Earleaf greenbrier	*Smilax auriculata*
Early whitetop fleabane	*Erigeron vernus*
Eastern milkpea	*Galactia regularis*
Eastern silver aster	*Symphyotrichum concolor*
Fascicled beaksedge	*Rhynchospora fascicularis*
Fernleaf yellow false foxglove	*Aureolaria pedicularia var. pectinata*
Fetterbush	*Lyonia lucida*
Flaxleaf false foxglove	*Agalinis linifolia*
Florida dropseed	*Sporobolus floridanus*
Florida greeneyes	*Berlandiera subacaulis*
Florida hoary-pea	*Tephrosia florida*
Florida threeawn	*Aristida rhizomophora*
Giant gallberry	*Ilex glabra*
Gopher apple	*Licania michauxii*
Highbush blueberry	*Vaccinium corymbosum*
Kidneyleaf rosinweed	*Silphium compositum*
Laurel greenbrier	*Smilax laurifolia*
Laurel oak	*Quercus hemisphaerica*

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Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Live oak	*Quercus virginiana*
Loblolly bay	*Gordonia lasianthus*
Longleaf pine	*Pinus palustris*
Lopsided indiangrass	*Sorghastrum secundum*
Maidencane	*Panicum hemitomon*
Manyhead rush	*Juncus polycephalos*
Marshelder	*Iva microcephala*
Mohr's thoroughwort	*Eupatorium mohrii*
Muscadine	*Vitis rotundifolia*
Myrtle dahoon	*Ilex cassine var. myrtifolia*
Myrtleleaf St. John's wort	*Hypericum myrtifolium*
Narrowfruit horned beaksedge	*Rhynchospora inundata*
Narrowleaf silkgrass	*Pityopsis graminifolia*
Needleleaf witchgrass	*Dichanthelium aciculare*
Netted nutrush	*Scleria reticularis*
Oblongleaf twinflower	*Dyschoriste oblongifolia*
Partridge pea	*Chamaecrista fasciculata*
Peelbark St. John's wort	*Hypericum fasciculatum*
Piedmont roseling	*Callisia rosea*
Pinebarren goldenrod	*Solidago fistulosa*
Pineywoods dropseed	*Sporobolus junceus*
Pond cypress	*Taxodium ascendens*
Purple lovegrass	*Eragrostis spectabilis*
Ragweed	*Ambrosia psilostachya*
Red maple	*Acer rubrum*
Rose-of-Plymouth	*Sabatia stellaris*
Rosy camphorweed	*Pluchea rosea*
Running oak	*Quercus elliottii*
Sand blackberry	*Rubus cuneifolius*
Sand post oak	*Quercus margaretta*
Savannah meadowbeauty	*Rhexia alifanus*
Saw palmetto	*Serenoa repens*
Scaleleaf aster	*Symphyotrichum adnatum*
Shiny blueberry	*Vaccinium myrsinites*
Shortleaf gayfeather	*Liatris tenuifolia*
Slash pine	*Pinus elliottii*
Slender flattop goldenrod	*Euthamia caroliniana*
Slender gayfeather	*Liatris gracilis*
Slender woodoats	*Chasmanthium laxum*

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Table 4. Native Plant Species Known to Occur on the BFWEA

Common name	Scientific name
Smallfruit beggarticks	*Bidens mitis*
Smooth beggarticks	*Bidens laevis*
Soft rush	*Juncus effusus subsp. solutus*
Southeastern primrosewillow	*Ludwigia linifolia*
Spadeleaf	*Centella asiatica*
Splitbeard bluestem	*Andropogon ternarius*
Sugarcane plumegrass	*Saccharum giganteum*
Swamp bay	*Persea palustris*
Swamp tupelo	*Nyssa biflora*
Tall elephantsfoot	*Elephantopus elatus*
Tarflower	*Befaria racemosa*
Toothachegrass	*Ctenium aromaticum*
Turkey oak	*Quercus laevis*
Variable-leaf crownbeard	*Verbesina heterophylla*
Virginia chain fern	*Woodwardia virginica*
Wand goldenrod	*Solidago stricta*
Water cowbane	*Oxypolis filiformis*
Water oak	*Quercus nigra*
Wax myrtle	*Myrica cerifera*
Whitemouth dayflower	*Commelina erecta*
Whitetop aster	*Sericocarpus tortifolius*
Wiregrass	*Aristida stricta var. beyrichiana*
Woolly pawpaw	*Asimina incana*
Yankeeweed	*Eupatorium compositifolium*
Yellow hatpins	*Syngonanthus flavidulus*
Yellow jessamine	*Gelsemium sempervirens*
Yellow-eyed grass	*Xyris sp.*

Table 5. Imperiled Plants Known or Expected to Occur at BFWEA

Common Name	Scientific Name	Status
Hooded pitcherplant	*Sarracenia minor*	ST
Variable-leaf crownbeard	*Verbesina heterophylla*	NL
Giant orchid	*Pteroglossaspis ecristata*	ST
Piedmont joint grass	*Coelorachis tuberculosa*	ST
Florida toothache grass	*Ctenium floridanum*	SE

Abbreviations: NL – Not Listed; ST - State listed threatened

Table 6. Exotic Plant Species Known to Previously Occur on the BFWEA

Common Name	Scientific Name
Chinese Tallow	*Sapium sebiferum*
Mimosa	*Albizia julibrissin*

FNAI Natural Community Descriptions

Basin Swamp (~22.8 Acres)

Basin swamps are forested wetlands of primarily deciduous trees occurring in large (generally greater than 10 acres), irregularly shaped depressions that are not associated with lotic water systems. Typical plants include blackgum, cypress, slash pine and bays. Basin swamps are differentiated from dome swamps not only by their generally larger size, but also by their long hydroperiod that may extend to nearly permanent water. The long hydroperiod and the resulting incomplete burning often results in a sparse herbaceous cover and moderate to dense shrub cover.

At BFWEA, two basin swamps were identified and both extend off of the area. There is a nearly closed canopy of mature slash pine and pond cypress. The sub-canopy is composed of red maple, swamp tupelo, and pond cypress. There is a moderately dense tall shrub layer of red maple, myrtle dahoon, wax myrtle, and swamp bay. Short shrubs are occasional and include seedling red maple, myrtle dahoon, fetterbush, wax myrtle, and highbush blueberry. Herbaceous cover is sparse and patchy in the interior. Portions of the fringe are moderately dense. Species observed are broomsedge bluestem, smallfruit beggarticks, clustered sedge, yankeeweed, soft rush, Carolina redroot, creeping primrosewillow, clasping water-horehound, climbing hempvine, maidencane, rosy camphorweed, sugarcane plumegrass, pinebarren goldenrod, and Virginia chain fern. A large ditch along the edge of the northern basin swamp substantially affects the hydroperiod of this swamp and the surrounding communities.

The present extent of basin swamp at BFWEA is the same as indicated on historic aerial photographs. The signature on the photography is very dark with irregular dimpling of light gray. The large basin swamp at the southern end of BFWEA has a large patch of gray (a slightly raised area) that may have been cleared or burned preceding the photograph.

Depression marsh (~1.5 Acres)

Depression marshes are shallow, rounded depressions in sand substrate with herbaceous vegetation often in concentric bands along a hydrologic gradient. They are typically small (less than five acres) and not associated with flowing water. Depression marshes are typical of karst regions where sand has slumped around or over a sinkhole. These conical depressions are subsequently filled by direct rainfall, runoff, or seepage from surrounding uplands. The substrate is usually acid sand, possibly with peat development toward the

center or deeper areas. Some depressions may have a subsurface hardpan that slows water percolation. Depression marshes are distinguished from basin marshes by a short hydroperiod, which allows fire to regularly burn through the community, thus limiting establishment of shrubs and herbaceous species typical of permanent or nearly permanent water. Basin marshes are generally large, and may have nearly permanent water.

At BFWEA, two depression marshes were identified. Both marshes are less than one acre in size and are very shallow. One marsh has a couple of slash pine and pond cypress in the canopy. The tall shrub layer of the marshes is generally sparse, but includes red maple, myrtle dahoon, and swamp tupelo. The short shrub layer was represented by peelbark St. John's wort, which is common in the mid to outer rings of vegetation. Slash pine seedlings are also present. The herbaceous layer is moderately dense and includes broomsedge bluestem, dogfennel, Mohr's thoroughwort, slender flattop goldenrod, soft rush, manyhead rush, Carolina redroot, rosy camphorweed, and pinebarren goldenrod. Many of the herbaceous species observed are weedy species characteristic of areas that have experienced soil disturbance.

<u>Dome Swamp (~19.8 Acres)</u>

Dome Swamps are shallow, forested, often circular depressions that generally present a domed profile on the landscape. Pond cypress, swamp tupelo, and slash pine are common plants. Dome Swamps typically develop in sandy flatwoods and in karst areas where sand has slumped around or over a sinkhole, creating a conical depression. Soils are composed of peat, which becomes thickest toward the center of the dome, and are generally underlain with acidic sands over limestone. The hydroperiod is variable, but most dome swamps hold surface water for six to nine months. Some domes have a clay lens that helps retain water levels. Dome swamps are differentiated from basin swamps not only by their generally smaller size, but also by their shorter hydroperiod. The shorter hydroperiod allows for more complete burning, at least in some years, resulting in higher herbaceous cover and lower shrub cover, particularly around the periphery.

At BFWEA, several dome swamps were mapped. These generally have a moderate canopy of slash pine, and pond cypress. The sub-canopy fills most canopy tree gaps and is composed of red maple, swamp tupelo, and pond cypress. The tall shrub layer is variable in density and includes myrtle dahoon, fetterbush, and wax myrtle. Short shrubs are also variable, represented by fetterbush and young shrubs and trees including common persimmon, myrtle dahoon, gallberry, and wax myrtle. Herb cover is generally moderately dense and was represented principally by broomsedge bluestem, clustered sedge, clasping waterhorehound, maidencane, rosy camphorweed, sugarcane plumegrass, and Virginia chain fern. The dome swamps at BFWEA are generally undisturbed.

Impoundment/Artificial Pond (~1.5 Acres)

A small borrow area in the sandhill was identified as ruderal – impoundment/artificial pond. It is a scraped-out depression in the sandhill measuring approximately one acre. There are no canopy or shrub layers. The herbaceous cover is moderate and composed almost entirely of weedy species. Dominants were ragweed, broomsedge bluestem, purple lovegrass, dogfennel, yankeeweed, Mohr's thoroughwort, marshelder, slender flattop goldenrod, southeastern primrosewillow, rosy camphorweed, and yellow hatpins. Although classified as ruderal this artificial pond may provide habitat for breeding amphibians. The site could be improved by reducing the slope of the banks and seeding or planting native marsh grasses and sedges.

Mesic Flatwoods (~105.5 Acres)

Mesic flatwoods was once the most widespread natural community in Florida, covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods is characterized by an open canopy of tall pines and a dense, low ground layer of shrubs, grasses, and forbs with no or few hardwoods. Longleaf pine is the principal canopy tree in northern and Central Florida, transitioning to predominately slash pine in south Florida. There is typically no tall shrub layer; however, short shrubs are diverse and may cover a large percentage of the community. Herbaceous cover is moderate to dense and typically very diverse. The typical plant association for mesic flatwoods is longleaf pine-saw palmetto-wiregrass. Soils are acidic, nutrient-poor, fine sands with upper layers darkened by organic matter. Drainage in this flat terrain can be impeded by a loosely cemented organic layer (spodic horizon) formed within several feet of the soil surface. The soils may be alternately xeric during dry periods, and saturated or even inundated after heavy rain events.

At BFWEA, the canopy in mesic flatwoods is generally open. Slash pine and longleaf pine are present. Areas in the southern portion of the site have been disturbed by past forestry practices and generally lack longleaf pine. The southern areas have a moderately dense tall shrub layer composed of loblolly bay, wax myrtle, swamp bay, laurel oak, water oak, and highbush blueberry. Northern areas are generally in better structural condition with no or sparse tall shrubs. Short shrub cover is variable in both structure and composition. Areas in the north are more characteristic of mesic flatwoods because of current management and moderate past disturbance. These areas supported dwarf pawpaw, tarflower, blue huckleberry, gallberry, gopher apple, fetterbush, running oak, dwarf live oak, saw palmetto, and shiny blueberry.

Common species in the disturbed and less frequently burned areas in the south included wax myrtle, highbush blueberry, and sand blackberry. Herbaceous cover was similarly representative and diverse in the northern areas. Species observed included flaxleaf false foxglove, broomsedge bluestem, Florida threeawn, bottlebrush threeawn, wiregrass, toothachegrass, needleleaf witchgrass, dogtongue wild buckwheat, dogfennel, Mohr's

thoroughwort, slender flattop goldenrod, Carolina redroot, slender gayfeather, shortleaf gayfeather, narrowleaf silkgrass, rosy camphorweed, blackroot, savannah meadowbeauty, rose-of-Plymouth, wand goldenrod, lopsided indiangrass, Curtiss' dropseed, eastern silver aster, yellow hatpins, and Virginia chain fern. Woody vines included yellow jessamine, earleaf greenbrier, and muscadine.

Sandhill (~84.9 Acres)

Sandhill is a forest of widely spaced pine trees and deciduous oaks and a moderate to dense ground cover of grasses and forbs on deep well-drained sands. The typical plant association is longleaf pine, turkey oak and wiregrass. Sandhills are important aquifer recharge areas because the porous sands allow water to percolate rapidly with little runoff and minimal evaporation. The deep sandy soils contribute to a xeric environment that is accentuated by the scattered overstory. Sandhills require growing season fires to maintain their open structure. In the absence of fire, succession may favor development of xeric hammock or turkey oak barrens. Sandhills provide habitat for several rare animal species including gopher tortoise, indigo snake, Sherman's fox squirrel, and Bachman's sparrow.

At BFWEA, the sandhill is located in the northern part of the area. There is an open to sparse canopy of slash pine and longleaf pine. The sub-canopy throughout most of the site is composed of laurel oak and turkey oak. There are some sub-mesic areas that have no turkey oak, but may have a few laurel oaks. The tall shrub layer is composed of occasional bluejack oak, turkey oak, and sand post oak. Short shrubs are common and include woolly pawpaw, dwarf pawpaw, chinquapin, gopher apple, turkey oak, dwarf live oak, sand blackberry, saw palmetto, and shiny blueberry. Herbaceous cover is abundant and diverse throughout the sandhill as a result of regularly prescribed fire and the lack of extensive ground disturbance.

Species observed are splitbeard bluestem, wiregrass, fernleaf yellow false foxglove, Florida greeneyes, piedmont roseling, coastalplain chaffhead, whitemouth dayflower, needleleaf witchgrass, oblongleaf twinflower, tall elephantsfoot, early whitetop fleabane, yankeeweed, eastern milkpea, shortleaf gayfeather, narrowleaf silkgrass, bracken fern, dollarleaf, whitetop aster, kidneyleaf rosinweed, pineywoods dropseed, scaleleaf aster, Florida hairy-pea, and variable-leaf crownbeard. Woody vines are infrequent and include earleaf greenbrier. Evidence of moderate to severe ground disturbance is limited to small areas. Light disturbance is evident throughout; however, weedy cover was generally low.

Wet Flatwoods (~147.1 Acres)

Wet flatwoods occur in broad, low flatlands, often in a mosaic with these communities. They are found in the ecotones between mesic flatwoods, shrub bogs, wet prairies, dome swamps, or strand swamps. Wet flatwoods are pine forests with a sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The

relative density of shrubs and herbs varies greatly in wet flatwoods. Shrubs tend to dominate where fire has been absent for a long period or where cool season fires predominate; herbs are more abundant in locations that are frequently burned. Soils and hydrology also influence the relative density of shrubs and herbs. Soils of shrubby wet flatwoods are generally poorly to very poorly drained sands. These soils generally have a mucky texture in the uppermost horizon. Loamy sands are typical of soils in grassy wet flatwoods. They are relatively open-canopy forests of scattered pine trees or cabbage palms with either a thick shrubby understory and very sparse ground cover, or a sparse understory and a dense ground cover of hydrophytic herbs and shrubs. Several variations exist between these extremes. Wet flatwoods can occur on broad, poorly drained flats or as transitions from mesic flatwoods to wetlands.

At BFWEA, wet flatwoods occur in transitions between mesic flatwoods and wetlands. Some of the areas mapped as wet flatwoods appear to have been wet prairies (with inclusions of wet flatwoods) that have been planted in, or are otherwise invaded by, pine trees. There currently is a canopy of widely spaced mature slash pine. There is a sub-canopy layer in areas that have not burned in many years. Laurel oak is the dominant species. The tall shrub layer is variable, ranging from absent in the regularly burned areas to dense in the non-burned areas (generally in the southern end of the site). Dominant species are red maple, myrtle dahoon, wax myrtle, swamp bay, and laurel oak. Short shrubs are similarly variable; dominant species are peelbark St. John's wort, myrtle dahoon, gallberry, wax myrtle, swamp bay, sand blackberry.

Species observed are blue maidencane, broomsedge bluestem, wiregrass, smooth beggarticks, spadeleaf, toothachegrass, dogfennel, slender flattop goldenrod, myrtleleaf St. John's wort, soft rush, Carolina redroot, water cowbane, bahiagrass, rosy camphorweed, fascicled beaksedge, narrowfruit horned beaksedge, sugarcane plumegrass, netted nutrush, Florida dropseed, and Virginia chain fern. Most of the areas mapped as wet flatwoods have a high proportion of weedy species, indicating past ground disturbance. Vines were not a significant component of the wet flatwoods.

Xeric Hammock (~3.3 Acres)

Xeric Hammock is a forest of xerophytic oaks of variable height and density occurring on well-drained sandy soils. The typical plant association is sand live oak-scrub oaks-fyonia-saw palmetto. Xeric Hammock is a climax scrub community that naturally develops in fire shadows often associated with wetlands or steep slopes. Scrub or sandhill that has been allowed to develop an oak canopy because of insufficient fire is often classified as xeric hammock, which is the case for the one small hammock on BFWEA.

At BFWEA, although the xeric hammock can be seen on historic aerial photos, it is very small and not positioned to be sheltered from past fires. Development of this hammock has apparently occurred within the last 100 years. The canopy is composed of a few large live

oaks. The sub-canopy is composed of laurel oak. The tall shrub layer is composed of a few scattered common persimmon, and laurel oak. Short shrub cover is sparse and patchy; dominant species are woolly pawpaw, American beautyberry, laurel oak, and saw palmetto. Herbaceous cover is sparse and includes slender woodoats, needleleaf witchgrass, and bahiagrass. Woody vines are common and include earleaf greenbrier, and muscadine.

Fish and Wildlife

Integrated Wildlife Habitat Ranking System

The FWC has developed the Integrated Wildlife Habitat Ranking System (IWHRS) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of land cover and wildlife species data. The IWHRS evaluates 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 BFWEA has a high mean wildlife value of 6.9. The FWC's IWHRS map for the BFWEA is shown in Figure 10.

Rare and Imperiled Species

As described above, the BFWEA has a variety of natural communities that support a number of imperiled (species listed by the U.S. Fish and Wildlife Service [USFWS] or the FWC as endangered, threatened, or species of special concern), rare, and other more common wildlife species. Active wildlife management practices and a diversity of habitat types make the BFWEA an excellent place to view wildlife. The BFWEA's mesic flatwoods, sandhills, wet flatwoods and other natural communities provide critical habitat for resident and migratory wildlife. Table 7 lists some of the rare and imperiled wildlife species that have been documented as occurring on or in the vicinity of the BFWEA. The FNAI element occurrences that have been documented within the BFWEA are listed in Table 8 and displayed in Figure 7.

Table 7. Imperiled Wildlife Species Known or Expected to Occur at BFWEA

Common Name	Scientific Name	Status
Birds		
Southeastern American kestrel	*Falco sparverius paulus*	ST
White ibis	*Eudocimus albus*	SSC
Mammals		

Sherman's fox squirrel	*Sciurus niger shermani*	SSC
Reptiles		
Florida pine snake	*Pituophis melanoleucus mugitus*	SSC
Gopher tortoise	*Gopherus polyphemus*	ST

Abbreviations: State-designated Threatened (ST), or State Species of Special Concern (SSC).

All abbreviations and status determinations were derived from Florida's Endangered and Threatened Species published by the FWC in October 2012. The FWC maintains the state list of animals designated as Federally-designated Endangered or Threatened, State-designated Threatened, or State-designated Species of Special Concern, in accordance with Rules 68A-27.003 and 68A-27.005, respectively, of the Florida Administrative Code https://www.flrules.org/.

In January 2013, new threatened species rules approved by the FWC went into effect. The list of wildlife presented here reflects those changes to the rules. All federally listed species that occur in Florida are now included on Florida's list as Federally-designated Endangered or Federally-designated Threatened species. In addition, the state has a listing process to identify species that are not federally listed but at risk of extinction. These species will be called State-designated Threatened. All State-designated species that have recently undergone status reviews were presented and approved at the June 2011 Commission meeting. The FWC will continue to maintain a separate Species of Special Concern category until all the species have been reviewed and those species are either designated as State-Threatened and given a management plan or removed from the list. More detailed descriptions and management prescriptions are available on the FWC website: http://www.myfwc.com/wildlifehabitats/profiles/.

Table 8. FNAI Element Occurences on BFWEA

Common Name	Scientific Name
Florida Toothache Grass	*Ctenium floridanum*
Giant Orchid	*Pteroglossaspis ecristata*
Gopher Tortoise	*Gopherus polyphemus*
Piedmont Jointgrass	*Coelorachis tuberculosa*
Variable-leaf Crownbeard	*Verbesina heterophylla*
Yehl Skipper	*Poanes yehl*

FWC maintains an inventory of fauna occurring or potentially occuring on BFWEA, including species having been identified potential habitat (Table 9), reptiles and amphibians (Table 10), birds (Table 11), invertebrates (Table 12). An inventory of exotic fauna is also maintained (Table 13).

Table 9. Species Identified as Having Potential Habitat on BFWEA

Common name	Scientific name
Big brown bat	*Eptesicus fuscus*
Bobcat	*Lynx rufus*
Florida black bear	*Ursus americanus floridanus*
Longtail weasel	*Mustela frenata olivacea*
Northern short-tailed shrew	*Blarina brevicauda*
Northern yellow bat	*Lasiurus intermedius*
Raccoon	*Procyon lotor*
Round-tailed muskrat	*Neofiber alieni*
Sherman's fox squirrel	*Sciurus niger shermani*
Southeastern bat	*Myotis austroriparius*
Southeastern shrew	*Sorex longirostris longisrostris*
Striped skunk	*Mephitis mephitis*
Virginia opossum	*Didelphis virginiana*
White-tailed deer	*Odocoileus virginianus*

Table 10. Amphibian and Reptile Species Known to Occur on BFWEA

Common Name	Scientific Name
Chicken turtle	*Deirochelys reticularia*
Cottonmouth	*Agkistrodon piscivorus*
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern hognose snake	*Heterodon platirhinos*
Eastern indigo snake	*Drymarchon couperi*
Florida box turtle	*Terrapene carolina bauri*
Florida pine snake	*Pituophis melanoleucus mugitus*
Southern fence lizard	*Sceloporus undulatus*
Florida watersnake	*Nerodia fasciata*
Gopher frog	*Lithobates capito*
Gopher tortoise	*Gopherus polyphemus*
Mole kingsnake	*Lampropeltis calligaster*
Oak toad	*Anaxyrus quercicus*
Ornate chorus frog	*Pseudacris ornata*
Short-tailed snake	*Stilosoma extenuatum*
Southern hognose snake	*Heterodon simus*
Southern leopard frog	*Lithobates sphenocephalus*
Tiger salamander	*Ambystoma tigrinum*

Table 11. Avian Species Known to Occur on BFWEA

Common Name	Scientific Name
Acadian flycatcher	*Empidonax virescens*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American kestrel	*Falco sparverius*
American robin	*Turdus migratorius*
Bachman's sparrow	*Aimophila aestivalis*
Bald eagle	*Haliaeetus leucocephalus*
Barred owl	*Strix varia*
Black vulture	*Coragyps atratus*
Black-and-white warbler	*Mniotilta varia*
Blue grosbeak	*Passerina caerulea*
Blue jay	*Cyanocitta cristata*
Blue-gray gnatcatcher	*Polioptila caerulea*
Blue-headed vireo	*Vireo solitarius*
Boat-tailed grackle	*Quiscalus major*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Brown-headed nuthatch	*Sitta pusilla*
Burrowing owl	*Athene cunicularia*
Carolina chickadee	*Poecile carolinensis*
Carolina wren	*Thryothorus ludovicianus*
Cedar waxwing	*Bombycilla cedrorum*
Chimney swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Chuck-will's-widow	*Caprimulgus carolinensis*
Common grackle	*Quiscalus quiscula*
Common ground-dove	*Columbina passerina*
Common nighthawk	*Chordeiles minor*
Common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
Downy woodpecker	*Picoides pubescens*
Eastern bluebird	*Sialia sialis*
Eastern kingbird	*Tyrannus tyrannus*
Eastern meadowlark	*Sturnella magna*
Eastern phoebe	*Sayornis phoebe*
Eastern screech owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
European starling	*Sternus vulgaris*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Gray catbird	*Dumetella carolinensis*
Great blue heron	*Ardea herodias*
Great crested flycatcher	*Myiarchus crinitus*
Great egret	*Ardea alba*

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Great horned owl	*Bubo virginianus*
Green heron	*Butorides striatus*
Henslow's sparrow	*Ammodramus henslowii*
Hermit thrush	*Catharus guttatus*
Hooded warbler	*Wilsonia citrina*
House sparrow	*Passer domesticus*
House wren	*Troglodytes aedon*
Indigo bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
Lesser yellowlegs	*Tringa flavipes*
Little blue heron	*Egretta caerulea*
Loggerhead shrike	*Lanius ludovicianus*
Mississippi kite	*Ictinia mississipiensis*
Mourning dove	*Zenaida macroura*
Northern bobwhite	*Colinus virginianus*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus hudsonius*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Parula Americana*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Orange-crowned warbler	*Orecthlypis celata*
Orchard oriole	*Icterus spurius*
Osprey	*Pandion haliaetus*
Palm warbler	*Setophaga palmarum*
Pileated woodpecker	*Dryocopus pileatus*
Pine warbler	*Setophaga pinus*
Prairie warbler	*Setophaga discolor*
Prothonotary warbler	*Protonotaria citrea*
Purple gallinule	*Porphyrula martinica*
Purple martin	*Progne subis*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-eyed vireo	*Vireo olivaceus*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Rock dove	*Columba livia*
Ruby-crowned kinglet	*Regulus calendula*
Ruby-throated hummingbird	*Archilochus colubris*
Sharpshinned hawk	*Accipiter striatus*
Snowy egret	*Egretta thula*
Song sparrow	*Melospiza melodia*
Summer tanager	*Piranga rubra*
Swallow-tailed kite	*Elanoides forficatus*
Swamp sparrow	*Melospiza georgiana*
Tricolored heron	*Egretta tricolor*
Tufted titmouse	*Baeolophus bicolor*

Turkey vulture	*Cathartes aura*
White ibis	*Eudocimus albus*
White-eyed vireo	*Vireo griseus*
Wild turkey	*Meleagris gallopavo*
Wood duck	*Aix sponsa*
Wood stork	*Mycteria americana*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Yellow-billed cuckoo	*Coccyzusamericanus*
Yellow-rumped warbler	*Setophaga coronata*
Yellow-throated vireo	*Vireo flavifrons*
Yellow-throated warbler	*Dendroica dominica*

Table 12. Invertebrate Species Known to Occur on BFWEA

Common Name	Scientific Name
Barred yellow	*Eurema daira daira*
Bella moth	*Utetheisa bella*
Berry's skipper	*Euphyes berryi*
Black swallowtail	*Papilo polyxenes*
Bleeding flower moth	*Schinia sanguinea*
Carolina satyr	*Hermeuptychia sosybius*
Ceraunus blue	*Hemiargus ceraunus*
Cloudless sulpher	*Phoebis sennae ebule*
Common buckeye	*Junonia coenia*
Common wood-nymph	*Cercyonis pegala*
Confused Cloudywing	*Thorybes confusis*
Delaware skipper	*Anatrytone logan*
Dion skipper	*Euphyes dion*
Dotted Roadside-Skipper	*Amblyscirtes eos*
Eastern tiger swallowtail	*Papilio glaucus*
Fiery skipper	*Hylephila phyleus*
Gray hairstreak	*Strymon melinus*
Gulf fritillary	*Agraulis vanillae*
Horace's Duskywing	*Erynnis horatius*
Little metalmark	*Calephelis virginiensis*
Little yellow	*Eurema lisa*
Long-tailed skipper	*Urbanus proteus*
Monarch	*Danaus plexippus*
Northern Cloudywing	*Thorybes pylades*
Ocola skipper	*Panoquina ocola*
Palmetto skipper	*Euphyes arpa*
Phaon crescent	*Phyciades phaon*
Pipevine swallowtail	*Battus philenor*

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Queen	*Danaus gilippus*
Red-banded hairstreak	*Calycopis cecrops*
Sleepy orange	*Abaeis nicippe*
Spicebush Swallowtail	*Papilio troilus*
Southern Cloudywing	*Thorybes bathyllus*
Tawny-edged Skipper	*Polites themistocles*
Twin-spot skipper	*Oligoria maculata*
Whirlabout	*Polites vibex*
Palamedes swallowtail	*Papilio palamedes*
Zarucco Duskywing	*Erynnis zarucco*
Zebra	*Heliconius charitonius*
Zebra swallowtail	*Eurytides marcellus*

Table 12. Exotic Fauna Identified as Having Potential Habitat on the BFWEA

Common name	Scientific name
Mammals	
Coyote*	*Canis latrans*
Nine-banded armadillo*	*Dasypus novemcintus*
Wild hog	*Sus scrofa*
Birds	
European Starling	*Sturnus vulgaris*
Rock dove	*Columba livia*

* Native to North America

Management Intent

As noted above, the BFWEA is managed by FWC as a Wildlife and Environmental Area in conformance with the original purposes for acquisition in order to ensure the conservation of fish and wildlife resources, other natural and cultural resources, and to provide for compatible fish and wildlife based public outdoor recreation. A key management goal at BFWEA is to maintain the nearly intact natural communities to continue to conserve habitat conditions beneficial to the gopher tortoise, Sherman's fox squirrel and other rare and imperiled upland species. Visitors can witness first-hand how a fire management program and the re-establishment of native trees and grasses work together to drive this important restoration and conservation effort.

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. 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.

In addition, FWC uses the Wildlife Conservation Prioritization and Recovery (WCPR) program to ensure management is having the desired effect on wildlife as another important component of FWC's comprehensive resource management approach to managing FWC-managed areas. The goal of WCPR is to provide assessment, recovery and planning support for FWC-managed areas to enhance management of focal species and recovery of imperiled species. The WCPR program objectives include prioritizing what 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 FWC manages. The WCPR strategy for the BFWEA was completed in 2013.

Conditions Affecting Intensity of Management

Resources described in this management prospectus indicate conditions affecting intensity of management. These include natural community types, topography and soils, surface and ground water conditions, extent of historic disturbance and already existing improvements. Environmentally sensitive areas, such as erosion-prone sites, important habitats and outstanding natural areas and wetlands shall be identified, appropriately managed and protected.

As discussed above, the FWC has conducted analysis of historic vegetation of natural community types at BFWEA to determine the appropriate desired future conditions through implementation of OBVM and the development of the BFWEA WCPR Strategy. Upland wildlife management will continue to concentrate on appropriate vegetative manipulations, primarily the application of prescribed fire, to achieve conditions acceptable to a broad range of wildlife species. Though largely unnecessary at present, if any elements of the area are determined to require ecological restoration of ground cover, control of invasive species and reforestation; resource management projects may be necessary to accomplish restoration objectives to attain the desired future condition. This is especially important for conservation of habitats and populations of imperiled or rare species. Landscape ecology is also important. Land use changes in the vicinity of a managed area may affect attainment of resource conservation goals for the area and effectiveness of necessary resource management projects.

Timetable for Implementing Management Provisions

An update to the BFWEA management plan is being developed by FWC describing the management goals and objectives, along with short-term (first 2 years) and long-term (3 - 10 years) completion timelines, necessary to implement future resource and operational management of BFWEA. The management plan will also establish the current and future

roles of cooperating entities including governmental agencies, non-governmental organizations and other stakeholders.

Long-range plans will stress ecosystem management and the protection and management of focal, species of special concern, rare and imperiled species. Historic analysis of natural communities and vegetation types may be conducted if deemed necessary. Quantified vegetation management objectives will be developed. The FWC will continue to assess the condition of wildlife resources and provide planning support to enhance management of focal species and recovery of imperiled species on the BFWEA. Use of prescribed fire and other essential resource management activities have been implemented to maintain and restore natural communities and vegetation types to benefit native wildlife resources.

Estimate of Revenue-Generating Potential

The revenue generating potential of the BFWEA will depend upon future uses to be approved in the management plan. However, revenue from BFWEA may include sales of various permits and recreational user fees and ecotourism activities, if such projects could be economically developed. Additional revenue may be generated from potential timber sales and apiary leases. The annual area regulations can be consulted to clarify the necessary and required permits, fees, and regulations. The long-term values of ecosystem services to local and regional land and water resources, and to human health, are expected to continue to be significant. The legislature appropriates funds for land management.

Visitation and Economic Benefits

Authorized recreational uses are managed consistent with the purposes of acquisition of the BFWEA that include preserving the conservation and ecological integrity of the area while managing for low intensity, multiple-uses, thereby providing recreational opportunities for Florida's citizens and visitors. An FWC economic analysis, based on a current daily recreational carrying capacity of 60 individuals, was conducted. Although it should be noted that the current visitation rates on the area are estimated to be much lower than the area's established recreational carrying capacity. However, if this carrying capacity were achieved, a maximum total of 21,900 visitors per year could be expected. The FWC economic analysis indicates that this increased visitation level would generate an estimated annual economic benefit of $4,279,041, which would aid in the creation or support of an estimated 44 jobs.

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

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

Recommendations as to Other Governmental Agency Involvement

FWC will cooperate with other state and local governmental agencies including Duval and Clay counties, FDACS, FDEP, and the SJRWMD, in the continuing management of the BFWEA.

Estimate of Costs

Following is an estimate nf costs to optimally operate and manage the BFWEA under the BFWEA Management Plan. Optimal management of the BFWEA would require one full-time equivalent (FTE) position. Salary requirements for this FTE position, as well as those of other needed FWC staff, and costs to operate and manage the BFWEA are reflected in the cost estimates below. All land management funding is dependent upon annual legislative appropriations.

Branan Field WEA Management Plan Cost Estimate

Maximum expected one year expenditure

Resource Management	Expenditure	Priority
Exotic Species Control	$782	(1)
Prescribed Burning	$8,546	(1)
Cultural Resource Management	$301	(1)
Timber Management	$902	(1)
Hydrological Management	$2,559	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$16,157	(1)
Subtotal	**$29,196**	
Administration		
General administration	**$1,032**	(1)
Support		
Land Management Planning	$7,332	(1)
Land Management Reviews	$3,438	(3)
Training/Staff Development	$902	(1)
Vehicle Purchase	$4,216	(2)
Vehicle Operation and Maintenance	$3,512	(1)
Other (Technical Reports, Data Management, etc.)	$3,959	(1)
Subtotal	**$23,058**	
Capital Improvements		
New Facility Construction	$29,606	(2)
Facility Maintenance	$5,004	(1)
Subtotal	**$34,609**	
Visitor Services/Recreation		
Info./Education/Operations	**$6,127**	(1)
Law Enforcement		
Resource protection	**$353**	(1)
Total	**$94,375**	*

Priority schedule:

Bold	**(1) Immediate (annual)**
Normal	(2) Intermediate (3-4 years)
Italic	*(3) Other (5+ years)*

* Based on the characteristics and requirements of this area, 1 FTE position would be optimal to fully manage this area
All land management funding is dependent upon annual legislative appropriations.

Branan Field WEA Management Plan Cost Estimate

Ten-year projection

Resource Management	Expenditure	Priority
Exotic Species Control	$6,430	(1)
Prescribed Burning	$75,090	(1)
Cultural Resource Management	$2,642	(1)
Timber Management	$7,925	(1)
Hydrological Management	$22,479	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$141,954	(1)
Subtotal	**$256,520**	
Administration		
General administration	**$9,072**	(1)
Support		
Land Management Planning	$64,423	(1)
Land Management Reviews	$9,840	(3)
Training/Staff Development	$7,925	(1)
Vehicle Purchase	$14,833	(2)
Vehicle Operation and Maintenance	$30,853	(1)
Other (Technical Reports, Data Management, etc.)	$32,149	(1)
Subtotal	**$160,024**	
Capital Improvements		
New Facility Construction	$85,516	(2)
Facility Maintenance	$43,962	(1)
Subtotal	**$129,478**	
Visitor Services/Recreation		
Info./Education/Operations	**$53,831**	(1)
Law Enforcement		
Resource protection	**$3,098**	(1)
Total	**$612,023**	*

Priority schedule:

Bold	**(1) Immediate (annual)**
Normal	(2) Intermediate (3-4 years)
Italic	*(3) Other (5+ years)*

* Based on the characteristics and requirements of this area, 1 FTE position would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

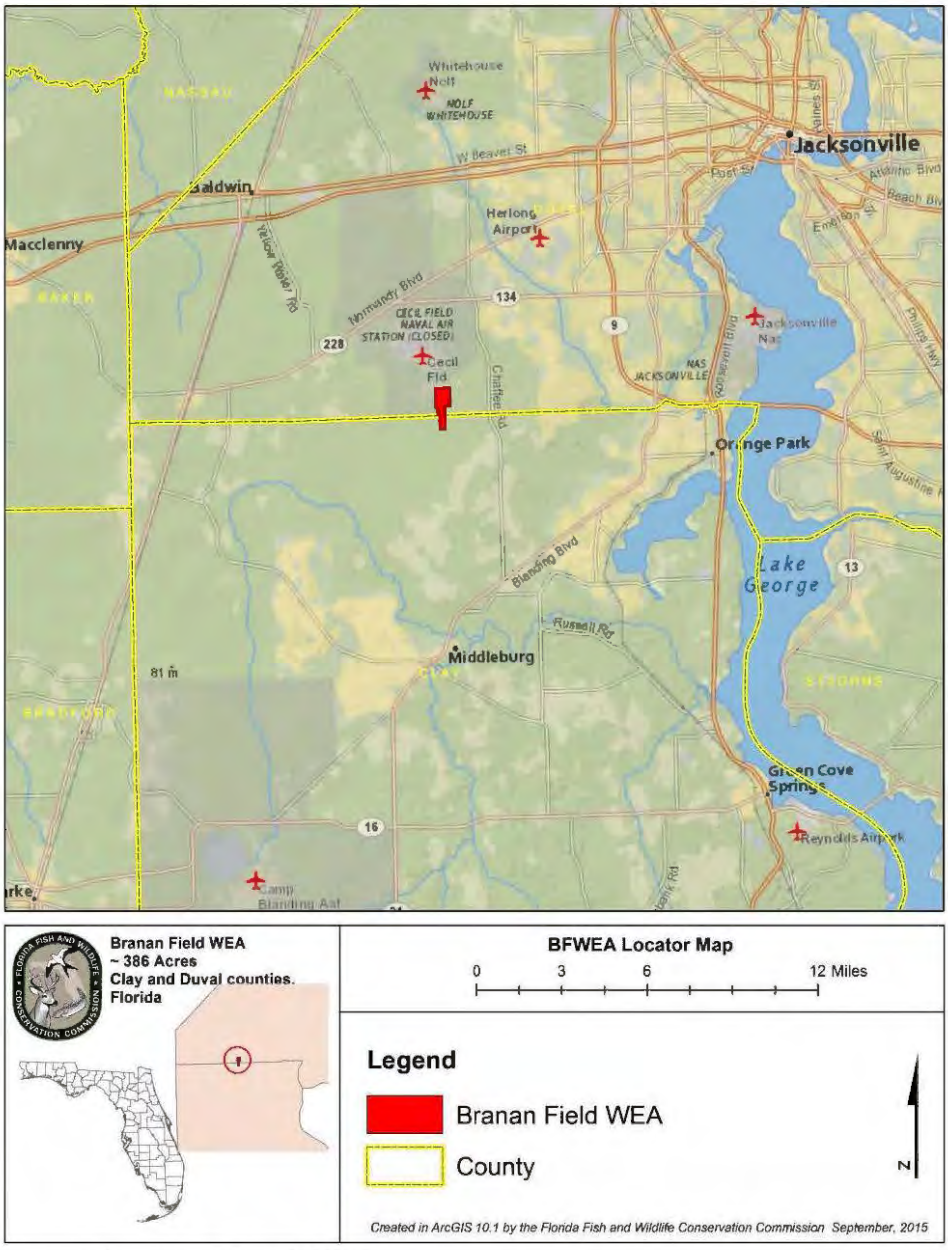

Figure 1. Location Map of BFWEA

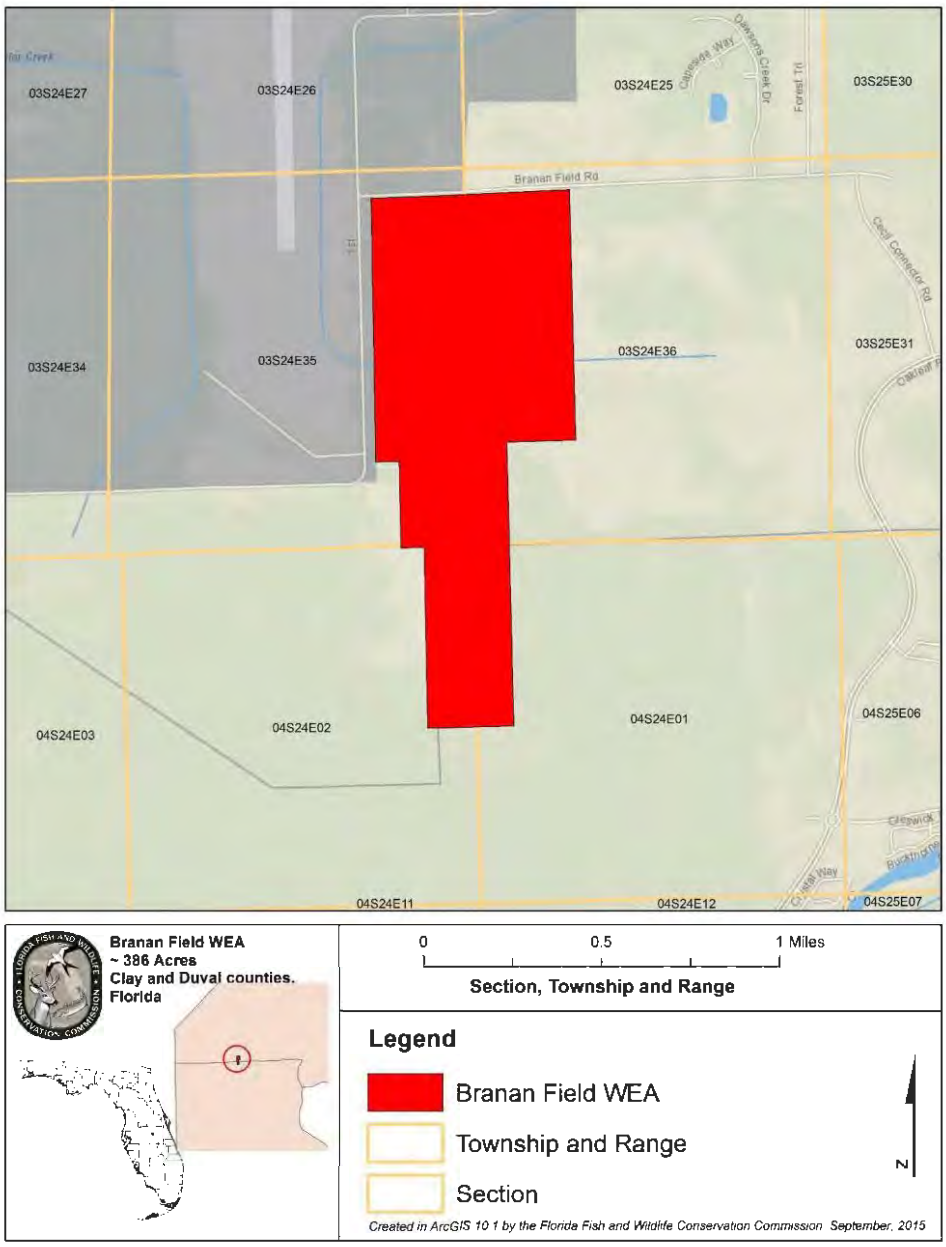

Figure 2. BFWEA Township and Range

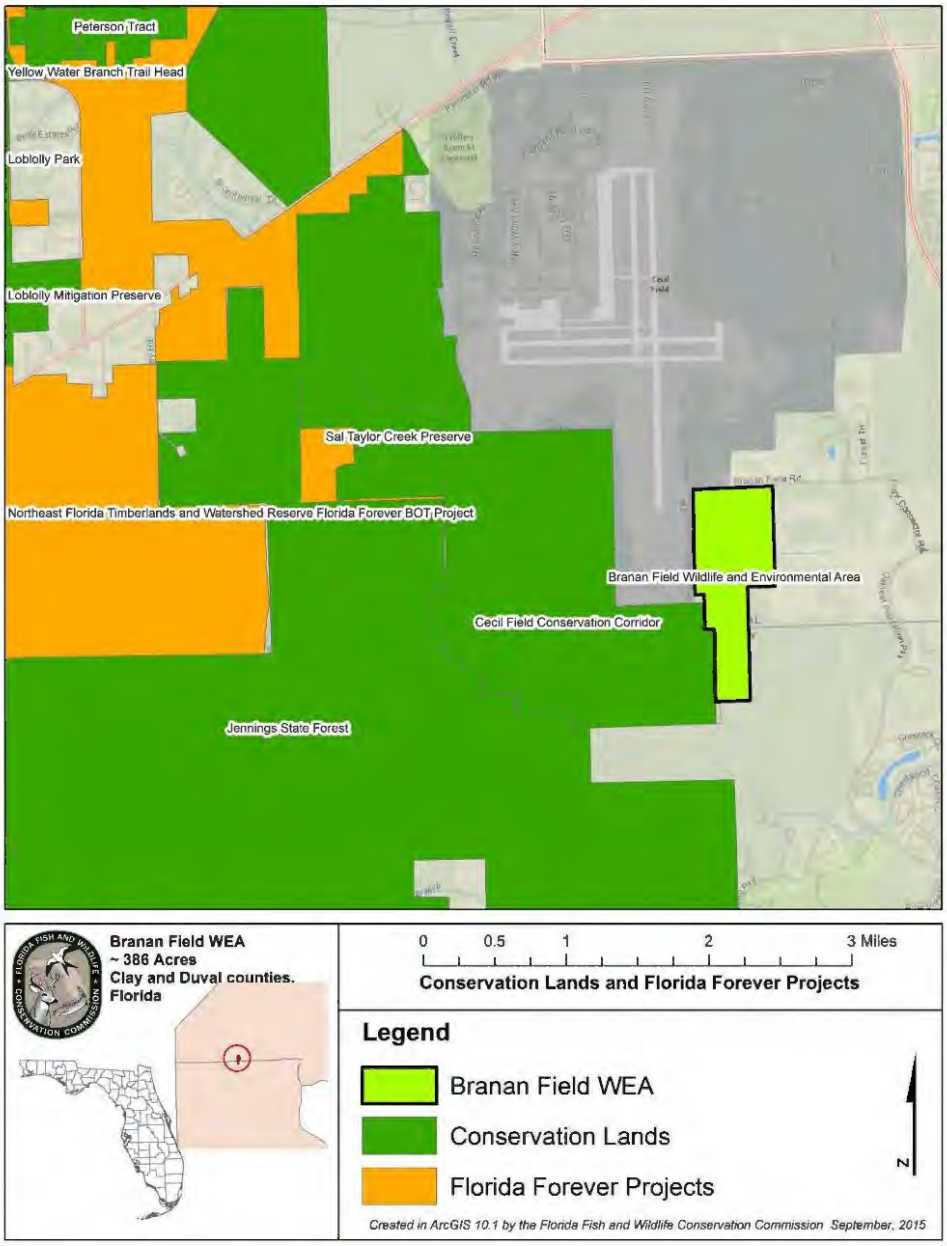

Figure 3. Proximate Conservation Lands and Florida Forever Projects

29

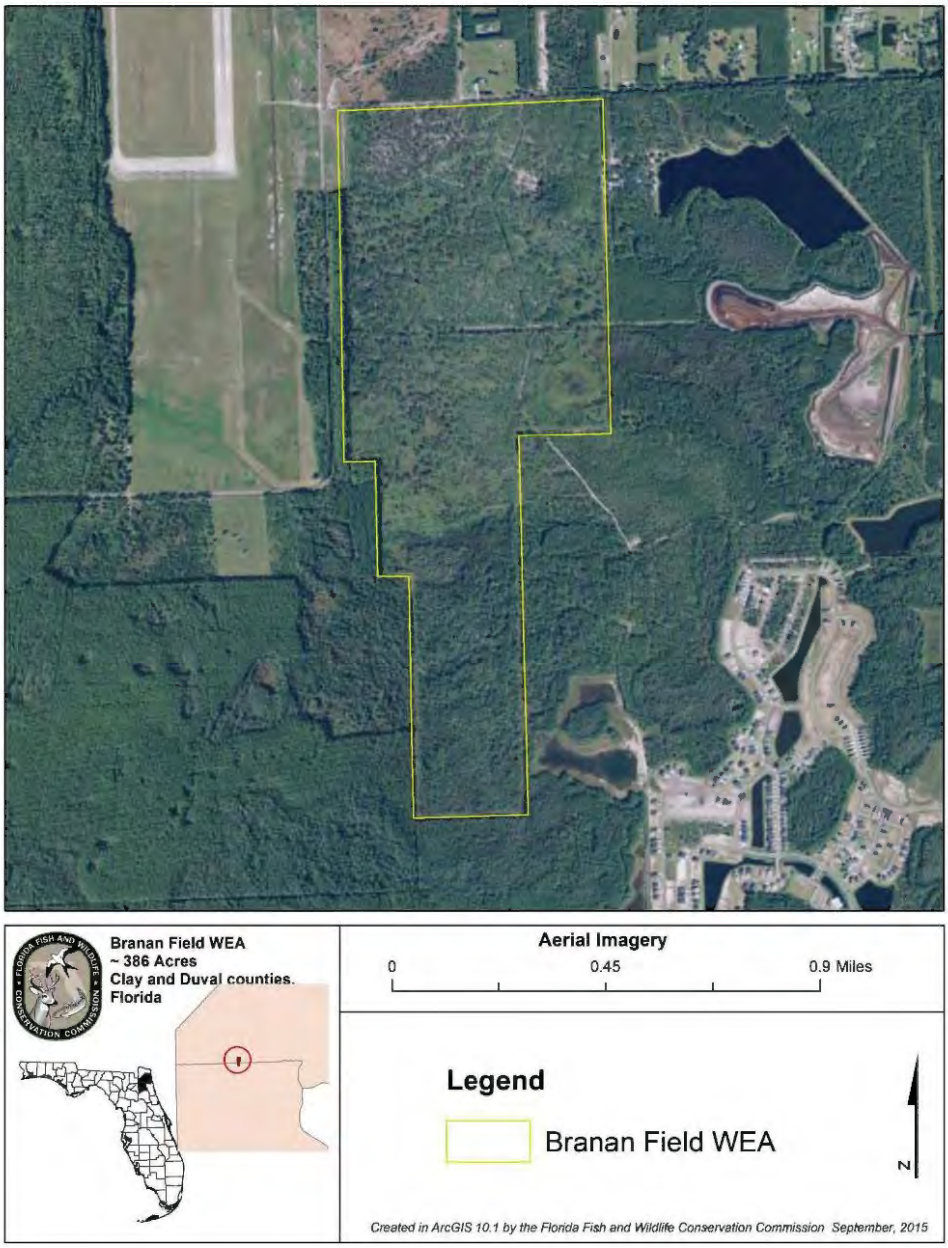

Figure 4. Aerial Image of BFWEA

30

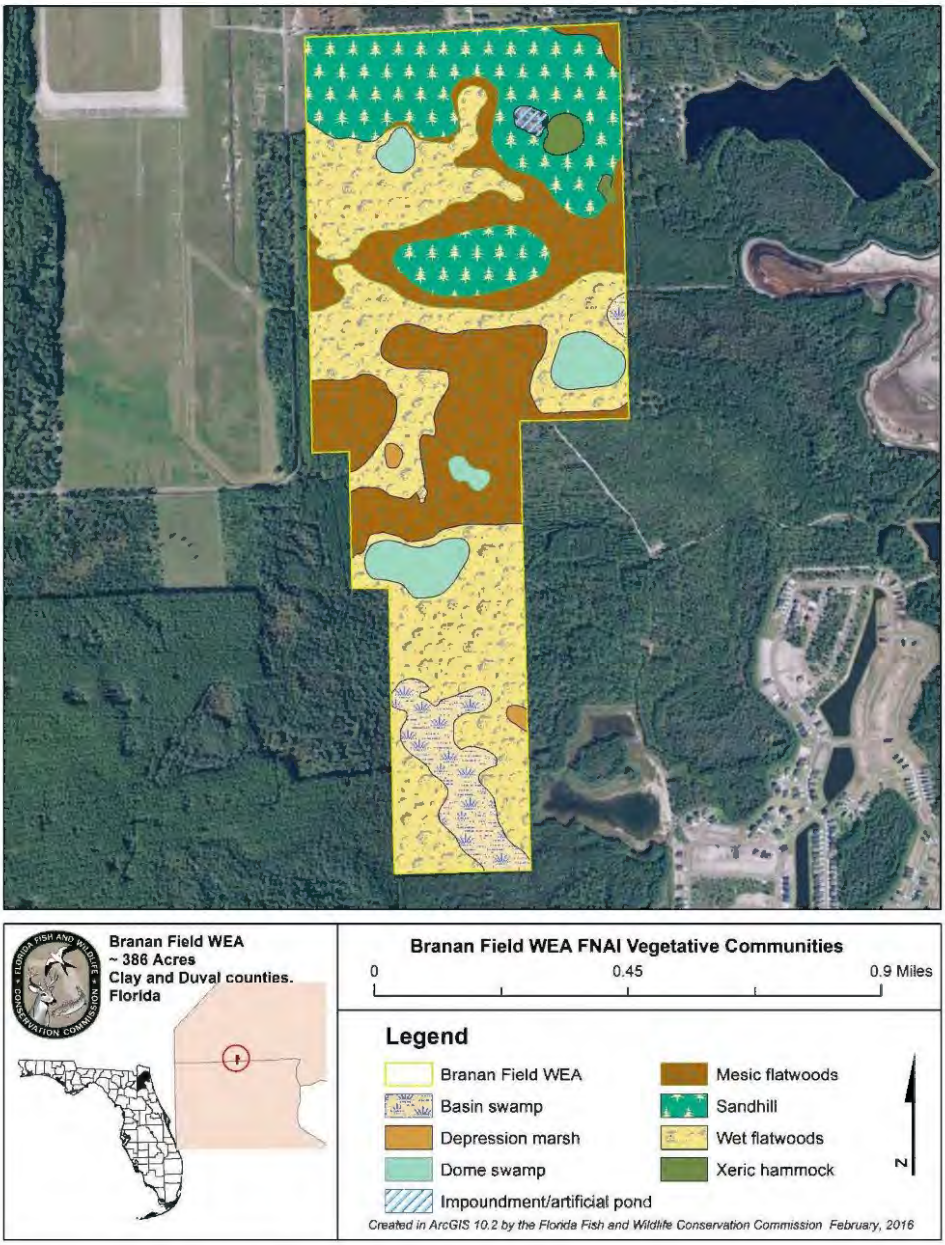

Figure 5. FNAI Natural Communities of BFWEA

31

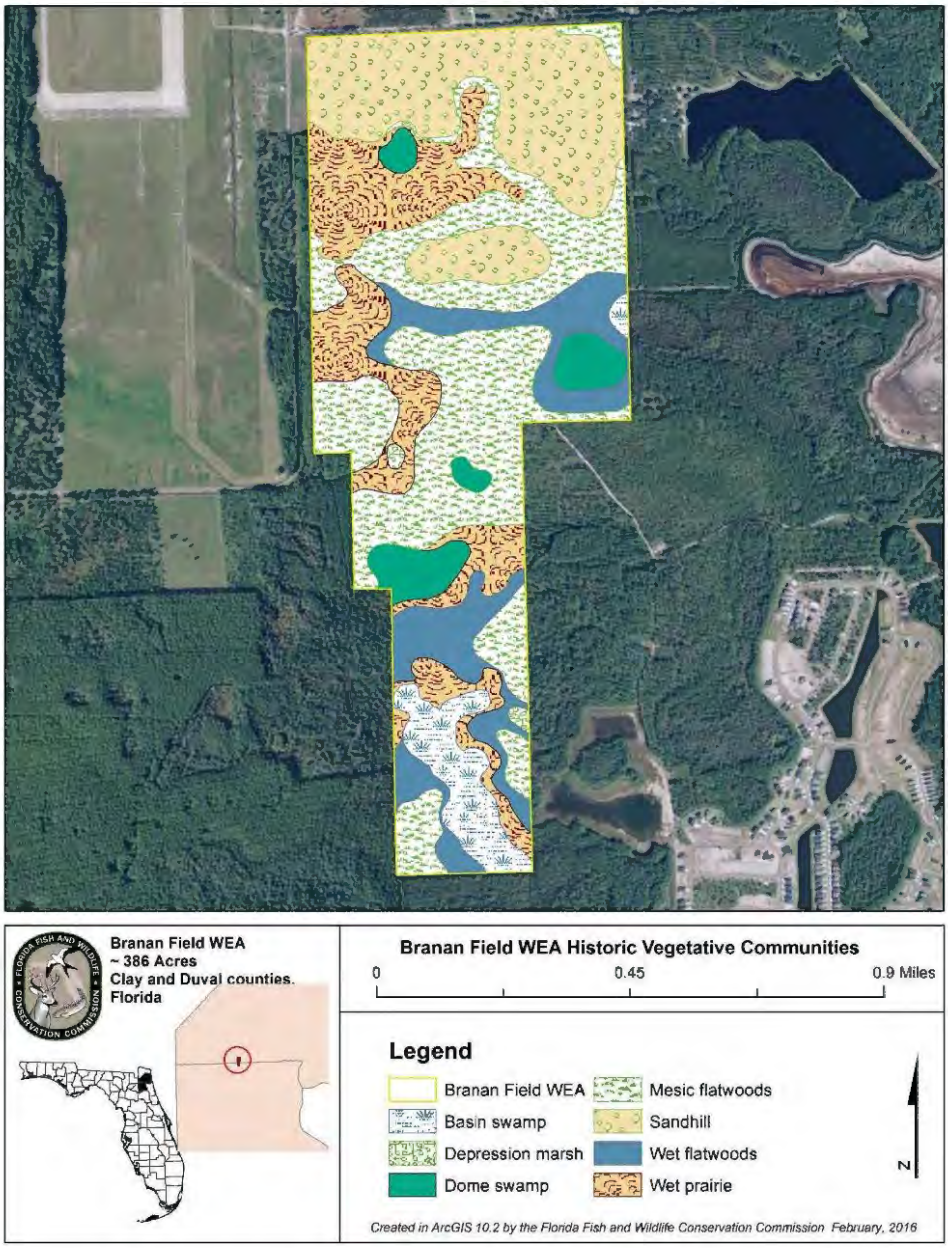

Figure 6. FNAI Historic Natural Communities of BFWEA

32

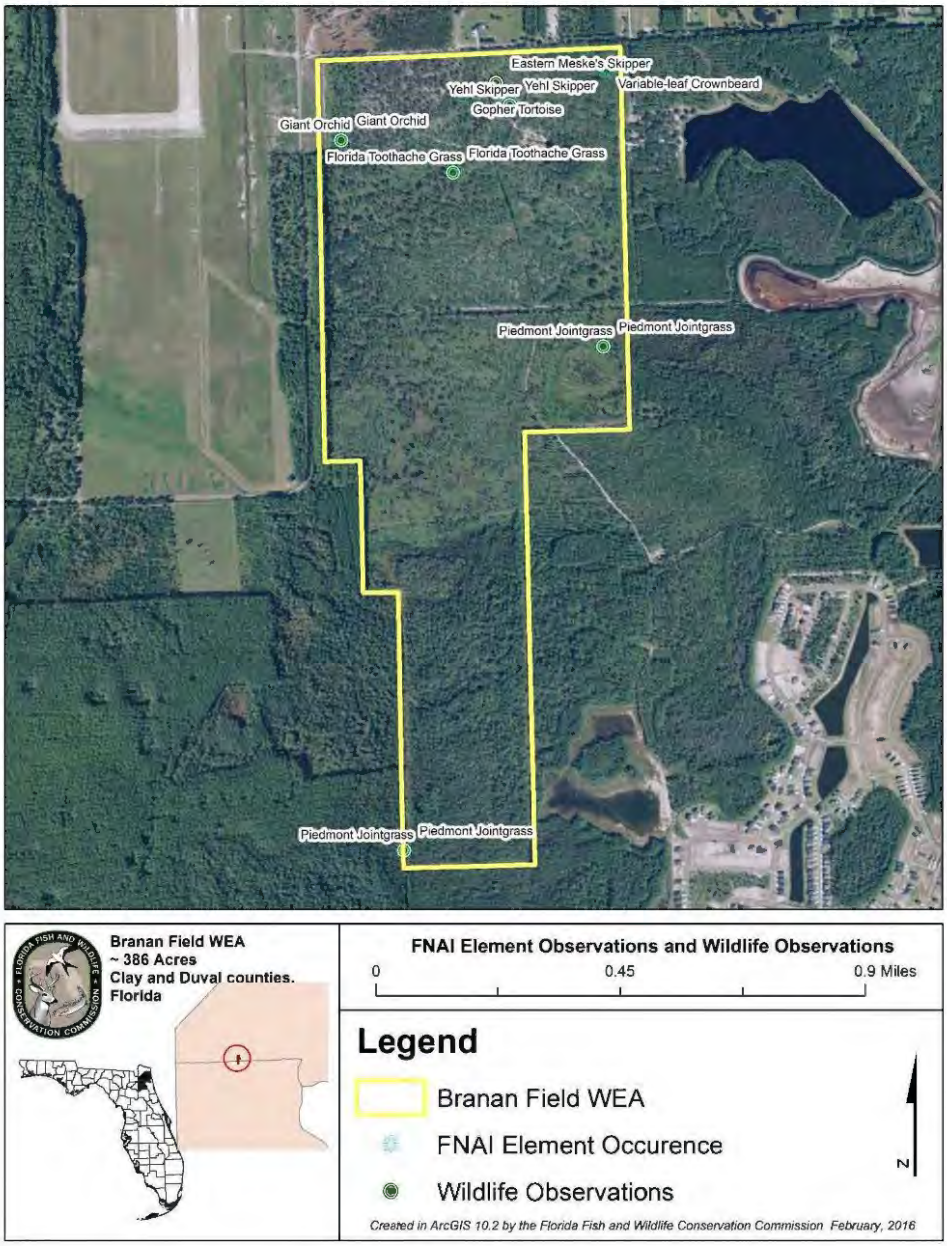

Figure 7. FNAI Element Occurrences on BFWEA

33

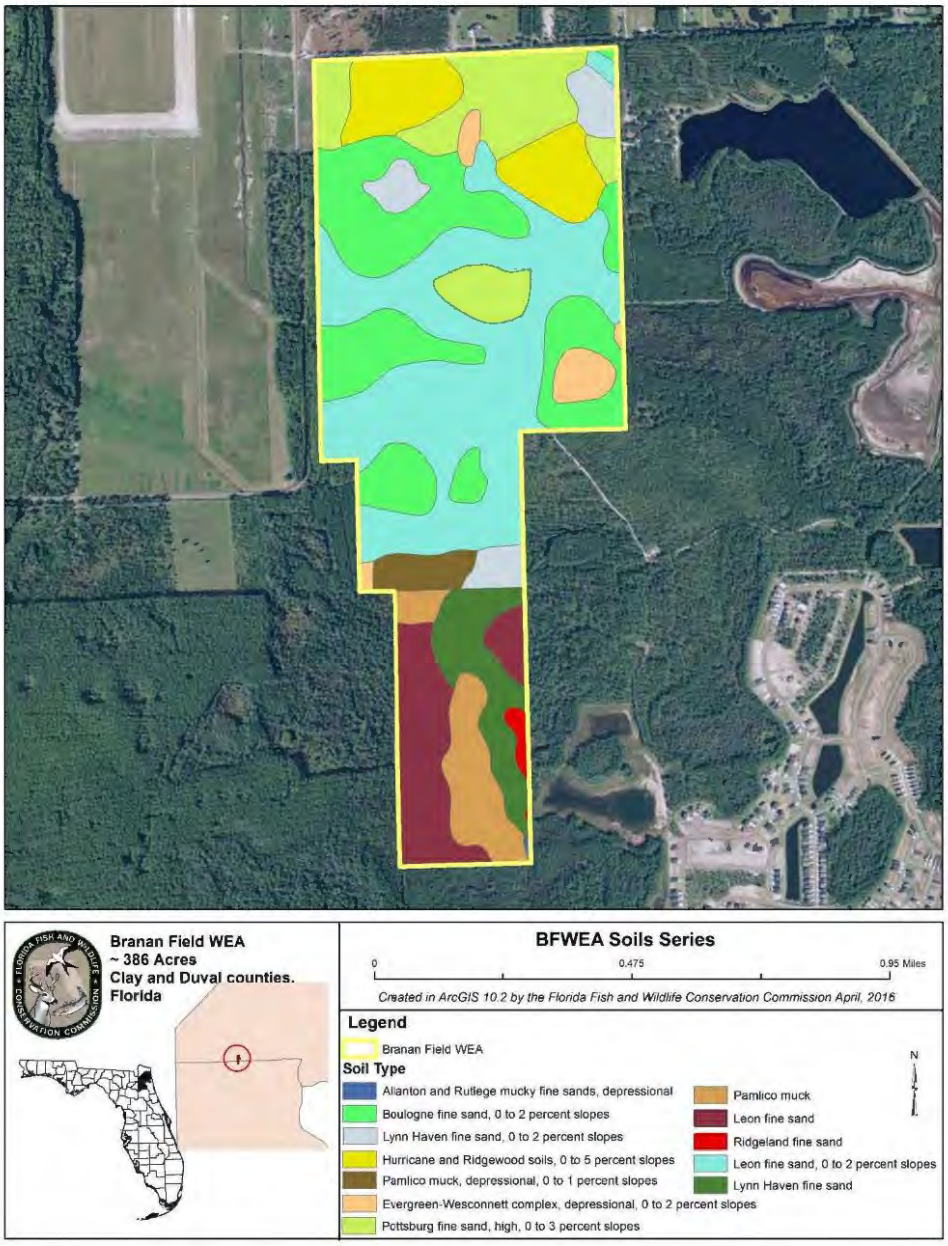

Figure 8. BFWEA Soils

34

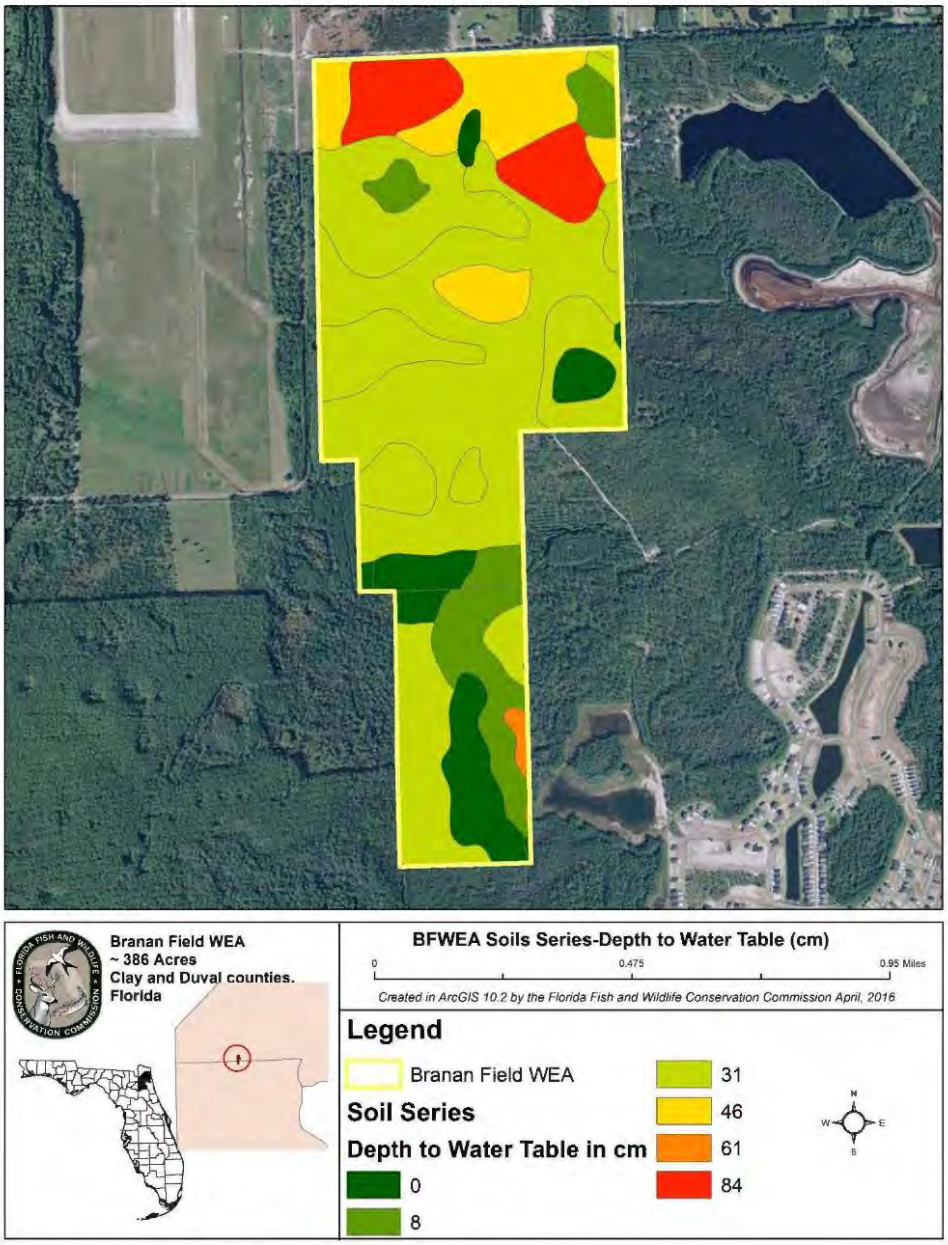

Figure 9. BFWEA Soils – Depth to Water Table

35

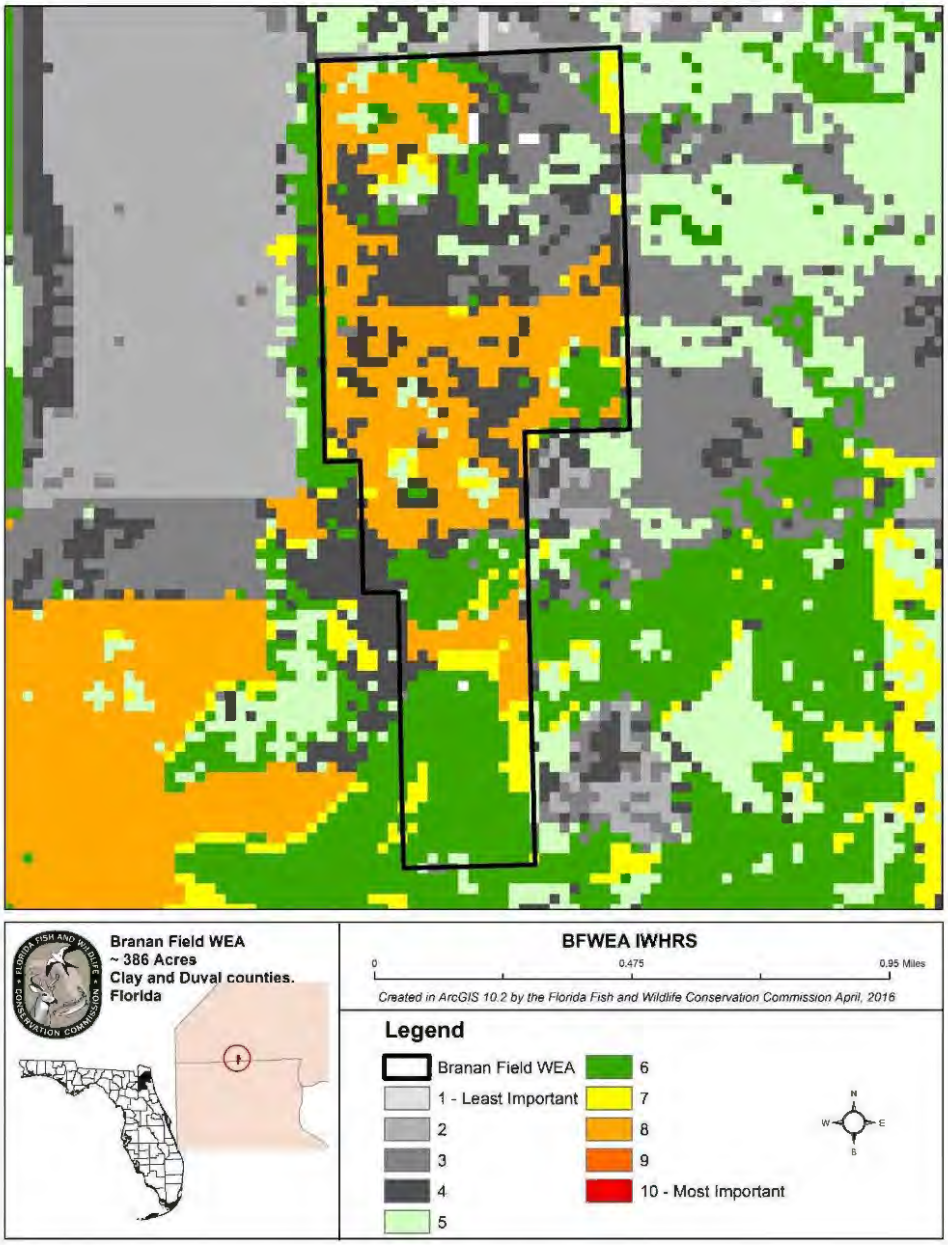

Figure 10. FWC Integrated Wildlife Habitat Ranking System 2009

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12.3.5 Public Hearing Report

PUBLIC HEARING REPORT

FOR THE

BRANAN FIELD WILDLIFE AND ENVRIOMENTAL AREA MANAGEMENT PLAN

HELD BY THE

BRANAN FIELD WILDLIFE AND ENVIRONMENTAL AREA MANAGEMENT ADVISORY GROUP AND THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

MAY 12th, 2016 –DUVAL AND CLAY COUNTIES, FLORIDA

The following report documents the public input that was received at the Branan Field Wildlife and Environmental Area (BFWEA) Management Advisory Group's (MAG) Public Hearing for the update to the Management Plan for BFWEA that was held at 7:00-9:00 P.M., on May 12th, 2016, at the Duval County Cecil Recreation Complex in Jacksonville, Florida.

Branan Field Wildlife and Environmental Area Management Advisory Group Introduction:
The meeting was introduced by Ms. Carolyn Morgan, a BFWEA MAG participant, who represented the Clay County Planning Department. Ms. Carolyn Morgan indicated that she was one of eight stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated BFWEA MAG meeting held on April 6th, 2016. Ms. Carolyn Morgan stated that the BFWEA Draft Management Plan was being presented tonight by FWC staff, and that hardcopies of the draft plan and the BFWEA MAG meeting report were available at the front door for the public's review. Ms. Carolyn Morgan thanked everyone for attending and then introduced FWC staff Mr. Gary Cochran, Land Conservation and Planning Administrator, FWC, to facilitate and coordinate the presentation of an overview of BFWEA; FWC's planning process, and the draft components of the BFWEA Draft Management Plan.

Presentation on an Overview of Branan Field Wildlife and Environmental Area and the FWC Planning Process: Mr. Gary Cochran welcomed everyone and thanked the public for their attendance. Mr. Gary Cochran then went over an orientation of the material and explained that the purpose of the public hearing was to solicit public input regarding the Draft Management Plan for BFWEA, and not hunting and fishing

regulations, indicating there is a separate public input process for FWC rule and regulation development. Mr. Gary Cochran then described the materials that were available at the door for public review, including the BFWEA Draft Management Plan and the MAG Meeting Report and Accomplishment Report. Mr. Gary Cochran then presented the agenda for the Public Hearing and facilitated the introduction of all FWC staff in attendance to the audience. Ms. Rebecca Shelton, Conservation Planner, then presented an overview and orientation of BFWEA, including a description of the natural communities, data about BFWEA visitors, revenue and economic benefits generated for the state and region by the area, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever Program Land Acquisition Projects, acquisition history, etc. She also explained FWC's planning process for the management of the public conservation land and asked if there were any questions regarding that process.

Questions, Answers and Discussion on the Branan Field Wildlife and Environmental Area Overview and FWC's Planning Process: Ms. Rebecca Shelton facilitated an informal question and answers session where members of the public in attendance, without necessarily identifying themselves, could ask questions of the FWC staff, and discuss the answers. Ms. Rebecca Shelton again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the Draft Management Plan for BFWEA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, FWC has a separate process for input on hunting and fishing regulations.

No further question or comments were received at this stage of the BFWEA public hearing meeting.

Presentation of the Branan Field Wildlife and Environmental Area Draft Management Plan

At this point, Mr. Nathan Lambert, the BFWEA Area Biologist/Manager began the presentation of the BFWEA Draft Management Plan. Mr. Nathan Lambert, then completed and concluded the presentation of the BFWEA Draft Management Plan.

Questions and Comments on the Branan Field Wildlife and Environmental Area Draft Management Plan Presentation

Mr. Nathan Lambert asked if there were any comments or questions from the public regarding the Plan and encouraged everyone to fill out a speaker card for public testimony. He informed them that all comments, questions, and public testimony will be duly considered equally by FWC.

No further question or comments were received at this stage of the BFWEA public hearing meeting.

Public Testimony on the Branan Field Wildlife and Environmental Area Draft Management Plan: No members of the public audience submitted speaker card(s) indicating their intention to provide formal public testimony. Mr. Gary Cochran again emphasized that the public hearing was for taking input regarding the BFWEA Draft Management Plan, and again asked if anyone would like to provide public testimony or comments.

No other speakers offered further comments.

Adjournment: Mr. Gary Cochran asked once again if there were any other members of the public that wished to give public testimony and none were requested or offered. Then, Mr. Gary Cochran declared the public hearing adjourned.

12.4 Soil Series Descriptions

Map Unit Description

Clay County, Florida

[Minor map unit components are excluded from this report]

Map unit: 9 - Leon fine sand

Component: Leon, non-hydric (75%)

The Leon, non-hydric component makes up 75 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R154XY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Leon, hydric (10%)

The Leon, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R154XY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 11 - Allanton and Rutlege mucky fine sands, depressional

Component: Allanton (45%)

The Allanton component makes up 45 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Rutlege (35%)

The Rutlege component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 27 - Pamlico muck

Component: Pamlico (80%)

The Pamlico component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon

Map Unit Description

Clay County, Florida

Map unit: 27 - Pamlico muck

Component: Pamlico (80%)

within 30 inches of the soil surface.

Map unit: 59 - Lynn Haven fine sand

Component: Lynn Haven (80%)

The Lynn Haven component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY004FL North Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 60 - Ridgeland fine sand

Component: Ridgeland (80%)

The Ridgeland component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map Unit Description

Duval County, Florida

Map unit: 14 - Boulogne fine sand, 0 to 2 percent slopes

Component: Boulogne (95%)

The Boulogne component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 22 - Evergreen-Wesconnett complex, depressional, 0 to 2 percent slopes

Component: Evergreen (63%)

The Evergreen component makes up 63 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Wesconnett (33%)

The Wesconnett component makes up 33 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 24 - Hurricane and Ridgewood soils, 0 to 5 percent slopes

Component: Hurricane (53%)

The Hurricane component makes up 53 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains, rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Ridgewood (35%)

The Ridgewood component makes up 35 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map Unit Description

Duval County, Florida

Map unit: 32 - Leon fine sand, 0 to 2 percent slopes

Component: Leon (92%)

The Leon component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 35 - Lynn Haven fine sand, 0 to 2 percent slopes

Component: Lynn Haven (92%)

The Lynn Haven component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 49 - Pamlico muck, depressional, 0 to 1 percent slopes

Component: Pamlico (91%)

The Pamlico component makes up 91 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 58 - Pottsburg fine sand, high, 0 to 3 percent slopes

Component: Pottsburg, high (93%)

The Pottsburg, high component makes up 93 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

12.5 FNAI Element Occurrence Data Usage Letter

FLORIDA
Natural Areas
INVENTORY

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

April 11, 2014

David Alden
Land Conservation & Planning
Florida Fish and Wildlife Conservation Commission
Tallahassee, FL

Dear David,

By virtue of this letter we are updating and continuing our agreement that it is unnecessary for your office to request FNAI element occurrence data for each land management plan you prepare, under the following conditions:

- FNAI will continue to provide our Florida Element Occurrence GIS database to FWC on a quarterly update basis;
- The FNAI GIS data will be available to FWC staff for reference and incorporation as required in management plan review and preparation.

Our database manager, Frank Price, currently provides this update via ftp to FWC staff on a quarterly basis. Current FWC contacts for the quarterly update are Beth Stys and Ted Hoehn. We are pleased to continue this beneficial collaboration with the Florida Fish and Wildlife Conservation Commission.

Sincerely,

Gary Knight

Gary Knight
Director
Florida Natural Areas Inventory

Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Tracking Florida's Biodiversity

12.6 FWC Agency Strategic Plan

Florida Fish and Wildlife Conservation Commission
Agency Strategic Plan
2014 – 2019

Theme One – Florida's Fish and Wildlife Populations and Their Habitats

Goal 1: Ensure the sustainability of Florida's fish and wildlife populations.

Strategies:

1. Manage listed species so they no longer meet Florida's endangered and threatened listing criteria.
2. Manage species to keep them from meeting Florida's endangered and threatened listing criteria.
3. Anticipate and address fish and wildlife species' conservation needs in light of adaptation to long-term environmental changes.
4. Develop, acquire and apply the appropriate biological and sociological science to inform fish and wildlife conservation decisions.
5. Inform and guide partners regarding how their regulations, policies, procedures and other actions affect fish and wildlife conservation.
6. Protect fish and wildlife species through effective outreach and enforcement.

Goal 2: Ensure sufficient habitats exist to support healthy and diverse fish and wildlife populations.

Strategies:

1. Use science to determine quantity, quality and location of the habitats most critical to sustain healthy and diverse fish and wildlife populations.
2. Protect lands and waters critical to sustaining healthy and diverse fish and wildlife populations through diverse incentive programs.
3. Manage habitats to sustain healthy and diverse fish and wildlife populations.

Theme Two – Interactions with Fish and Wildlife, including Fishing, Hunting, Boating and Wildlife Viewing Opportunities

Goal 1: Provide residents and visitors with quality fishing, hunting, boating and wildlife viewing opportunities that meet their needs and expectations while providing for the sustainability of those natural resources.

Strategies:

1. Develop, acquire and use the appropriate biological and sociological science necessary to provide sustainable fishing, hunting, boating and wildlife viewing opportunities that meet the needs and expectations of user groups while providing for the sustainability of those resources.

2. Manage fish and wildlife populations to provide sustainable fishing, hunting, and wildlife viewing opportunities.

3. Develop and maintain widely available, diverse and accessible fishing, hunting, boating and wildlife viewing opportunities that meet the needs and expectations of residents and visitors while providing for the sustainability of those resources and emphasizing partnerships with both public and private landowners.

4. Recruit and manage sustainable levels of resident and visitor participation in fishing, hunting, boating and wildlife viewing.

5. Provide targeted fishing, hunting, boating and wildlife viewing programs for youth, the disabled and veterans.

Goal 2: Enhance the safety and outdoor experience of those who hunt, fish, boat and view wildlife.

Strategies:

1. Provide and promote opportunities for residents, and visitors to learn safety practices for fishing, hunting, boating and wildlife viewing.

2. Enhance the boating safety and waterway experience of residents and visitors through improved access, management, education and enforcement.

3. Promote Florida's outdoor environment as a safe and healthy recreational option for residents and visitors.

4. Address the growing disconnect between people and nature by marketing and providing opportunities and education for diverse age, race, gender, ethnic and other demographic sectors.

Goal 3: Use minimal regulations to manage sustainable fish and wildlife populations, manage access to fish and wildlife resources, and protect public safety.

Strategies:

1. Continually evaluate proposed and existing regulations, based on resource management benefits, public safety concerns, and economic and social impacts, to improve or eliminate regulations as warranted.

2. Coordinate with partners and stakeholders to ensure that appropriate authorities and regulations exist to maintain sustainable fish and wildlife populations.

3. Implement and enforce regulations in an informative, proactive and influential manner to enrich resident and visitors' outdoor experience while safeguarding the natural resources.

Goal 4: Minimize adverse environmental, social, economic and health and safety impacts from fish, wildlife and plants that are known, or have a potential, to cause adverse impacts.

Strategies:

1. Manage species and their habitats, as well as species and human interactions, to eliminate or reduce the adverse environmental, social, economic and health and safety impacts from native and non-native fish, wildlife and plants.

2. Effectively communicate to residents, visitors and businesses how to be safe and act responsibly when interacting with or possessing fish, wildlife and plants.

3. Manage captive and non-native wildlife movement and trade through proactive and responsive enforcement, regulation and education, with an emphasis on species that pose a high risk to our native fish and wildlife.

4. Enhance partnerships to address adverse environmental, social, economic and health and safety impacts from fish, wildlife and plants and ensure a consistent and integrated approach with FWC.

Theme Three – Sharing Responsibility for Fish and Wildlife Conservation and Management with an emphasis on developing conservation values in our youth

Goal 1: Ensure current and future generations support fish and wildlife conservation.

Strategies:

1. Expand and promote the Florida Youth Conservation Centers Network through leveraging FWC programs and staff, and developing public and private partnerships and sponsorships.

2. Develop and deliver standardized youth conservation curricula and fishing, hunting, boating and wildlife viewing outdoor activity programs, and assist with adapting programs and curricula to meet the needs of diverse communities.

3. Foster stewardship and shared responsibility for fish and wildlife conservation through conservation education programs.

4. Expand marketing and outreach to reach diverse audiences and engage all staff in priority outreach initiatives.

Goal 2: Ensure residents, visitors, stakeholders and partners are engaged in the processes of developing and implementing conservation programs.

Strategies:

1. Foster a common vision among partners and the FWC to maintain and enhance fish and wildlife populations and their habitats through interagency coordination, mutually beneficial goals and initiatives.

2. Engage residents, visitors, stakeholders and partners to understand their perspectives, develop and implement conservation programs, and implement fishing, hunting, boating and wildlife viewing management activities.

3. Use citizen science to enhance conservation programs.

Goal 3: Increase opportunities for residents and visitors, especially youth, to actively support and practice fish and wildlife conservation stewardship.

Strategies:

1. Inform residents and visitors about conservation stewardship and encourage their active involvement in achieving conservation of fish and wildlife.

2. Provide and promote opportunities for residents and visitors, especially youth, to participate in conservation stewardship activities, including FWC volunteer opportunities.

Goal 4: Encourage communities to conserve lands and waters critical to sustaining healthy and diverse fish and wildlife populations.

Strategies:

1. Provide communities with the necessary assistance to help them obtain the social and economic benefits of local conservation lands.

2. Provide residents and visitors with relevant information on the social and economic benefits of conservation, fishing, hunting, boating, and wildlife viewing.

3. Support community events and programs that promote fish and wildlife conservation.

Theme Four – Responsive Organization and Quality Operations

Goal 1: Integrate our commitment to benefit the community and enhance the economy through our conservation efforts and public service.

Strategies:

1. Identify and implement ways to support Florida businesses and job growth while managing fish and wildlife.

2. Identify and promote opportunities for staff to benefit local communities through participation in approved activities where FWC resources can be used (for example, the Florida State Employees' Charitable Campaign, the Guardian ad Litem Program, mentoring programs, FWC Disaster Response Teams, and American Red Cross Disaster Services).

3. Provide residents and visitors with reliable and current information on Florida's fish and wildlife.

4. Continue to attract visitors by providing top-quality fishing, hunting, boating and wildlife viewing opportunities.

Goal 2: Provide resources and support for the safety and protection of residents and visitors, our natural and cultural resources, and for emergency responses to critical incidents and environmental disasters.

Strategies:

1. Identify existing and emerging risks to the safety of residents and visitors and foster internal collaboration and external partnerships necessary to effectively manage, reduce or eliminate those risks.

2. Provide immediate and effective disaster response and recovery through mutual-aid efforts with local, state and federal partners.

3. Provide search, rescue, and recovery services in coordination with local, state and federal entities to ensure the safety of residents and visitors.

4. Protect natural and cultural resources through proactive and responsive enforcement efforts.

Goal 3: Ensure the FWC has highly effective and adaptive business practices.

Strategies:

1. Address emerging biological, social and economic trends, anticipate impacts and take advantage of opportunities to accomplish FWC's mission.

2. Expect each employee to be an ambassador for FWC and its mission to Florida's diverse residents and visitors.

3. Provide efficient and effective service to Florida's diverse residents, visitors, and FWC staff.

4. Foster a diverse, accountable, responsive and skilled workforce who effectively serves Florida's residents and visitors.

5. Manage existing and secure additional resources necessary to achieve fish and wildlife conservation and meet residents, visitor and stakeholder needs.

6. Create and maintain an effective business model that supports the FWC's mission by using continuous improvement approaches that foster a collaborative and professional culture.

12.7 FWC Apiary Policy

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Apiary Policy

Division of Habitat and Species Conservation

Issued by:
Terrestrial Habitat Conservation and Restoration Section
9/1/2010

Enclosed is the HSC/THCR Apiary Policy for all Florida Fish and Wildlife Conservation Commission's Wildlife Management Areas and Wildlife and Environmental Areas.

1

DIVISION OF HABITAT AND SPECIES CONSERVATION POLICY

Issued September 2010

SUBJECT: APIARY SITES ON FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION WILDLIFE MANAGEMENT AREAS AND WILDLIFE AND ENVIRONMENTAL AREAS

STATEMENT OF PURPOSE: It is the intent of this policy to determine which Florida Fish and Wildlife Conservation Commission (FWC) Wildlife Management Areas or Wildlife and Environmental Areas (WMA/WEA) may have apiary sites, and provides direction on site location, management and administration of said apiaries.

Definitions

Apiary – A place where bees and beehives are kept, especially a place where bees are raised for their honey.

Apiary Site – An area set aside on a WMA/WEA for the purpose of allowing a beekeeper to locate beehives in exchange for a fee as established by contract between the beekeeper and FWC.

Apiary Wait List – An apiary wait list will be maintained by the Terrestrial Habitat Conservation and Restoration (THCR) Section Leader's Office based on applications received from interested beekeepers. Only qualified apiarists will be added to the list. To become qualified the new apiarist must submit an application form and meet the criteria below under the section titled "Apiary Wait List and Apiary Application."

Beekeeper/Apiarist – A person who keeps honey bees for the purposes of securing commodities such as honey, beeswax, pollen; pollinating fruits and vegetables; raising queens and bees for sale to other farmers and/or for purposes satisfying natural scientific curiosity.

Best Management Practices – The Florida Department of Agriculture & Consumer Services (FDACS; Division of Plant Industry (DPI), Apiary Inspection Section, P.O. Box 147100, Gainesville, FL 332614-1416) provides Best Management Practices (BMP) for maintaining European Honey Bee colonies and FWC expects apiarists to follow the BMP.

Hive/Colony – Means any Langstroth-type structure with movable frames intended for the housing of a bee colony. A hive typically consists of a high body hive box with cover, honey frames, brood chambers and a bottom board and may have smaller super hive boxes stacked on top for the excess honey storage. A hive/colony includes one queen, bees, combs, honey, pollen and brood and may have additional supers stacked on top of a high body hive box.

Establishment of Apiary Sites on WMA/WEA

During the development of an individual WMA/WEA Management Plan, apiaries will be considered under the multiple-use concept as a possible use to be allowed on the area. "Approved" uses are deemed to be in concert with the purposes for state acquisition, with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals, and objectives as expressed in the agency strategic plan and priorities documents. Items to consider when making this determination can also include:

- Were apiaries present on the area prior to acquisition?
- Are there suitable available sites on the WMA/WEA?
- Will the apiary assist in pollination of an onsite FWC or offsite (adjacent landowner) citrus grove or other agricultural operation?

For those WMA/WEAs that have not considered apiaries in their Management Plan, upon approval of this policy Regional Staff will work with the Conservation Acquisition and Planning (CAP) staff and THCR Section leadership to determine if apiaries are an approved use on the area. If apiaries are considered an approved use then a request will be made to the Division of State Lands to allow this use as part of an amended Management Plan. This request will be made through the THCR's Section Leader's office and coordinated by the CAP.

Determination of apiary site locations on WMA/WEAs should be done using the following guidelines:

- Apiary sites should be situated so as to be at least one-half mile from WMA/WEA property boundary lines, and at least one mile from any other known apiary site. Exceptions to this requirement must be reviewed by the Area Biologist and presented to the THCR Section Leader for approval.

- Site should be relatively level, fairly dry, and not be prone to flooding when bees would normally be present.

- Site should be accessible by roads which allow reasonable transfer of hives to the site by vehicle.

- If a site is to be located near human activity, such as, an agricultural field, food plot, wildlife opening, campsites, etc., or if the site may be manipulated by machinery at a time when bees would be present, then the apiary site should be located at a minimum of 150 to 200 yards from the edge of that activity. This will ensure minimal disturbance to the bees and minimize incidents with anyone working in the area.

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- It is preferable to have apiary sites located adjacent to or off roads whenever possible. If traditional apiary sites were located on roads and the Area Biologist determines that the site will not impact use of the road by visitors then it will be allowed.
- FWC Area Biologist shall select apiary site(s) and the site(s) selected should not require excessive vegetation clearing (numerous large trees, dense shrubs) or ground disturbance (including fill).

WMA/WEA Staff Responsibilities

Area Biologist on WMAs/WEAs with approved apiary sites will forward a GIS shapefile depicting all the apiary site polygon(s), including a name or number with coordinates for each apiary site, to the THCR Contract Manager.

Area Biologist will monitor each apiary site no less than once a year to determine if the beekeeper is abiding by the contract requirements. If violations are noted, staff should bring them to the attention of the beekeeper for correction. If violations continue staff should notify the THCR Contract Manager who will determine if or what additional action is warranted.

Area Biologist will establish and maintain firelines around the apiary site to ensure the apiary site is ready when a planned burn is scheduled.

Area Biologist will advise the beekeeper of burn plans, road work, gate closures, or other site conditions and management activities that may affect the beekeeper's ability to manage or access the apiary site.

Area Biologist is not responsible to ensure access roads are in condition suitable for beekeepers to access their hives with anything other than a four wheeled drive vehicle. (The site of the apiary may be high and dry, but the roads accessing them may be difficult to impossible to get a two wheeled drive vehicle into during extreme weather, e.g., heavy rainfall events.)

Apiary Wait List and Apiary Application

An electronic waiting list for apiary sites will be maintained by the THCR's Contract Manager for each WMA/WEA. To be placed on the waiting list an interested beekeeper must submit an apiary application form to the contract manager (See Enclosed Application Form). Each applicant will be considered based on the following criteria:

- Proof of a valid registration with the FDACS/DPI.
- Proof of payment of outstanding special inspection fees for existing sites.
- A validated history of being an apiary manager.
- Three references that can attest to the applicant's beekeeping experience.

If an apiary site is becomes available on a WMA/WEA and there are beekeepers on the waiting list interested in that particular area, those individuals meeting the criteria above will be given preference. If there is more than one beekeeper meeting the criteria with their name on the list then a random drawing will be held by the THCR Contract Manager to determine who will receive the site. Beekeepers on the waiting list will be notified in writing of the random drawing's date/location and will be invited to attend. The individual's name selected during this drawing will be awarded the contract.

Apiary agreements are non-transferable. Each agreement serves as a contract between a specific individual or company and FWC, and the rights and responsibilities covered by an individual agreement cannot be transferred.

Contracts

Apiary contracts are for five (5) years and renewals are contingent upon a satisfactory performance evaluation by Area Biologist and concurrence of the THCR Section Leader. Approval is based on apiarist performance, adherence to rules and regulations and general cooperation. If an Area Biologist decides an apiarist whose contract is expiring is unacceptable he may recommend not approving the new contract. If this transpires then the wait list process using random selection will be used. If there is no apiarist on a current wait list then the apiarists who are in good standing with existing contracts will be notified to see if any want to be put on the wait list for the drawing. If none are interested then the site will be put on hold pending a valid request.

Pricing of Apiary Site(s)

Cost of each apiary site will be $40 annually which will include up to 50 beehives. Additional beehives will be charged at the rate of $40 per 50 beehives.

Pricing examples:

- A beekeeper is leasing 2 apiary sites with up to 100 beehives - the fee per year is $80.
- A beekeeper is leasing 3 apiary sites with up to 200 beehives - the fee per year is $160.

Note: The maximum number of hives/colonies allowed on an apiary site will be at the discretion of the apiarist. However, the apiarist is strongly recommended to follow the BMP as recommended by the FDACS/DPI. In addition to providing the BMP, FDACS/DPI's management has recommended 50 hives per site in pineland communities and no more than 100 hives per site in areas with bountiful resources. However, FWC will not dictate the number of hives on a site unless they create land management issues.

Bear Depredation Control at Apiary Site(s)

Beekeepers are required to consult with the WMA/WEA Area Biologist to see if electric fencing is required for their apiary sites. If the Area Biologist requires electric fencing then the

Beekeeper shall construct and maintain electric fences for each apiary site. Numerous electric fence designs have been used to varying success and FWC as a courtesy provides an electric fence technical information bulletin with each Agreement. This bulletin is attached in order to assist the Beekeeper and/or provide a design that has been proven to be reasonable effective.

SUBJECT MATTER REFERENCES

Apiary Inspection Law - Chapter 586, Florida Statutes (see http://www.leg.state.fl.us/Statutes/), Rule Chapter 5B-54, Florida Administrative Code (see www.flrules.org).

The Board of Trustees of the Internal Improvement Trust Fund – Recommended Apiary Agreement Guidelines For Apiaries & Revisions to an Agreement for Apiary Activities on State Lands on September 23, 1986
S:\HSC\THCR\APIARY.BACKUP.POLICY\dlissupport@dos.state.fl.us_20100903_111446.pdf

Senate Resolution 580, September 21, 2006: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:sr580ats.txt.pdf

Attachments

Sample Apiary Agreement W/Attachments (Map Placeholder & Electric Fence Bulletin)

Sample Apiary Site Application Form W/Mission Statement

Best Management Practices for Maintaining European Honey Bee Colonies

Sample of Random Selection Process Procedure

APPROVED:

_____

Division Director or Designee

DATE: _____

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APIARY AGREEMENT

AGREEMENT FOR APIARY ACTIVITIES ON STATE LANDS

THIS AGREEMENT is made by and between the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600, hereinafter known as "the COMMISSION," and (Insert Name and Address of Apiarist Here), telephone number (Insert Phone Number of Apiarist Here), hereinafter known as "the USER."

WITNESSETH

In consideration of the mutual promises to be kept by each and the payments to be made by the USER, the parties agree as follows:

1. TERM: This Agreement will begin (Insert date here) or the date signed by both parties, whichever is later, and will end five (5) years from the date of execution. Issuance of a new five (5) year Agreement is contingent upon satisfactory performance evaluation by the Area Biologist and approval of the THCR Section Leader.

2. The COMMISSION Agrees:

    a. To provide apiary sites on state lands, which will be identified by the COMMISSION staff and located on the property identified in (4)(f) below.

    b. To provide technical assistance for bear-proofing, if required by Area Biologist, of sites made available under this Agreement.

    c. To allow the USER to place a total number of (insert number of hive boxes here) hive boxes on the COMMISSION-managed property at the apiary site(s).

3. The USER Agrees:

    a. To pay (Insert Total Dollars Here) on or before the execution date of this Agreement and each year thereafter on or before anniversary date of the original contract execution date, with check or money order payable to the Florida Fish and Wildlife Conservation Commission. All payments shall be remitted to The Florida Fish and Wildlife Conservation Commission, Finance and Budgeting, Accounting Section, PO Box 6150, Tallahassee, FL 32399-6150, and a copy of the check to The Florida Fish and Wildlife Conservation Commission, Terrestrial Habit Conservation and Restoration Section, Attn: Section Leader, 620 South Meridian Street, Tallahassee, Florida 32399-1600.

b. To have no more than (Insert Number of Hive boxes here) hive boxes on the property at one time.

c. To comply with the Florida Honey Certification and Honeybee Law, Chapter 586, Florida Statutes, and Rule 5B-54, Florida Administrative Code, and all other applicable federal, state, or local laws, rules or ordinances.

d. To not damage, cut or remove any trees in the course of preparing for or conducting operations under this Agreement.

e. To repair within 30 days of occurrence any damage to roads, trails, fences, bridges, ditches, or other public property caused by USER'S operations under this Agreement based on discretion of the COMMISSION to ensure the WMA/WEA management goals are met. All repairs will be coordinated with the Area Biologist to ensure management goals are met. If USER does not comply within the 30 day requirement, then the COMMISSION may use a third party to perform the repairs and charge the USER accordingly.

f. To report any forest fires observed and to prevent forest fires during the course of operations under this Agreement.

g. To abide by all WMA/WEA rules and regulations in addition to items in this Agreement.

h. To notify the Area Biologist within 24 hours when a bear depredation event occurs.

i. To post their name in an agreed upon location at each site covered by this Agreement or otherwise use an identifying system that is approved by the Area Biologist.

j. To furnish proof of general liability insurance prior to starting apiary activities on state property or within 30 days of execution of this Agreement, whichever is earlier, and proof of annual renewal of the general liability insurance policy prior to or upon expiration date of the policy. The USER shall maintain continuous general liability insurance throughout the term of this Agreement for no less than $300,000 for bodily injury and $100,000 for property damage for each occurrence. Such a policy shall name the COMMISSION as the Certificate Holder. The USER's current certificate of insurance shall contain a provision that the insurance will not be canceled for any reason during the term of this Agreement except after thirty (30) days written notice to the COMMISSION.

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k. To be liable for all damage to persons or property resulting from operations under this Agreement, and to release, acquit, indemnify, save and hold harmless the COMMISSION, its officers, agents, employees and representatives from any and all claims, losses, damages, injuries and liabilities whatsoever, whether for personal injury or otherwise, resulting from, arising out of or in any way connected with activities under this Agreement or activities occurring from any other source not under this Agreement and the USER further agrees to assume all risks of loss and liabilities incidental to any natural or artificial condition occurring on state lands cover by this Agreement.

l. To construct and maintain electric fences, if required by the Area Biologist at the Area Biologist's discretion, to provide protection of apiaries from black bear depredation consistent with the technical information bulletin attached to this agreement, and, if so required, to maintain an open buffer around the fencing of five (5) feet or more. (See Attachment 1)

m. To remove all personal property from the site within thirty (30) days of termination or expiration of this Agreement. The USER understands that after this time, all the USER'S personal property remaining on the WMA/WEA shall be deemed abandoned and become the property of the COMMISSION, which will be utilized or disposed of at the sole discretion of the COMMISSION, and that reasonable storage and/or disposal fees and/or costs may be charged to the USER.

4. The parties mutually agree:

a. This Agreement is not transferable.

b. The USER's failure to submit payment by the due date established herein may result in cancellation of the Agreement by the COMMISSION.

c. The USER's failure to submit proof of general liability insurance or proof of annual renewal in compliance with (3) (j) above may result in cancellation of this Agreement by the COMMISSION.

d. This Agreement shall be in effect for a period of five (5) years and issuance of a new agreement will be contingent upon a satisfactory performance evaluation and approval of the Area Biologist and THCR Section Leader.

e. Each apiary site shall be situated so as to be at least one-half (1/2) mile inward from state property lines and there shall be at least one (1) mile separation between sites. Exceptions to this rule must be reviewed by Area Biologist

presented to and approved by the Terrestrial Habitat Conservation and Restoration Section Leader.

f. The property covered by this Agreement is described as follows: That the property sites (Insert Area Name) Wildlife Management Area are represented by Attachment 2.

g. In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal or reply on a contract to provide goods or services to any public entity; may not submit a bid, proposal or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant with any public entity; and may not transact business with a public entity.

h. As part of the consideration of this Agreement, the parties hereby waive trial by jury in action brought by either party pertaining to any matter whatsoever arising out of or in any way connected with this Agreement. Exclusive venue for all judicial actions pertaining to this Agreement is in Leon County, Florida.

i. This Agreement may be terminated by the COMMISSION upon thirty (30) days written notice to the USER in the event the continuation of the apiary activities are found to be incompatible with the COMMISSION'S management plans or for any other reason at the sole discretion of the COMMISSION.

This Area Intentionally Left Blank

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year last below written.

_____
USER SIGNATURE

Date: _____

_____
Witness

_____
Witness

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

_____
Mike Brooks, Section Leader
Terrestrial Habitat Conservation and Restoration

Date: _____

Approved as to form and legality

_____
Commission Attorney

Date: _____

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AGREEMENT
ATTACHMENT 1

Use of Electric Fencing to Exclude Bears And Prevent Property Damage

Florida Fish and Wildlife Conservation Commission
Technical Information Bulletin (2001)

Electric fencing has proven effective in deterring bears from entering landfills, apiaries (beehives), livestock pens, gardens, orchards, and other high-value properties. Numerous electrical fence designs have been used with varying degrees of success. Design, quality of construction, and proper maintenance determine the effectiveness of an electric fence. The purpose of this technical bulletin is to assist the property owner in understanding and implementing electrical fencing as a tool to exclude and prevent damage caused by black bears.

Understanding Electric Fencing

Electric fencing provides an electrical shock when an animal comes into contact with the electrically charged wires of the fence. People unfamiliar with electric fencing often are afraid that it will injure, permanently damage, or kill an individual or pet that contacts the fence. **This is not true!** A properly constructed electric fence is safe to people, pets, and bears.

Components of Electric Fencing

An electric fence is composed of four main elements: a charger, fence posts, wire, and the ground rod.

Fence Charger. On a small scale electric fence (like that typically needed for bear exclusion), the largest cost is normally the fence charger. A fence charger's job is to send an electrical pulse into the wire of the fence. Contrary to popular belief, there is not a continuous charge of electricity running through the fence. Instead the charger emits a short pulse or burst of electricity through the fence. The intensity and duration of the electrical pulse varies with the type of charger or controller unit. Chargers with a high-voltage, short duration burst capacity are the best because they are harder to ground out by tall grass and weeds. These types are also the safest, because, even though the voltage is high (5 kilovolts) the duration of the burst is very short (2/10,000 of a second) (FitzGerald, 1984).

Two basic energy sources for chargers are batteries (12-volt automotive type) and household current (110 volt). Battery-type chargers are typically cheaper to purchase but require more maintenance because of the necessity of charging the battery. The advantage of a battery powered charger is that it can be used in a remote location where 110-volt current is not available. Most units that are powered by a fully charged 12-volt deep-cycle batteries can last three weeks before needing a charge. Addition of a solar trickle charger will help prolong the duration of effective charge in 12-volt batteries.

Fence Posts. On small scale fences, the posts are normally the second largest expense involved in construction. Therefore, when planning an electric fence it is a good idea to utilize existing fencing in order to save money. If no existing fence is available, posts will need to be placed around the area needing protection. Posts may be wood, metal, plastic, or fiberglass. Wood and metal posts will need to have plastic insulators attached to them which prevent the electric wire from touching the post causing it to ground out. Plastic and fiberglass posts do not need insulators, the wire may be affixed directly to these posts. Wood and metal posts are typically more expensive and require the added expense of insulators, however, they are more durable and generally require less maintenance.

Wire. Fourteen to seventeen gauge wire is the most common size range used in electric fencing. Heavier wire (a lower gauge number) is more expensive but carries current with less resistance and is more durable (FitzGerald, 1984).

The two most common types of wire are galvanized and aluminum. Galvanized wire is simply a steel wire with a zinc coating to prevent rust, which makes the wire last longer. Some wire is more galvanized than others. The degree or amount of zinc coating that is around the core steel wire is measured in three classes. A class I galvanization means the wire has a thinner coating of zinc than a class II galvanization. Class III galvanized wire has the heaviest zinc coating and will last longer than the class I and class II wire (FitzGerald, 1984). In general, the cost of galvanized wire increases as the class or amount of galvanization increases.

Aluminum wire is typically more expensive than the galvanized wire. Some advantages of aluminum wire are: it will not rust, it conducts electricity four times better, and it weighs one-third less than steel wire.

The Ground Rod. The ground is an often overlooked, but critical part of an electric fence. Without a good ground, electricity will not flow through the wire. When an animal touches a charged wire, the body of the animal completes the electrical circuit and the animal feels the “shock”. The current must travel from the charger through the wire to the animal and then back through the ground to the charger if the animal is to feel the shock. The soil acts as the return “wire” (ground) in the circuit. However, if a

bird was to land on a charged wire without touching the soil the bird would not complete the circuit and would be unaffected (FitzGerald, 1984). Some fence configurations use actual grounded wires within the fence to enhance the grounding system.
The ground may be a commercial ground rod or a copper tube or pipe driven six to eight feet in moist soil. Copper is expensive, so a copper coated steel pipe or any other good conducting metal pipe will work also. Very dry soil can effect the ability to create a good ground and has sometimes been a problem during drought conditions. Pipe may be a better choice than a solid rod during drought conditions, because water may be poured down the ground pipe to improve the ground. Some fence configurations use wires as the grounding system, rather than relying solely on the soil as a ground.

Recommended Electric Fence to Deter Black Bears

Conditions at fence sites will vary and will determine what the most effective fence configuration will be. Commission biologists welcome the opportunity to visit sites and provide custom tailored advice on constructing an effective electric fence. The following recommendation will cover most situations with low to moderate pressure from black bears. Use a five strand aluminum wire fence that is 40 inches high with wire spacing every eight inches apart using the previously mentioned wired grounding system (see Figure 1). The wire closest to the ground level (the lowest wire) should be a charged or "hot" wire. The second wire should be grounded. The third wire should be hot. The fourth wire should be grounded and the fifth wire should be hot. If using metal or wood posts, insulators must be used to keep the hot wires from grounding out. The cost of this type of electric fence utilizing fiberglass posts and a 110 volt fence charger is approximately $200 for a 40' x 40' area (160 linear feet of fence).

Materials:
1 - 1, 312 foot roll (1/4 mile) 14 gauge aluminum electric fence wire
1 - 50 foot roll 12 gauge insulated wire
20 - 5 foot 5/8 inch dia fiberglass fence posts
5 - plastic gate handles
1 - 110 volt fence charger
1 - 10 foot ground pipe
4 - plastic electric fence signs

Installation. These instructions are for a square shape fence exclusion, but the process would be very similar for other applications. Drive 4 corner posts 1-foot deep into ground and stake with guy wires. Clip, rake, and keep clear any vegetation in a 15-inch wide strip under the fence and apply herbicide. Attach and stretch the aluminum wire at 8-inch increments starting 8 inches from ground level. A loop of wire should be left on each wire at the first corner post. Once the wire has been stretched around the outside of all the corner posts back to the first post a plastic gate handle should be attached to each wire and the gate handles should be attached to each

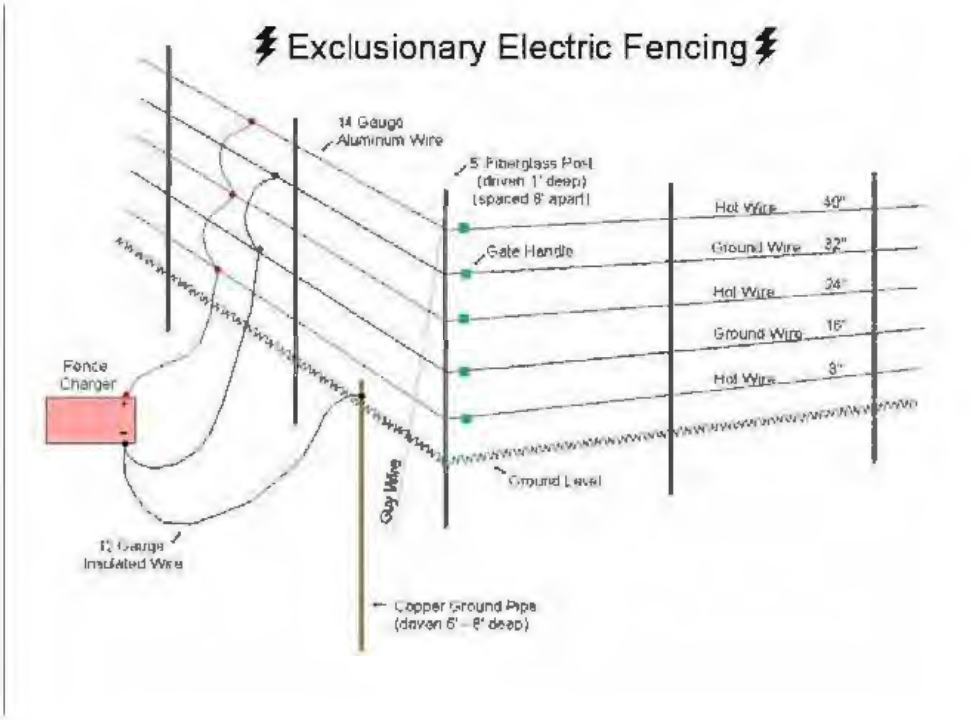
corresponding loop on the first corner post. Drive in the remaining 16 posts to the same depth at 8-foot intervals between corner posts. Secure each of the five wires to each of the posts with additional wire. Attach four plastic electric fence signs (one on each side) to the top wire of the fence. Attach a 12-gauge strand of insulated wire to the positive terminal of the fence charger and attach it to the first, third, and fifth wires of the fence. Attach another 12 gauge insulated wire to the negative terminal of the charger and attach this wire to the ground pipe which has been driven into the ground 6 to 8-feet deep. Attach another 12 gauge insulated wire from the negative terminal of the charger to the second and fourth wires on the fence. Plug the charger into a 110 volt power supply and the fence is in operation.

Tips to improve the effectiveness of your electric fence to deter black bears:

1. If using a 12-volt fence charger, ensure that the battery is charged; check every two weeks.
2. Make sure terminals on the charger and battery are free of corrosion.
3. Make sure hot wires are not being grounded out by tall weeds, fallen tree branches, broken insulators, etc.
4. If fence wires have been broken and repaired, make sure wires are corrosion free where they have been spliced together. Also, tighten the fence at each corner post as wires that have been spliced and are loose make poor connections.
5. Be sure to rake vegetation from under and around the outside of the fence as this may act as an insulator.
6. To improve the ground around the perimeter of the fence add a piece of 24 inch chicken wire laying on the ground around the outside of the fence. This should be connected to ground.
7. During periods of drought pour water down the ground pipe and around the ground pipe to improve the ground. Digging a 6 inch deep 6 inch diameter hole around the ground pipe and back filling with rock salt will also improve the ground. Additional ground pipes may also be added to portions of the fence farthest from the charger.
8. To ensure that the bear solidly contacts the charged portion of the fence, a bait like bacon strips, a can of sardines, or tin foil with peanut butter may be attached to one of the top hot wires. Make sure these do not contact the ground, thus shorting out the fence.
9. When protecting a specific structure (like a shed or rabbit hutch), the fence should be placed 3 to 5 feet away from the structure (rather than on it) so that the bear encounters the fence before reaching the attractant.
10. Protect the fence charger from the elements by covering it with a plastic bucket or a wooden box.
11. Place plastic electric fence signs around the perimeter of your fence to improve visibility and to warn other people.

LITERATURE CITED

FitzGerald, James (1984), *The Best Fences*. Storey Publishing Bulletin A-92, Pownal, Vermont. p. 14-16.



16

AGREEMENT
ATTACHMENT 2

Place Holder for Map

Of

Apiary Locations

At

WMA/WEA

17

APIARY SITE APPLICATION FORM

Florida Fish and Wildlife
Conservation Commission

RETURN TO: The Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600. Please print or type all information. Attach additional sheets if necessary.

Name _____ Telephone Number _____

Mailing Address _____

City or Town_____ County _____ Zip Code _____

Physical Address (If Different from Mailing Address) _____

Company Name: _____

Email Address _____

Requested Wildlife Management or Wildlife and Environmental Area(s)(see attached list of WMA/WEAs with apiary sites):

WMA/WEA _____ County_____ # of Sites_____

WMA/WEA _____ County_____ # of Sites_____

WMA /WEA_____ County_____ # of Sites_____

WMA /WEA_____ County_____ # of Sites_____

Planned Number of Hives Per Site: _____ Permanent: ____ Seasonal: _____

Member of Beekeepers Association: Yes____ No____

Number of Years a Member_____

Name of Beekeepers Association:_____

Are you registered with Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI):_____Yes _____No _____N/A If yes, please provide proof.

Are you current with any and all special inspection fees:_____Yes _____No _____N/A. If yes, please provide proof.

Do you follow all recommended Best Management Practices from FDACS/DPI?:_____Yes _____No

If no, then please explain on a separate piece of paper.

18

Please provide below a chronological history of your beekeeping experience. If you need more space, please provide additional sheets:

References: If a new apiary contractor, please provide on a separate piece of paper at least 3 references who can verify your apiary experience. Provide each reference's name, address, phone number and email address (if applicable). Please attach reference sheet to this document and submit.

19

MISSION STATEMENT

Management

Of

Florida Fish and Wildlife Conservation Commission's

Wildlife Management Areas

And

Wildlife and Environmental Areas

The mission of the Florida Fish and Wildlife Conservation Commission (FWC) is to manage fish and wildlife resources for their long-term well-being and the benefit of the people. To aid in accomplishing this mission, one of FWC's management goals is to manage fire-adapted natural communities on our Wildlife Management and Environmental Areas (WMA/WEA) to support healthy populations of the plants and animal's characteristic of each natural community. In order to achieve this goal various habitat management techniques are used. These include prescribed burning, applications of herbicides and mechanical treatment of vegetation. These management efforts will take place at various times and locations on each of the FWC's WMA/WEAs. Staff on each WMA/WEA will work with and make users aware of these activities when necessary. Users must be aware and accept that these activities are necessary for the proper management of the area.

Note: This document is included as an attachment with each Application and executed Contract.

FDACS/DPI's BMP

Florida Department of Agriculture & Consumer Services

BEST MANAGEMENT PRACTICES FOR

MAINTAINING EUROPEAN HONEY BEE COLONIES

1. Beekeepers will maintain a valid registration with the Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI), and be current with any and all special inspection fees.

2. A Florida apiary may be deemed as European Honey Bee with a minimum 10% random survey of colonies using the FABIS (Fast African Bee Identification System) and/or the computer-assisted morphometric procedure (i.e., Universal system for the detection of Africanized Honey Bees (AHB) (USDA-ID) or other approved methods by FDACS on a yearly basis or as requested.

3. Honey bee colony divisions or splits should be queened with production queens or queen cells from EHB breeder queens following Florida's Best Management Practices.

4. Florida beekeepers are discouraged from collecting swarms that cannot be immediately re-queened from EHB queen producers.

5. Florida Beekeepers should practice good swarm-prevention techniques to prevent an abundance of virgin queens and their ready mating with available AHB drones that carry the defensive trait.

6. Maintain all EHB colonies in a strong, healthy, populous condition to discourage usurpation (take over) swarms of AHB.

7. Do not allow any weak or empty colonies to exist in an Apiary, as they may be attractive to AHB swarms.

8. Recommend re-queening with European stock every six months unless using marked or clipped queens and having in possession a bill of sale from an EHB Queen Producer.

9. Immediately re-queen with a European Queen if previously installed clipped or marked queen is found missing.

10. Maintain one European drone source colony (250 square inches of drone comb) for every 10 colonies in order to reduce supercedure queens mating with AHB drones.

11. To protect public safety and reduce beekeeping liability, do not site apiaries in proximity of tethered or confined animals, students, the elderly, general public, drivers on public roadways, or visitors where this may have a higher likelihood of occurring.

12. Treat all honey bees with respect.

RANDOM

SELECTION PROCESS

FOR VACANT APIARY SITE

When an apiary site becomes available the following procedure is used to randomly select the next apiarist (beekeeper) for an available apiary site on a WMA or WEA. Only those who have been evaluated and deemed qualified to be an apiarist on a WMA/WEA through the Apiary Application process will be eligible for this selection process. The steps below will be followed by the THCR Contract Manager when a site becomes available to be filled by a qualified apiarist:

1. The THCR Contract Manager will maintain an "Apiary Wait List Folder" on the THCR SharePoint for each WMA/WEA with apiary sites.
2. A wait list is either created or updated when an Apiary Application(s) is received by the THCR Contract Manager from a qualified apiarist.
3. Upon receipt of an apiary site application, the THCR Contract Manager will review the WMA/WEA folder to see if there is an "Apiary Wait List".
4. If a list exists then the qualified applicant will be added to the list.
5. When an apiary site becomes available if there are more than one qualified apiarist then these apiarists will be contacted by certified letter to determine their interest.
6. The letter will request a response within 10 working days to make them eligible for the random drawing.
7. If there is no response or is negative then that apiarist will not be included in the random drawing and the name will be removed from the waiting list*.
8. If only one apiarist responds positively to the certified letter then the available site will be awarded to that interested apiarist.
9. If there are no apiarists on a wait list or all responses are negative then apiarists who currently have site(s) under Agreement and where not on the waiting list will be contacted to see if any have interest in the available site. If more than one responds then the random drawing process will be used to determine who will be awarded the site.

10. Steps to be performed by the THCR Contract Manager to execute the random selection for an available apiary site are listed below:

    a. The names of each interested apiarist will be noted on a 1" X 2" piece of paper and folded in half.

    b. The pieces of paper will be inserted into a "black film canister" which has a snap top and placed into a container and stirred up prior to the selection.

    c. A non-biased person will be selected to reach into the bowl (which will be held above the selection person's eyesight) and randomly select one of the canisters.

    d. The canister will be opened by the person performing the selection and the name is read aloud for those in attendance. Everyone in attendance will sign a witness sheet.

    e. The apiarist whose name is selected will be awarded the available site.

    f. A new Agreement will be developed by the THCR Contract Manager.

*A new apiary application must be submitted once requestor's name is removed from a waiting list.

12.8 Management Procedures Guidelines - Management of Archaeological and Historical Resources

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties
(revised March 2013)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267. Florida Statutes. "*'Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.*"

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:
http://www.flheritage.com/preservation/compliance/guidelines.cfm

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:
http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Deena S. Woodward
Division of Historical Resources
Bureau of Historic Preservation
Compliance and Review Section
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Phone: (850) 245-6425

Toll Free: (800) 847-7278
Fax: (850) 245-6435

12.9 Land Management Uniform Accounting Council Categories

Land Management Uniform Accounting Council and FWC Activity Code Groupings

Resource Management

Exotic Species Control

210	Exotic species control
211	Exotic plant control (mechanical)
212	Exotic plant control (chemical)

Prescribed Burning

205	Prescribed burning
206	Prescribed burning C growing season (April 1 to September 30)
207	Prescribed burning C dormant season (October 1 to March 31)
208	Firebreaks

Cultural Resource Management

201	Cultural resource management

Timber Management

202	Timber management

Hydrological Management

215	Hydrology management
216	Dams, dikes, levees
217	Canals
218	Water level management
194	Lake restoration

Other

185	GIS
186	Biometrics
200	RESOURCE MANAGEMENT
203	Tree and shrub planting
213	Wildlife management
214	Listed Species management
219	Upland restoration
282	Herbaceous seeding
283	Clearings
289	Native vegetation management (mechanical)
290	Native vegetation management (chemical)
221	Animal surveys
228	Inland aerial surveys
235	Vegetation and plant surveys
250	MONITORING AND ASSESSMENTS
252	Biomedical monitoring
253	Ecological monitoring
256	Habitat monitoring analysis
263	Nest box monitoring
264	Population demographics
295	Biological data collection, analysis, and reporting
275	Permits and authorizations
276	Commission rule development and review
277	Relocation
278	CITES tags
281	Other resource management
284	Feeding/watering
285	Nest structures
286	Population control

287 Stocking enhancements/population augmentation
288 Nuisance animal complaints
293 Mortality investigations
294 Program coordination and implementation C inter- and intra-agency coordination and program implementation at the section, bureau, or division level
296 Habitat protection technical assistance
750 URTD assessment
789 Site Preparation GCR
790 Irrigation – GCR
791 Seed Collection – Hand
792 Seed Collection – Mechanical
793 Herbicide Maintenance Treatment

Administration

Central Office/Headquarters

100 ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties.
104 Budget/purchasing/accounting

Districts/Regions

See Location code

Units/Projects

See Location code

Support

Land Management Planning

103 Meetings C includes workshops, conferences, staff, and other meetings.
204 Resource planning

Land Management Reviews

209 Land Management Reviews
101 Project inspection C field inspections of projects.

Training/Staff Development

150 PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising.

Vehicle Purchase

128 New Vehicle and Equipment Purchase

Vehicle Operation and Maintenance

923 FEM C vehicles/equipment

Other

140 REPORT WRITING/EDITING/MANUSCRIPT PREPARATION
141 Grant applications
180 SYSTEMS ADMINISTRATION AND MANAGEMENT
182 Data management
184 Metadata development and management
187 IT
188 Web development
721 Geospatial analysis techniques
191 Stamp design coordination
226 Human dimensions surveys

Capitol Improvements

New Facility Construction

910	New facility construction C buildings/structures
912	New construction C roads/bridges
913	New construction C trails
914	New construction C fences

Facility Maintenance

920	Facility and equipment maintenance (FEM) C buildings/structures
921	FEM C utilities
922	FEM C custodial functions
925	FEM C boating access
926	FEM C roads/bridges
927	FEM C trails
928	FEM C fences

Visitor Services/Recreation

Information/Education Programs

145	Technical bulletin

Operations

311	Boundary signs
312	Informational signs
320	Outreach and education C attending or developing educational or informational materials or events for the public
327	Becoming an Outdoor Woman C enhancement
331	Wings Over Florida
341	Public use administration (hunting)
342	Public use administration (non-hunting)
350	Customer service support C disseminating written or verbal information or assistance to the public
700	STUDIES
740	EVALUATIONS AND ASSESSMENTS

Law Enforcement

NUMERIC

100	ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties.
101	Project inspection C field inspections of projects.
103	Meetings C includes workshops, conferences, staff, and other meetings
104	Budget/purchasing/accounting
128	New Vehicle and Equipment Purchase
140	REPORT WRITING/EDITING/MANUSCRIPT PREPARATION
141	Grant applications
145	Technical bulletin
150	PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising.
180	SYSTEMS ADMINISTRATION AND MANAGEMENT
182	Data management
184	Metadata development and management
185	GIS
186	Biometrics
187	IT
188	Web development
191	Stamp design coordination
194	Lake restoration
200	RESOURCE MANAGEMENT
201	Cultural resource management
202	Timber management
203	Tree and shrub planting
204	Resource planning
205	Prescribed burning
206	Prescribed burning C growing season (April 1 to September 30)
207	Prescribed burning C dormant season (October 1 to March 31)
208	Firebreaks
209	Land Management Reviews
210	Exotic species control
211	Exotic plant control (mechanical)
212	Exotic plant control (chemical)
213	Wildlife management
214	Listed Species management
215	Hydrology management
216	Dams, dikes, levees
217	Canals
218	Water level management
219	Upland restoration
221	Animal surveys
226	Human dimensions surveys
228	Inland aerial surveys
235	Vegetation and plant surveys
250	MONITORING AND ASSESSMENTS
252	Biomedical monitoring
253	Ecological monitoring
256	Habitat monitoring analysis
263	Nest box monitoring
264	Population demographics
275	Permits and authorizations
276	Commission rule development and review
277	Relocation

278 CITES tags
281 Other resource management
282 Herbaceous seeding
283 Clearings
284 Feeding/watering
285 Nest structures
286 Population control
287 Stocking enhancements/population augmentation
288 Nuisance animal complaints
289 Native vegetation management (mechanical)
290 Native vegetation management (chemical)
293 Mortality investigations
294 Program coordination and implementation C inter- and intra-agency coordination and program implementation at the section, bureau, or division level
295 Biological data collection, analysis, and reporting
296 Habitat protection technical assistance
311 Boundary signs
312 Informational signs
320 Outreach and education C attending or developing educational or informational materials or events for the public
327 Becoming an Outdoor Woman C enhancement
331 Wings Over Florida
341 Public use administration (hunting)
342 Public use administration (non-hunting)
350 Customer service support C disseminating written or verbal information or assistance to the public
700 STUDIES
721 Geospatial analysis techniques 740 EVALUATIONS AND ASSESSMENTS
750 URTD assessment
789 Site Preparation – GCR
790 Irrigation – GCR
791 Seed Collection – Hand
792 Seed Collection – Mechanical
793 Herbicide Maintenance Treatment
910 New facility construction C buildings/structures
912 New construction C roads/bridges
913 New construction C trails
914 New construction C fences
920 Facility and equipment maintenance (FEM) C buildings/structures
921 FEM C utilities
922 FEM C custodial functions
923 FEM C vehicles/equipment
925 FEM C boating access
926 FEM C roads/bridges
927 FEM C trails
928 FEM C fences

Approved August 31, 2000

Land Management Uniform Cost Accounting Council

Uniform Land Management Cost Categories and Subcategories

1. **Resource Management**

   a. Exotic Species Control. -- Invasive exotic plant and animal removal activities and costs for inventorying, planning, preparing, executing, evaluating, monitoring and reporting. Also includes equipment, chemicals, protective clothing and supplies. Includes nuisance native feral animal and plant control.

   b. Prescribed Burning. -- Prescribed burning activities and costs for assessing, planning, preparing, executing, evaluating and reporting. Also includes equipment, protective clothing and supplies.

   c. Cultural Resource Management. -- Management activities and costs for assessing, planning, executing, evaluating and reporting, and for all maintenance, restoration or monitoring activities for prehistoric and historic sites, features and collection objects.

   d. Timber Management. -- Activities and costs related to the establishment of a stand of potentially merchantable timber, harvest of merchantable timber, and cultural treatments intended primarily to improve the growth and overall health of a stand of merchantable timber. Also includes activities and costs related to the cutting of merchantable timber in natural community and habitat restoration projects.

   e. Hydrological Management. -- Hydrological management and restoration activities and costs for assessing, monitoring, planning, preparing, executing, evaluating and reporting. Includes water level management, repair, removal or back-filling of ditches, canals, berms and dams. Also includes water quality and water quantity monitoring.

   f. Other. -- All other resource management activities and costs not captured in other specific subcategories. Examples include natural community and habitat restoration through other techniques; plant, animal or biological community survey, monitoring and research; listed species management; technical assistance; and evaluating and commenting on resource impacts to parks.

2. **Administration**

   a. Central Office/Headquarters. -- Headquarters units conducting general administration of land under management by the agency. Includes upper management direction, administration and fiscal, budget, personnel, purchasing and record keeping required for operations oversight and specific

programs. Includes all duties unless they specifically relate to other categories or subcategories.

b. Districts/Regions. -- Sub-state administrative districts or regions conducting general administration of the properties under their management. Includes all duties, unless they specifically relate to other categories or subcategories. General operating costs of district or region administrative facilities are included.

c. Units/Projects. -- Conducting general administration duties at a specific management unit (state park, state forest, state wildlife management area, etc.). Includes supervisory duties, fiscal and record keeping duties, and any other duties that do not specifically relate to other categories or subcategories. General operating costs for the property, such as utilities, telephones and garbage collection, are included.

3. Support

a. Land Management Planning. -- Developing land management plans required by Sec. 253.034, F.S. Includes researching and compiling plan information, materials and maps, coordinating planning activities, conducting review activities (internal reviews, public meetings, advisory group meetings, ARC, etc.), and promulgating draft plans and final plans.

b. Land Management Reviews. -- Planning, organizing and conducting land management reviews by teams created under Sec. 259.036, F.S. Includes preparing and responding to land management review reports. Also includes similar work conducted as part of internal agency land management reviews.

c. Training/Staff Development. -- Staff training and development costs incurred in any facet of the agency's land management activities.

d. Vehicle Purchase. -- Acquisition of any vehicle purchased primarily for land management purposes or to support any category of land management activity by the agency.

e. Vehicle Operation and Maintenance. -- Costs of operating and upkeep of any vehicle used by the agency to support any category of land management activity.

f. Other. -- Any other support activity or cost not captured by other categories or subcategories.

4. Capital Improvements

a. New Facility Construction. -- Use of Fixed Capital Outlay (FCO) or other budget authority for all new facility design and construction activities. Includes new roads, parking and all other infrastructure.

b. Facility Maintenance. -- Use of Fixed Capital Outlay (FCO) or other budget authority for all repairs or renovations to existing facilities, roads or other infrastructure. Also includes ADA accessibility improvements and renovations.

5. Visitor Services/Recreation

a. Information/Education Programs. -- Interpretive, environmental education and marketing programs that explain or promote the agency's mission or instill in visitors an understanding and appreciation for Florida's natural and cultural resources and their proper use and care. Includes signs, brochures, maps and other public information materials that are produced or disseminated.

b. Operations. -- Includes the non-administrative and non-support costs involved in providing public access to lands. Includes all actions required to manage visitor activities in a way to ensure safe and enjoyable use by the public. Includes routine maintenance, cleaning and other work required to provide safe and efficient utilization of facilities and resources that support visitor use and recreation. Includes protection activities required by staff to safeguard natural and cultural resources, facilities, material, staff and visitors.

6. Law Enforcement

The provision of all activities for enforcing criminal, conservation and boating laws on land, freshwater and marine environments and all costs associated with these services. Includes the provision of uniform patrol. Includes overt and covert criminal investigations. Includes regulation of commercial wildlife trade. Also includes the direction and administration of all law enforcement programs and activities, and all associated costs.

12.10 Operation Plan Fiscal Year 2015-2016

Branan Field WEA Fiscal year 2016 Projects: 1202							
Activity	Title	Man Days	Salary	FuelCost	Other	Total	Units
100	Administration	0	$0.00	$0.00	$0.00	$0.00	0
101	Project inspection	3	$653.94	$25.50	$50.00	$729.44	0
104	Budget/purchasing/accounting	2	$435.96	$17.00	$50.00	$502.96	0
140	Report writing/editing/manuscript preparation	2	$435.96	$17.00	$50.00	$502.96	0
182	Data management	0	$0.00	$0.00	$0.00	$0.00	0
185	GIS	2	$435.96	$17.00	$100.00	$552.96	0
200	Resource Management	0	$0.00	$0.00	$0.00	$0.00	0
204	Resource planning	6	$1,307.88	$51.00	$100.00	$1,458.88	0
206	Prescribed burning - growing season	10	$2,179.80	$85.00	$550.00	$2,814.80	95
208	Firebreaks	2	$435.96	$17.00	$100.00	$552.96	5
210	Exotic species control	2	$435.96	$17.00	$100.00	$552.96	0
221	Animal surveys	6	$1,307.88	$51.00	$100.00	$1,458.88	0
250	Monitoring and assessments	0	$0.00	$0.00	$0.00	$0.00	0
263	Nest box monitoring	0	$0.00	$0.00	$0.00	$0.00	0
311	Boundary signs	2	$435.96	$17.00	$100.00	$552.96	4
312	Informational signs	2	$435.96	$17.00	$1,500.00	$1,952.96	1
750	URTD assessments	0	$0.00	$0.00	$0.00	$0.00	0
927	FEM -- trails	4	$871.92	$34.00	$100.00	$1,005.92	3
928	FEM -- fences	4	$871.92	$34.00	$100.00	$1,005.92	4
All	totals	47	$10,245.06	$399.50	$3,000.00	$13,644.56	112

12.11 Prescribed Burn Plan 2016

Branan Field Wildlife and Environmental Area
Prescribed Burning Plan

INTRODUCTION

Fires in general have been an important part in the composition of Florida's ecosystem for many years. Many natives using fire to their advantage as agricultural tools along with historical lighting strikes coupled with minimal fire suppression, has developed and maintained a fire-dependent plant community in the southeast. The lack of fire can change an open canopy pine savanna into a densely closed hardwood hammock. This change results in undesirable conditions for species that rely on fire (Gilliam and Platt 1999).

The suppression of today's lightning-sparked wildfires is intended for the safety of the public and not the integrity of Florida's ecosystem, however in order to continue the overall effects of fire, prescribed fires are conducted. Intentionally started under favorable conditions, these fires mimic "natural" fires, but are strategically planned and controlled.

Resource managers in Florida rely on prescribed burning as an important land management tool. Prescribed burning is used for habitat improvement and manipulation, fuel reduction, disease and insect control, and site preparation. It is a recommended tool for management of such game animals as white-tailed deer (*Odocoileus virginianus*), bobwhite (*Colinus virginianus*), mourning dove (*Zenaidia macroura*), and wild turkey (*Meleagris gallopavo*) (U.S. Forest Service 1969, Stoddard 1971). The value of prescribed fire to these and other animals, such as raptors and some songbirds, are well documented (Engstrom 2002). Prescribed fire benefits wildlife by reducing underbrush density, thus improving access, promoting the growth of succulent vegetation and lowering browse to feeding height of deer. Aesthetic values are also enhanced by the growth and fruiting of important wildlife food plants, such as dewberries (*Rubus spp.*) and blueberries (*Vaccinium spp.*) (Smith 2000).

BURN OBJECTIVES

Prescribed fire will be used on Branan Field Wildlife and Environmental Area (BFWEA) as a habitat management tool exclusively or in conjunction with other management techniques to accomplish a variety of objectives. The primary objective for using prescribed fire on BFWEA is to restore and or maintain fire-dependent native habitat communities. This will result in preserving native plant communities including restoration of native groundcover while simultaneously improving wildlife habitat. The benefits derived from prescribed burning on BFWEA include not only long term preservation of native plant communities and improved wildlife habitat but numerous others as well:

1) Reduction of fuel loads, which will help to prevent or mitigate effects of wildfires.
2) Enhancement of the areas aesthetics by controlling undesirable vegetation.
3) Control of exotic plant species.
4) Improved public access.

DESCRIPTION OF AREA

BFWEA occupies 386 acres in southern Duval and northern Clay counties and is located approximately 15 miles southwest of Jacksonville, Florida. Together with other nearby public conservation lands that include the Jennings State Forest and the Cecil Field Conservation Corridor, this is an important area for the protection of pine flatwoods communities and their associated fauna. It is bordered by the Cecil Airport and Cecil Commerce Center on the west and private property to the north, south, and east.

BFWEA is located in Sections 35 and 36, Township 3 South, Range 24 East, as well as Sections 1 and 2, Township 4 South, Range 24 East.

BFWEA contains 339 acres of fire-maintained natural communities including wet flatwoods, mesic flatwoods, and sandhill. Various wetland communities including basin swamp, dome swamp, and depression marsh are interspersed throughout. The dominant canopy species of the upland communities include slash pine (*Pinus elliottii*) and longleaf pine (*P. palustris*). A diverse understory is present and dominated by a grassy and herbaceous groundcover with saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), and other woody species intermixed. When present, the mid-story is largely composed of smaller oaks (*Quercus spp.)* and other hardwood species.

PRESCRIBED BURNING PROGRAM

A. Firelines

Existing features (e.g. roads) are utilized as firelines to safely contain prescribed fires whenever feasible. These roads are evenly spaced throughout the property and delineate 5 burn zones of modest and manageable size. Many of the roads that are utilized as firebreaks require either disking or tilling to maintain functional mineral firebreaks before actual burning. Firelines will be maintained as roads by FWC personnel and maintained by mowing during non-burning intervals. The four mile boundary was constructed forty feet wide, to give firefighting equipment and personnel room to safely operate as well as a wide space to contain prescribed burning operations within the WEA boundary.

B. Size and Arrangement of Management Units

BFWEA is divided into 5 management units that function as burn zones for prescribed fire purposes. The management units are roughly rectangular in shape and average 78 acres in size, with the largest unit at 110 acres and the smallest at 24 acres (Figure 1).

The preferred prescribed burn interval based on vegetative characteristics and availability to burn on BFWEA is approximately 1-3 years for sandhill, 2-4 years for flatwoods, and 3-5 years for wetlands. Burn zones can be burned all at one time if necessary to maintain fire-return intervals but preferably burned singly across time to provide a patchwork of diverse habitat in varying stages of development and to minimize impacts to wildlife. Ideally, all fire-maintained acreage should be on a one to three year burn interval with a two year rotation being optimal. Burn units will be burned in a mosaic pattern, thus increasing habitat diversity and escape cover for desired wildlife.

Figure 1. Prescribed burn zones on the Branan Field Wildlife and Environmental Area.

Type of Burn

Most of the burns on BFWEA will begin with a backing fire on the downwind side of the burn unit. The remainder of the unit will be burned using appropriate fire techniques relative to burn objectives, weather conditions, fuel loads, and fire intensity. Spot, flank, and strip head fires are the most common ignition patterns that will be used dependent on fuel loads. Although rarely used, aerial ignition is another ignition pattern that allows large acreage to be burned in a short amount of time.

C. Season and Time of Day

Growing season burning will be preferred but dormant season burns will be conducted as needed to maintain fire frequency on burn units that miss a growing season rotation, or to provide seasonal diversity to mimic natural fire regimes. Currently, growing season burns are the predominate method and will continue to be a majority of the prescribed fires on the area. Burning will be conducted primarily during daylight hours; night burning will be avoided due to problems associated with smoke dispersal. However, if favorable conditions exist and permits can be obtained, burning will be continued into the night, if necessary.

D. Optimal Weather Conditions

The optimal winter burning conditions exist 1-3 days after the passage of a cold front that has brought 0.5-1.5 inches of rain, a relative humidity from 30-60%, air temperature of 20-60°F and north or northwest winds (4-8mph in the stand) (Crow and Shilling 1983). Winds having a westerly component are especially desirable for winter burning along the east coast of Florida. This is because they are more reliable and persistent than winds having an easterly component (Mitchell et all. 2014). Easterly and sea breeze winds occur primarily during the summer starting early to mid-afternoon and usually have a higher moisture content coming off the ocean. Since most of our burn units require a westerly wind due to smoke management constraints, it is difficult to get optimal weather conditions for conducting prescribed burns at BFWEA during summer months.

E. Smoke Management

Due to the central location of BFWEA in relation to smoke sensitive areas, the direction, volume, and dissipation of smoke created during a prescribed fire is a primary concern. Areas that may be affected by smoke (or particulates carried by smoke) under optimum burning conditions are Cecil Airport and Cecil Commerce Center (adjacent to northwest), Normandy Blvd (4 miles to northwest) I-10 (7 miles to north), Jacksonville (17 miles northeast), I-295 (6 miles to east), Oak Leaf Community and Oak Leaf Schools (0.5-3 miles to east and southeast)' Orange Park Area Hospital (10 miles southeast), and nearby residents (Figure 2).

To minimize smoke problems, burning should be conducted when atmospheric conditions are slightly unstable, with a minimum mixing height of 1,600 feet and transport wind speeds of greater than 9 mph (Southern Forest Fire Laboratory 1976, Crow and Shilling 1983). Additionally, the use of backfires, as prescribed, will produce less smoke and consume fuel more completely than

a head fire. Residual smoke problems (such as stumps, snags, or logs near state or county roads) will be promptly mopped-up and monitored to minimize smoke hazards.

Smoke management can be difficult when night burning because smoke often stays close to the ground making it more difficult to predict actual smoke direction. Smoke tends to travel to lower elevated areas such as creeks and lakes. Night burning will be approached with caution and in close association with the Florida Forest Service to avoid these problems.

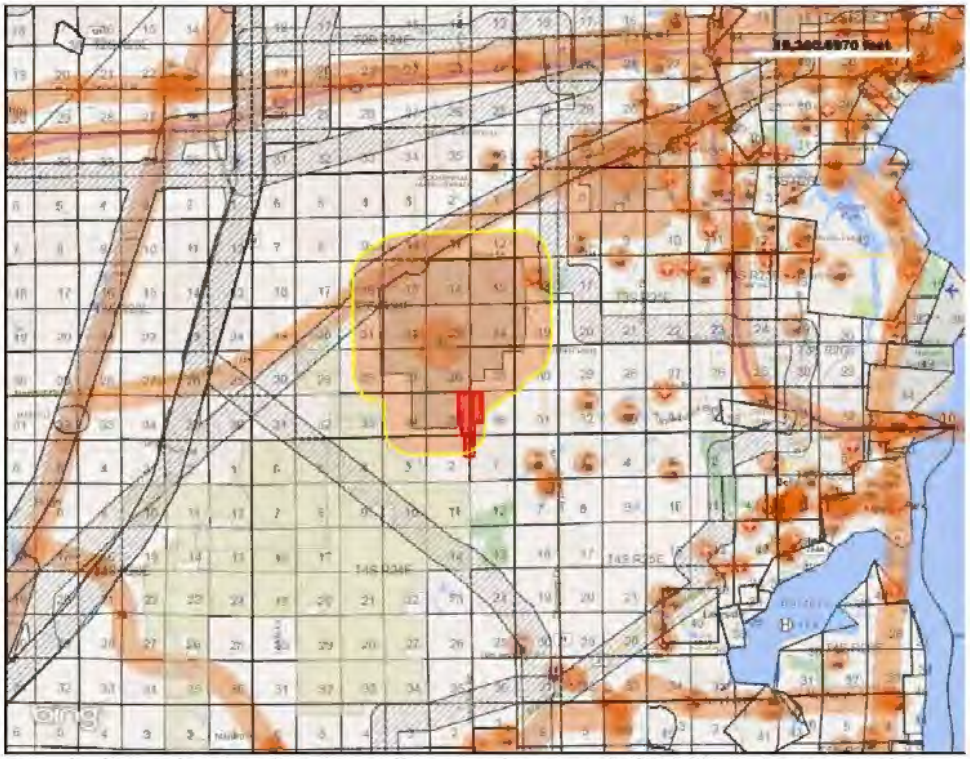


Figure 2. The relationship of smoke-sensitive areas to Branan Field Wildlife and Environmental.

F. Personnel

Under ideal conditions and depending on the composition and structure of the burn unit, burning can be conducted with a minimum crew of three; however, a crew of four to five per unit is optimal. Depending on unit size and orientation, multiple units can be burned on the same day and the minimum number of crew members needed will be adjusted accordingly. Burn crew members will be assigned tasks according to their training, equipment, and burn experience. Certified and experienced volunteers and personnel from other state and federal agencies (FFS, DEP, TNC) will be used if needed. Commission personnel who are certified for prescribed burning will serve as the burn manager conducting the burn.

G. Equipment

All members of the fire crew will wear all appropriate PPE required by FWC's Prescribed Burning and Wildfire Suppression Standards. Fire flaps, fire rakes, drip torches, type VI engine, tractor-plow, dozer, farm tractor, ATV's and a slip-in water unit will be available. Required equipment will be specific to each burn unit dependent on fire return interval, complexity, size, and locality of the prescribed burn. Smoke caution signs for nearby roads will be deployed as necessary.

H. Permits and Notifications

An authorization will be obtained from the Florida Forest Service (FFS) on the morning of the burn. Various contacts in the regional FWC office and Law Enforcement Dispatch will be notified of each prescribed burn occurring on BFWEA. Other notifications will be made as needed to Florida Highway Patrol, Florida Dept. of Transportation, Duval County Emergency Management, Cecil Airport and Air Traffic Control Tower, and adjacent landowners.

I. Evaluation of Burn

Initial evaluation of the fire will be conducted within one week and include; percent crown scorch, bark char (height), fuel consumption, flame height, fire behavior, smoke dispersion, any escape, adverse publicity, objectives reached as well as any unusual observation. A follow-up evaluation will be completed within one month and will include crown scorch, understory kill, adverse insect activity and unusual observations. These observations will be incorporated into future burn prescriptions.

J. Special Considerations

Wildland fire is an ecologically disruptive event in the immediate short term. But the long term benefits of properly timed and applied prescribed fire greatly exceed any short term disruptions. Care will be taken to protect environmentally sensitive areas and to employ the best fire management actions that will provide the greatest long term benefit to the largest number of species. Smoke screening will direct special attention to certain areas to ensure our burns do not adversely affect adjacent landowners, nearby roads, schools, hospitals, and airports. Fire size and intensity will be manipulated to minimize fast moving headfires during optimal burning conditions.

Summer prescribed burning is generally performed for hardwood brush control and increased herbaceous vegetation growth. High air temperature reduces the amount of heat needed to raise plant temperatures to lethal levels. Actively growing plants are more easily killed by fire than dormant plants, which results in better hardwood brush control than winter fires (Smith 2000). Growing season burns also promote an increase in herbaceous vegetation growth and species diversity, releases planted longleaf pine seedlings from vegetative competition, helps control brown-spot disease and mimics naturally occurring summer lightning fires.

Summer burning may affect various wildlife species which are highly active during the summer. Nesting reptiles, birds, and mammals can also be adversely impacted by summer burns.

Growing season burns will be conducted during April through September with desired wind speed and relative humidity as prescribed.

Sensitive wildlife resources, such as Bald eagles and Gopher tortoises will be given special consideration. Bald eagle (*Haliaeetus leucocephalus*) nests will be excluded from winter burning. Burn units with active nest trees in the burn unit will not be burned during nesting season between October 1st and May 15th. Extra precautions will be used to prevent the nest tree from fire induced mortality. Gopher tortoises (*Gopherus polyphemus*) seem somewhat dependent on vegetation response to fire, and research has shown no adverse effects on this species from prescribed burning (Means and Campbell 1981). Fire size and intensity will be manipulated to minimize impact on individual gopher tortoises. Prescribed burning will produce more of a desirable habitat, thus having a positive effect on the population of gopher tortoises as a whole.

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12.12 WCPR Strategy for BFWEA

A Species Management Strategy for Bell Ridge Longleaf WEA and Branan Field Mitigation Park WEA

May 2013

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Wildlife and Habitat Management Section
A product of the Wildlife Conservation,
Prioritization and Recovery Program

Executive Summary

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management section (WHM) takes a proactive, science-based approach to species management on lands in the Wildlife Management Area system (WMA/WEA). This approach uses information from statewide models, in conjunction with input from species experts and people knowledgeable about the area, to create site-specific assessments of a number of focal species. Staff combines these assessments with management considerations to develop a wildlife management strategy for the area. The FWC intends for this Strategy to: 1) provide land managers with information on actions that should be taken provided the necessary resources are available, 2) promote the presence and ensure the persistence of focal wildlife species on the area, and 3) provide measurable species objectives that can be used to evaluate the success of wildlife management on the area.

This document presents the results of a science-based process for evaluating focal species needs using an ecosystem management approach on the Bell Ridge Longleaf Wildlife and Environmental Area (BRLWEA) and Branan Field Mitigation Park Wildlife and Environmental Area (BFWEA). Natural community management designed for a set of focal species benefits a host of species reliant upon the same natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of the WMA in regional and statewide conservation initiatives throughout the process.

Section 1 informs the reader about the process used to generate this document.

Section 2 describes the historic and ongoing management actions on the properties.

Section 3 provides a list of the focal and listed species on the area, and an assessment of each species' level of opportunity and need. This includes species-specific objectives that were identified for the gopher tortoise, southeastern American kestrel, Florida mouse, and rare plants.

Section 4 describes specific land management actions recommended for focal species. This includes Strategic Management Areas (SMA) and Objective-Based Vegetation Management (OBVM) considerations. This section also discusses management necessary to ensure continued persistence of focal species.

Section 5 describes species-specific management and monitoring actions prescribed for the area, and identifies any research that would be necessary to guide future management efforts. Monitoring is recommended for the gopher tortoise, southeastern American kestrel, and Florida mouse. Documentation of observations of other focal and listed species is recommended.

Section 6 identifies coordination that will assist in conserving these focal species. We identify coordination with 4 other units in FWC and inter-agency coordination with 3 other entities.

Section 7 describes efforts that should occur "beyond the area's boundaries" to ensure conservation of the species on the area.

Continuation of current resource levels would be required to provide for most of the land management recommended in this document. Some of the monitoring recommendations may require additional resources, while FWC can accomplish others with continuation of existing resources.

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Acronym List

ARCI	Avian Research and Conservation Institute
BFWEA	Branan Field Wildlife and Environmental Area
BRLWEA	Bell Ridge Longleaf Wildlife and Environmental Area
CFCC	Cecil Field Conservation Corridor
CPS	Conservation Planning Services (office; formerly Habitat Conservation Scientific Services)
DBH	diameter at breast height
DFC(s)	Desired Future Condition(s)
FFS	Florida Forest Service (formerly Division of Forestry)
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
FWLI	Florida's Wildlife Legacy Initiative
FWRI	Fish and Wildlife Research Institute
JSF	Jennings State Forest
MU	Management Unit
NC	Natural Community
OBVM	Objective-Based Vegetation Management
PLCP	Public Lands Conservation Planning (project)
PVA	Population Viability Analysis
SCP	Species Conservation Planning (section)
SMA	Strategic Management Area
TNC	The Nature Conservancy
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WEA	Wildlife and Environmental Area
WHCNiFL	Wildlife Habitat Conservation Needs in Florida
WHM	Wildlife and Habitat Management (section)
WMA	Wildlife Management Area

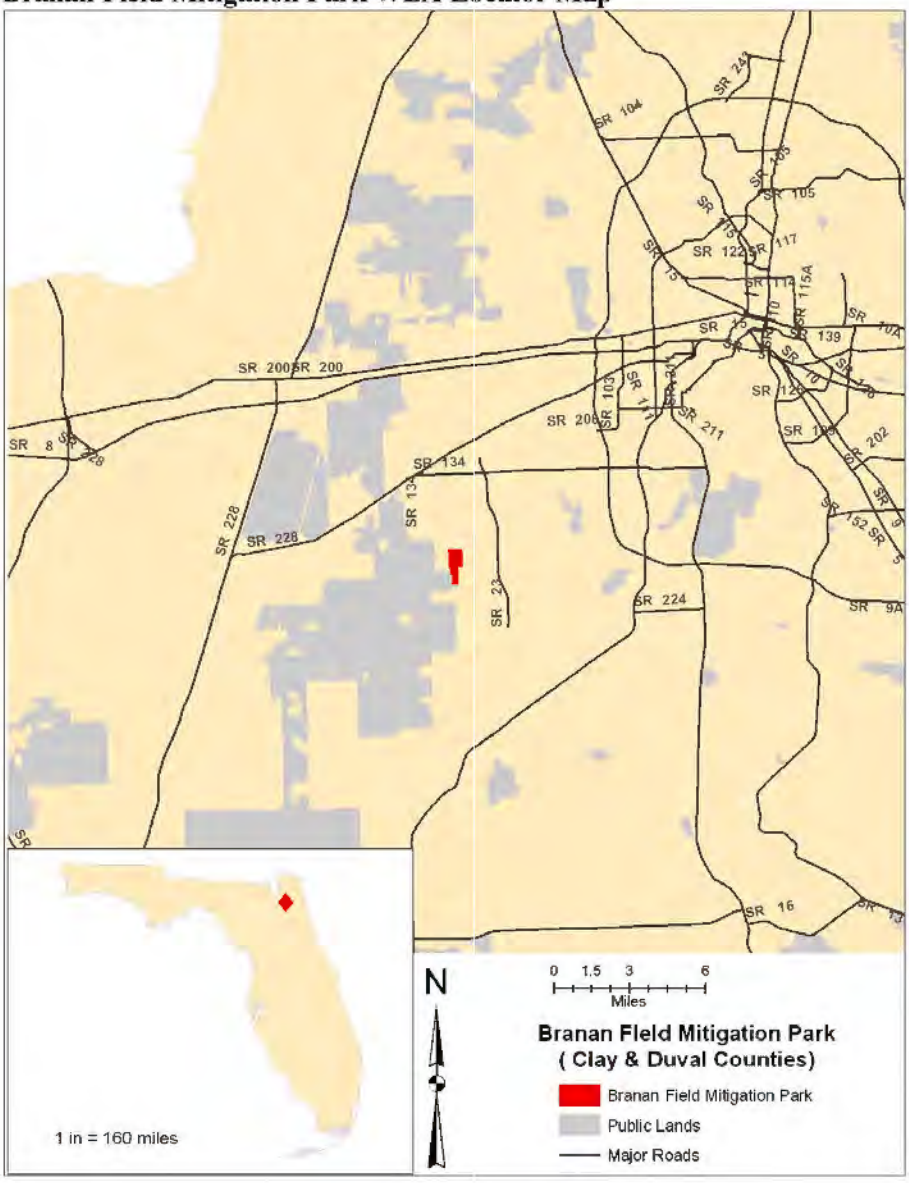
Statewide Species Prioritization Parameters

This table provides the values for the 6 prioritization parameters for the focal species. Parameters that are "triggered" (exceed the threshold) are in **bold**. Typically, the more parameters a species triggers, the higher the statewide prioritization.

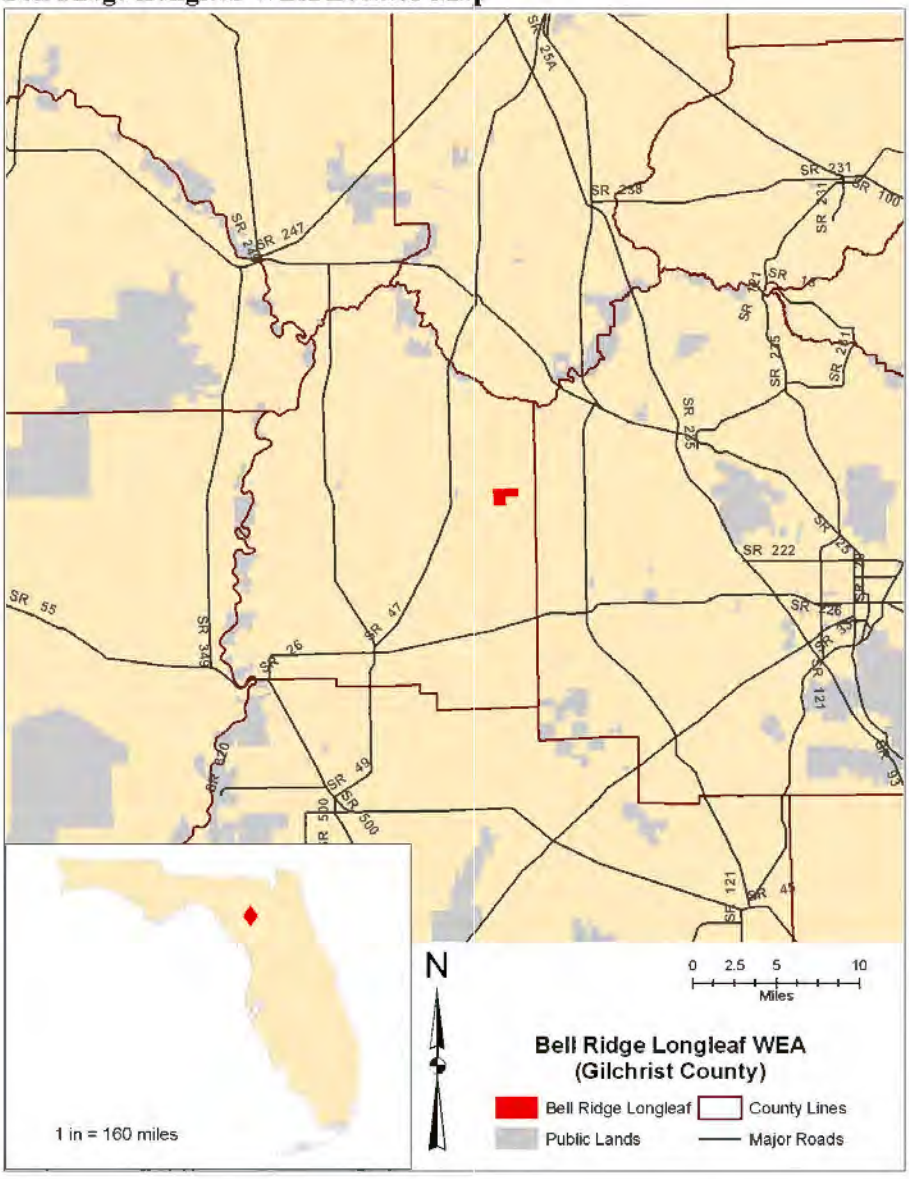
Species Common Name	Millsap Report, 2008		Legacy Initiative		PVA on managed lands	
	Biological Score[1]	Supplemental Score[2]	Population Status[3]	Population Trends[4]	Probability of a 50% decline[5]	Populations persisting (to 80 or 100 years)[6]
Frosted Flatwoods Salamander	24.3	**16**	**low**	**declining**	0	**22% (to 100)**
Striped Newt	**29**	**20**	**low**	**declining**	0	80% (to 100)
Florida Pine Snake	23.7	**15**	medium	**declining**	0	**31% (to 80)**
Gopher Tortoise	**27.3**	**17**	medium	**declining**	0	**55% (to 100)**
American Swallow-tailed Kite	25.7	13	**low**	**unknown**	**20%**	**50% (to 100)**
Bachman's Sparrow	16.0	12	medium	**declining**	0	**49% (to 80)**
Brown Headed Nuthatch	17.0	13	medium	**declining**	0	**25% (to 80)**
Cooper's Hawk	15.0	12	not a SGCN[7]	not a SGCN	**96%**	100% (to 100)
Northern Bobwhite	11.0	14	**low**	**declining**	0	100% (to 100)
Southeastern American Kestrel	**28.0**	14	**low**	**declining**	0	**67% (to 100)**
Wading Birds	23.7	13	varying	varying	0	100% (to 100)
Florida Black Bear	**32.7**	13	medium	stable	**5%**	100% to (100)
Florida Mouse	22.0	**19**	medium	**declining**	**74%**	**17% (to 80)**
Sherman's Fox Squirrel	24.0	**17**	**low**	**declining**	0	**28% (to 80)**
Southeastern Myotis	22.6	**16**	medium	stable	**5%**	100% (to 100)

[1] Species trigger this parameter if the score is $\geq$ 25.9
[2] Species trigger this parameter if the score is $\geq$ 15
[3] Species trigger this parameter if the score is $\geq$ low or unknown (unk)
[4] Species trigger this parameter if the score is $\geq$ declining (decl) or unknown (unk)
[5] Species trigger this parameter if the score is $>$ 0
[6] Species trigger this parameter if the score is $\leq$ 75%
[7] SGCN = species of greatest conservation need

Branan Field Mitigation Park WEA Locator Map



Bell Ridge Longleaf WEA Locator Map



Section 1: Introduction

The FWC manages the lands in the Wildlife Management Area system using a proactive approach, which includes an understanding of natural communities of plants and animals. As applied by FWC, natural community management starts by classifying lands into distinct natural communities that we then manage in a way that maintains or enhances the communities' unique structure and function. This ecological management of natural communities improves and restores the habitats upon which wildlife depends. Land management that has a positive influence on the natural community condition benefits the wildlife living in these habitats.

Another important aspect of FWC's management approach is ensuring that it is science-informed and meets the needs of Florida's wildlife. The agency's Wildlife Conservation, Prioritization, and Recovery Program (WCPR) created this Species Management Strategy for BRLWEA and BFWEA to inform and guide management on the areas, and to verify that area management is meeting the needs of wildlife. The FWC intends for this Strategy to: 1) provide land managers with information on management actions that should be taken provided the necessary resources are available; 2) promote the presence and facilitate the persistence of wildlife species on the area; and 3) provide measurable objectives that can be used to evaluate the success of wildlife management on the area.

When developing a Strategy, WCPR staff utilizes concepts that facilitate the analysis and evaluation of an area's opportunities to manage for wildlife. The focal species concept is an approach to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species FWC selected as focal species includes umbrella species, keystone species, habitat specialist species, and indicator species. Other concepts in a Strategy include Objective Based Vegetation Management and Strategic Management Areas. Objective Based Vegetation Management (OBVM) is a method used to assess if vegetation management within natural communities is achieving the desired conditions. A Strategic Management Area (SMA) is a specially designated piece of land where additional management actions are required to address a particular species' needs.

In addition to the concepts discussed above, we use specific definitions in a Strategy. *Goals* are broad statements of a condition or accomplishment to be achieved; goals may be unattainable, but provide direction and inspiration. *Objectives* are a measurable, time-specific statement of results responding to pre-established goals. *Imperiled Species* refers to any plant or animal federally listed under the Endangered Species Act, or state-listed by the Florida Fish and Wildlife Conservation Commission or the Department of Agriculture and Consumer Services.

Creating the BRLWEA and BFWEA Strategy involved a number of steps. First, staff assessed the results of species-specific habitat models and statewide potential habitat maps for focal species to determine which focal species had potential habitat on BRLWEA and BFWEA. We then used staff knowledge, species-expert opinions, and area-specific natural community maps, to modify the statewide models to create area-specific potential habitat maps for each focal species on the areas. Next, we conducted a workshop at which local staff, species experts, and section leaders discussed and evaluated BRLWEA's and BFWEA's potential roles in the conservation of focal species. For each species, workshop participants determined the status of the species on the areas; evaluated the opportunities for management on the areas; specified appropriate monitoring and research actions; and

identified beneficial coordination and 'beyond the boundary' considerations. Using the information from the workshop, staff drafted the Strategy document and sent it to species experts and other professionals for review. Following the review, the Strategy was finalized and staff initiated implementation of actions in the Strategy.

Neither of these WEAs has an Acquisition and Restoration Council approved management plan. As such, having an existing Wildlife Strategy will assist in developing imperiled species related actions and objectives once the process of management plan development is initiated.

While this Strategy focuses on BRLWEA and BFWEA, it considers the role of each area within the larger state or regional context. Similarly, while the Strategy has species-specific objectives and actions, it does not endorse single-species management. Natural community management is the core of FWC's ecological management approach, and by paying special attention to the needs of focal and imperiled species, we verify that our management actions are having the desired effect. By implementing the actions in the Strategy, the FWC believes our management will keep common species common, aid in the recovery of listed species, and benefit the largest suite of native wildlife.

Section 2: Historic, Current, and Planned Management on Bell Ridge and Branan Field Wildlife and Environmental Areas

Both of these properties were acquired under FWC's Fish and Wildlife Habitat Program pursuant to s. 372.074, F.S. The FWC established the Mitigation Park program to provide an offsite compensation alternative to state and federal listed species regulatory decisions. Because of the regulatory and mitigation nature of this program, management activities at mitigation park facilities emphasize the maintenance and restoration of optimum listed species habitat above all other uses and activities.

No staff is assigned specifically to these properties. Rather, a staff that includes 1 Biological Scientist III, 1 Biological Scientist II, and 1 Biological Technician is responsible for the management of Ft. White WEA (1,328 ac., Gilchrist Co.), Suwannee Ridge WEA (1,429 ac., Hamilton Co.), BRLWEA (720 ac., Gilchrist Co.), BFWEA (386 ac., Duval/Clay Cos.), and Lafayette Forest WEA (2,148 ac., Lafayette Co.). Management of 5 areas in 5 counties presents challenges to the assigned staff and requires assistance from additional regional staff. While BRLWEA is within 15 miles of the Ft. White Field Office, BFWEA is in Duval County approximately 85 miles away.

2.1: Location, Acquisition, and Influences on Current Condition

Bell Ridge Longleaf WEA – BRLWEA, situated 8 miles southwest of High Springs, encompasses 720 acres in eastern Gilchrist County. Access to the property from the east is by County Road 337 or from the west by NE 65 Avenue. The surrounding area is a mix of natural pine, pine plantation, irrigated row-crop agriculture, pasture, and rural residential land use.

The FWC purchased BRLWEA in 2008 from The Nature Conservancy (TNC) under the Fish and Wildlife Habitat Program. The regulatory and mitigation directives of the Fish and Wildlife Habitat Program guide the management activities at BRLWEA and require

management that emphasizes the restoration and maintenance of optimum habitat for listed species.

TNC acquired the tract in 1991 from the Galloway family who still owns and manages the 3,000+-acre Canaan Ranch to the west. The Galloway family used dormant season fire on a regular basis to manage the property for northern bobwhite (*Colinus virginianus*) hunting and for selectively-harvested high value timber products such as poles, peeler logs, and saw logs. As a result, BRLWEA contains natural second-growth longleaf pine (*Pinus palustrus*) with intact native ground cover. After TNC's acquisition of the property, fire frequency decreased and hardwood trees and shrubs began to increase in density and coverage.

While the Bell Ridge tract is small and isolated from other public conservation lands, the adjacent Canaan Ranch property is enrolled in the United States Fish and Wildlife Service (USFWS) red-cockaded woodpecker (*Picoides borealis*) Safe Harbor program and is managed for conservation, with an emphasis on management to enhance northern bobwhite habitat. The extensive use of frequent prescribed fire on Canaan Ranch in all longleaf pine with intact native ground cover increases the availability of high quality habitat to many of the focal species found on BRLWEA.

Branan Field WEA – BFWEA encompasses 386 acres in southern Duval and northern Clay Counties, situated 2 miles west of Chaffee Road (SR 23) in Jacksonville and 9 miles north of Middleburg. Oakleaf Plantation Boulevard via the Cecil Field connector accesses the property from the east. The surrounding area is a mix of pine plantation, airport, light industrial, commercial, and residential land use.

The site was purchased in 1990 from the Trust for Public Land under FWC's Fish and Wildlife Habitat Program. The Trust for Public Land acquired the site in 1989 from Gulfstream Properties, Inc. Gulfstream Properties, Inc. managed the site as an industrial pine plantation and for cattle grazing. Between 1980 and 1986, the area was cleared and slash pine (*Pinus elliottii*) plantations were established with approximately 700 trees per acre. While there is no evidence that the previous owners used prescribed fire on the tract subsequent to plantation establishment, the native ground cover on the tract remained intact and has responded well to the reintroduction of regular prescribed fire.

Cecil Field airport is on the north half of BFWEA's western boundary and Cecil Field Conservation Corridor (CFCC) is on the south half of the western boundary. Formerly part of Cecil Field Naval Air Station, CFCC is 5,300 acres that consists of primarily pine plantations and wetlands. The CFCC forms a corridor from Jennings State Forest (JSF) north, along the west side of Cecil Field, to Interstate 10. When Cecil Field Naval Air Station closed in 2000, the land contained in the CFCC was deeded to the City of Jacksonville for conservation and public recreation. The Florida Forest Service (FFS) manages the CFCC for the City of Jacksonville. Other nearby public land includes the JSF, Camp Blanding Military Reservation, Sal Taylor Creek Preserve, and McGirts Creek Preserve.

The Cecil Field airport has a very large, deep drainage ditch parallel to the east side of the runway. The ditch turns 90 degrees at the south end of the runway and traverses east bisecting BFWEA and ending in a wetland on private property to the east. This drainage ditch has altered the hydrology of the area and changed the hydroperiod of the ephemeral wetlands and flatwoods adjacent to the ditch. Most of the xeric natural communities on the

area have heavier, less well-drained soils that are more characteristic of flatwoods than xeric uplands.

Private property borders BFWEA on the north, east, and south, and 6,400 acres of this land is a planned unit development known as Oakleaf Plantation. Oakleaf Plantation is currently completing the infrastructure for mixed-use development with development planned to within 0.25 mile of the eastern boundary of BFWEA. According to the Oakleaf Plantation site plan, this 0.25-mile buffer will be managed for silviculture with wetland areas designated as nature preserve. A golf course, high school, commercial town center, police and fire stations, multi-family housing, and single-family housing are completed; additional housing units and a second commercial town center are planned. The ongoing residential and commercial development in the area will make prescribed fire more challenging and will increase the potential for feral cats and dogs to influence wildlife.

2.2: Management and Monitoring Since State Acquisition – BRLWEA

Sandhill is the only natural community on BRLWEA, occurring on all 720 acres. All of BRLWEA's sandhill community remains in good condition with intact ground cover and the Florida Natural Areas Inventory (FNAI) identified a sandhill community reference site on the area. The FNAI will add the data they collected on BRLWEA to their Reference Natural Community Website in the spring of 2013. Most of BRLWEA's focal species are adapted to open canopied uplands with fire-maintained herbaceous ground cover. Therefore, frequent fire is essential to maintaining suitable habitat for these species.

A decrease in the use of prescribed fire from 1993 to 2008 resulted in artificially high amounts of hardwoods. The removal of the small oaks was necessary to prevent shading of ground cover and facilitate fire management. During the early growing season of 2009, FWC implemented a project to control the excess small hardwoods while retaining appropriate mature hardwoods. Hand crews used chainsaws to cut down excess small oaks on 632 acres. To prevent re-sprouting, crews applied a Garlon treatment to the cut stumps. Basal treatment of small oaks with Velpar–L was used on an additional 66 acres.

The FWC is implementing a prescribed burn program to prevent hardwood encroachment, lessen the chances of catastrophic wildfires, and enhance natural communities for the benefit of wildlife. BRLWEA contains 720 acres of fire-maintained sandhill natural community. Intact native ground cover provides the continuous fine fuels required to maintain frequent prescribed fire. Since State acquisition, FWC has conducted prescribed burns on all fire maintained acres at least twice, reestablishing a 2-3 year fire return interval. BRLWEA is now in a maintenance condition and the continued use of prescribed fire on a 2-3 year return interval will be the primary tool used for management. Growing season burns are preferred, but occasional dormant season burns are necessary to reduce excessive fuels or maintain fire frequency when conditions do not permit the safe application of fire in the growing season.

FNAI conducted a floristic assessment in May of 2009. This survey identified 109 species of plants on BRLWEA. Sandhill spiny-pod (*Matelea pubiflora*), listed as endangered by the state, was the only rare plant identified. Small groups of this plant occur across BRLWEA. Other rare plant species may occur on BRLWEA in the future, particularly species that were dormant or have different flowering phenology such that they were not found in the 2009 assessment.

Surveyors noted 2 exotic species, a single camphor tree (*Cinnamomum camphora*) and a single sapling mimosa (*Albizia julibrissin*). The camphor tree, a Florida Exotic Pest Plant Council (FLEPPC) Category I species, was located along the southeastern boundary. The mimosa, a FLEPPC Category II species, was identified near the center of the property. Staff treated these individuals and will monitor periodically for these and other invasive exotic plants.

Recreational activities on BRLWEA include hiking and bird watching. BRLWEA, which is open to the public year round, has a handicapped accessible parking area with an informational kiosk. No hunts occur on BRLWEA, primarily due to the small size of the unit.

Wildlife monitoring by FWC on BRLWEA includes gopher tortoise (*Gopherus polyphemus*) surveys, Florida mouse (*Podomys floridanus*) surveys, and southeastern American kestrel (*Falco sparverius paulus*) nest box monitoring. The survey results are included in the species assessments. Proposed species monitoring (Section 5.2) on BRLWEA includes continued monitoring of kestrel nest boxes, surveys for Florida mice, and gopher tortoise burrow surveys.

2.3: Management and Monitoring Since State Acquisition – BFWEA

The FNAI completed plant community mapping at BFWEA as part of FWC's OBVM program (Table 1). Sandhill, and mesic flatwoods are the actively managed natural communities on BFWEA. Basin swamp, xeric hammock, depression marsh, ruderal, and dome swamp are other natural communities embedded within, or adjacent to, actively managed communities that are subject to management activities. The FWC uses prescribed fire, along with mechanical and chemical vegetation control in the actively managed communities on BFWEA. Through the OBVM process, staff delineated management units and defined Desired Future Conditions (DFCs) for these actively managed natural communities. Many of BFWEA's focal species are adapted to open canopied uplands with fire-maintained herbaceous ground cover; therefore, frequent fire is essential to maintaining suitable habitat for these species. Additionally, several of the focal species require fire-maintained ephemeral wetlands with grassy ecotones occurring in these upland habitats.

The primary management activity on BFWEA is the continued use of prescribed fire. The previously suppressed ground cover has recovered with the resumption of fire management and removal of the closed pine canopy. An intact ground cover provides the continuous fuels required to maintain frequent growing season fire.

The FWC is implementing a prescribed burn program to reduce fuel loads, decrease the chance of catastrophic wildfires, and enhance natural communities for the benefit of wildlife. BFWEA contains 343 acres of fire-maintained natural communities. To date, FWC has treated all fire-maintained acres on a 2-3 year fire return interval. As a result, all fire-maintained acres have burned 5-6 times since acquisition. Growing season burns are preferred, but occasional dormant season burns are necessary to reduce excessive fuels or maintain fire frequency when conditions do not permit fire in the growing season. Staff enlarged perimeter firebreaks to a 30 foot width in 2006 to allow improved access and to increase safety for prescribed burn crewmembers.

At the time of acquisition, BFWEA was a pine plantation that consisted of densely planted off-site slash pine. The trees were about 10 years away from merchantability and

canopy closure was beginning to shade out the desirable ground cover. In 1992, staff intentionally used a hot prescribed fire as a pre-commercial thinning technique for young slash pine plantations in management unit (MU) BF2. The objective for the burn was to achieve 80% kill of pines. However, heavy rains after the burn limited kill to approximately 60%. In 1993, area managers contracted the planting of 20,000 longleaf seedlings in MU BF2 (approximately 400 trees per acre) to replace the off-site slash pine that was killed and to initiate stand conversion. During 1998, staff used a timber sale to remove approximately 75% of the standing timber in MUs BF1, BF3, and BF4 to open up the canopy and promote understory growth for the benefit gopher tortoises and other wildlife.

Table 1. Mapped acreage of current and historic communities on BFWEA, including management status and the number of focal species that use the community.

Community Type	Estimated Current Acreage	Estimated Historic Acreage	# of focal species that use the NC
Basin swamp	22	22	3
Depression marsh	1	1	3
Dome swamp	20	20	5
Mesic flatwoods	131	131	9
Ruderal	1	0	0
Sandhill[1]	83	86	10
Wet flatwoods[1]	125	50	5
Wet Prairie	0	76	3
Xeric hammock	3	0	7
TOTAL ACRES	386		

[1] Actively managed communities monitored via the OBVM process. Other communities may be managed, but are not be monitored via OBVM.

Exotic species observed on BFWEA include Chinese tallow tree (*Sapium sebiferum*) and feral hogs (*Sus scrofa*). Chinese tallow trees occupied a single patch along the ditch that traverses BFWEA draining the Cecil Field runway. Staff treated the tallow tree area in 2006. Staff regularly monitors this area, and has not observed any new tallow trees since that treatment. The feral hog problem is not severe.

Recreational activities occurring on BFWEA include hiking and bird watching. BFWEA has an informational kiosk and signage, a system of well-marked hiking trails, and limited parking. No hunts occur on BFWEA, primarily due to the small size of the unit.

Due to the small size of the area as well as the distance from the Ft. White field office, current species monitoring on BFWEA is limited to gopher tortoise surveys and a Florida mouse survey. Gopher tortoise burrow surveys are conducted every 5 years to track population trends. Staff conducted a Florida mouse survey in February 2012, but did not catch any Florida mice. More details on these monitoring efforts are included in the species assessments.

Section 3: Area Focal Species

The FWC's management approach focuses on maintaining and restoring the ecological form and function of natural communities. However, in some instances, it is important to consider the needs of specific wildlife species and to monitor the influences of natural community management on these species. To achieve a science-informed approach to species management, the FWC uses the focal species concept embraced by the Wildlife Habitat Conservation Needs in Florida (WHCNiFL) project. This concept allows one to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species selected includes umbrella species, keystone species, habitat specialist species, and indicator species.

The Public Lands Conservation Planning (PLCP) project, an expansion of the WHCNiFL project, added a few species and provided potential habitat modeling on public lands. For the PLCP, the FWC selected 60 focal species (including 1 group of species, the wading birds) for which potential habitat models were created to generate statewide potential habitat maps for each focal species. The FWC's 2003 landcover data served as the base layer for all potential habitat models, and staff selected additional layers considering the particular natural history of each species (e.g., species' range, known occurrence records); as such, each model is species specific. Once statewide potential habitat maps were completed, a Population Viability Analysis (PVA) was conducted for each focal species.

The statewide landcover-based habitat models identified 15 of the 60 focal species to have potential habitat on BRLWEA and BFWEA (Section 3.1). For all focal species modeled to have potential habitat on the WEAs, staff created more accurate area-specific potential habitat maps by using the same statewide models but replacing the landcover data with area-specific natural community data. The resulting area-specific potential habitat maps were then refined based on the input of local managers and species experts.

The WCPR Workshop for the North Central Region WEAs, held September 16-17, 2009, brought decision makers together to assess species' opportunities and needs, identify measurable objectives, outline necessary coordination efforts, and determine required actions such as monitoring. To facilitate informed discussion of the species, WCPR staff compiled a workbook that contained information on the focal species. Participants at the workshop discussed the "level of opportunity and need" for each species. This included considering the number of statewide prioritizations the species triggered (Statewide Species Prioritization Table), the species' listing status, and the long-term security of the species (i.e., examining PVA results). Other factors considered were the species' use of actively managed communities (Table 1), species' response to management, and any local overriding factors (e.g., status of species in the region, local declines or extirpations). A brief summary of the opportunity and need assessments for each focal species is available in Section 3.2.

3.1: BRLWEA and BFWEA Focal Species List

Workshop participants assessed 15 species for their level of opportunity or need on BRLWEA and BFWEA. In the following species list, we use a [1] to denote species for which a measurable objective is identified, a [2] for species for which some level of monitoring is recommended, a [3] for species for which a SMA is recommended, and a [4] for species for which species management is recommended. Because these conservation lands are separated

by a long distance, some species have potential on only one of the areas. We use a [5] to indicate species that only have potential on BRLWEA, and a [6] for species that only have potential on BFWEA. Workshop participants and expert reviewers determined that ongoing management would meet the needs of these species, except for those species identified with a superscript number. Therefore, for species with no numerical superscripts, participants and reviewers agreed there is no need for measureable objectives, monitoring, SMAs, or species-specific management.

Occasionally, statewide models indicate a species has potential habitat on the area, but the local assessment indicates there is little opportunity to manage for these species. These limited opportunity species are denoted with an *.

Frosted flatwoods salamander (*Ambystoma cingulatum*) [6]
Striped newt (*Notophthalmus perstriatus*)*

Florida pine snake (*Pituophis melanoleucus mugitus*) [5]
Gopher tortoise (*Gopherus polyphemus*) [1, 2]

American swallow-tailed kite (*Elanoides forficatus*)
Bachman's sparrow (*Peucaea [Aimophila] aestivalis*)
Brown-headed nuthatch (*Sitta pusilla*)
Cooper's hawk (*Accipiter cooperii*)*
Northern bobwhite (*Colinus virginianus*)
Southeastern American kestrel (*Falco sparverius paulus*) [1, 2, 4, 5]
Wading birds (*Multiple spp.*)*

Florida black bear (*Ursus americanus floridanus*)*
Florida mouse (*Podomys floridanus*) [1, 2]
Sherman's fox squirrel (*Sciurus niger shermani*)
Southeastern bat (*Myotis austroriparius*)*

3.2: Focal Species Opportunity and Needs Assessment

This section provides an assessment of each focal species' need and opportunity for management. The assessment considers a number of attributes, including the status of a species, the number of prioritization parameters it triggers, the species' response to management, and the amount and spatial arrangement of species' potential habitat available on the area. Because all federally listed wildlife species are FWC-listed, we will provide only the federal listing status for federally listed species. When a species is not federally listed but is FWC-listed, we will provide the FWC listing status. The FWC is currently in the process of developing management plans for FWC-listed species. Staff will review these plans to determine if the content warrants a revision to any of these assessments and will revise this Strategy as warranted.

Unless otherwise noted, all reported acres of potential habitat are the result of using the area-specific natural community data in the species' potential habitat model. These estimates include all the area mapped as potential habitat, including patches that may not be contiguous with other suitable habitat. During the workshop, participants considered the

spatial arrangement and habitat patch size when assessing the potential role BRLWEA and BFWEA play in the conservation of each species. For species that require larger habitat patches, we considered the continuity and condition of habitat on lands adjacent to the WEAs. To determine the restoration potential, we inserted the historic natural community data into the potential habitat models and generated the acres of potential habitat that could be obtained if all natural communities are restored.

3.2.1: Frosted Flatwoods Salamander

The USFWS recently recognized the flatwoods salamander (*Ambystoma cingulatum*) to be 2 distinct species; the frosted flatwoods salamander (*A. cingulatum*), which occurs east of the Apalachicola River, and the reticulated flatwoods salamander (*A. bishopi*), which occurs west of the Apalachicola River. The USFWS lists the frosted flatwoods salamander as threatened, and the reticulated flatwoods salamander as endangered.

Managing habitat for frosted flatwoods salamanders requires frequent prescribed fire and protection of the hydrological integrity of ephemeral wetlands, which are essential for breeding. The maintenance of a continuous herbaceous ground cover from the uplands through the ecotone and into the wetlands is especially important for this species.

As evaluated prior to the taxonomic revision, the species triggers 4 of the 6 prioritization parameters (priorities table). Because many of the prioritization parameters were calculated prior to the recognition that the flatwoods salamander was 2 distinct species, it is possible that if the prioritization scores for these species were calculated reflecting the recent taxonomic revision, the 2 species may trigger more prioritization parameters.

No potential habitat for the frosted flatwoods salamander occurs on BRLWEA, and this species is not a focal species for BRLWEA. Models indicate 276 acres of potential habitat for the frosted flatwoods salamander on BFWEA. The frosted flatwoods salamander has not been searched for and is not documented on BFWEA. There are currently no plans for FWC herpetologists to survey BFWEA, which they consider a low priority for this species. The nearest known occurrence of the species is from a 1982 record of the species approximately 7 miles north of Cecil Field Airport on what is now the CFCC. While the JSF has modeled potential habitat for the frosted flatwoods salamander, the species has not been observed on the property.

While the literature does not identify how much habitat is required to support a population of flatwoods salamanders, it is unlikely BFWEA has enough potential habitat to independently sustain a population of this species. If a population remains on CFCC or JSF, the habitat on BFWEA can help support this local population.

The goal on BFWEA is to maintain suitable habitat for the frosted flatwoods salamander that would allow the area to help support a regional population should they occur on adjacent public lands. To meet this goal, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. If frosted flatwoods salamanders occur on or near BFWEA, ongoing natural community management focused on frequent growing season prescribed fire will improve habitat conditions for this species. Growing season prescribed fire will promote herbaceous growth in the uplands as well as in ephemeral wetlands and create conditions compatible with this species' needs. Additional land management considerations can be found in Section 4.3.1.

3.2.2: Florida Pine Snake

There is no documentation of Florida pine snakes (*Pituophis melanoleucus mugitus*) on BRLWEA or BFWEA, but no effort has been made to systematically survey either site for herpetofauna other than the gopher tortoise. The Florida pine snake has been documented on private lands adjacent to BRLWEA, and the surrounding landscape is well suited for pine snakes. Therefore, it is likely the species uses BRLWEA. There are no observations of Florida pine snakes near BFWEA, and there is little suitable habitat in the surrounding landscape.

Specific habitat requirements of this species are not well defined, except it is most closely associated with upland pine and sandhill communities. Pine snakes typically occupy locations with sandy soils dominated by pines and a well-developed grassy understory, though they have been documented in a number of plant communities. Southeastern pocket gophers (*Geomys pinetis*) are a preferred prey item. Florida pine snakes are commonly found in pocket gopher burrows but also may be found in stump holes and, occasionally, in gopher tortoise burrows. Southeastern pocket gopher burrows are evident on all of BRLWEA but are less common on BFWEA.

The Florida pine snake triggers 3 of 6 prioritization parameters (priorities table) and is an FWC-listed species of special concern. Based on a recent biological status review, the pine snake will be a threatened species after approval of the management plan that is currently in development. According to the literature, pine snakes and eastern indigo snakes (*Drymarchon couperi*) have similar home range sizes, and at least 2,471 acres of suitable habitat are required to support a viable population of pine snakes. Models identified 720 acres of potential habitat on BRLWEA and only 86 acres on BFWEA. BRLWEA has enough potential habitat in good condition to provide a significant contribution to the local population. Continued use of frequent prescribed fire will benefit this species. Privately owned property near BRLWEA is in fair to good condition for this species. The persistence of the Florida pine snake on BRLWEA is dependent upon management decisions made by private landowners. Therefore, we recommend coordination with Conservation Planning Services (CPS) staff to ensure cooperation with surrounding landowners in conservation efforts (Section 6.1.3).

Potential habitat on BFWEA is in good condition, but this habitat is isolated from potential habitat on CFCC and JSF. Most of the surrounding private land is under development and is unsuitable. Further, most of the xeric natural communities on BFWEA have heavier, less well-drained soils that are more characteristic of flatwoods than xeric uplands. Because Florida pine snakes prefer sandy, xeric soils, it is possible BFWEA was never high quality pine snake habitat. Since the opportunity for conserving the Florida pine snake on BFWEA is limited, no goal is recommended.

Management actions that maintain or enhance habitat for this species include prescribed fire and ground cover restoration treatments that aid in restoring sandhill and associated natural communities. Stumps and other coarse woody debris should be retained during land management activities (Section 4.3.2).

Because there is no adequate monitoring technique available for this species, opportunistic monitoring is recommended (Section 5.2.4) on both WEAs. If resources are available to conduct drift-fence surveys on the WEAs, the use of large snake traps in addition to funnel and pitfall traps is recommended. Drift-fence surveys should be repeated at

approximately 10-year intervals, if resources are available. While these surveys will not provide population level information, they can produce indices to the relative abundance of terrestrial herpetofaunal species.

The goal on BRLWEA is to continue to manage habitat to support pine snakes. To meet this goal, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. The continued presence of this species on BRLWEA is dependent on conditions that influence the regional population. However, the occurrence of large tracts of well-managed private lands, including lands managed for conservation, increases the opportunity for Florida pine snakes to persist on BRLWEA.

3.2.3: Gopher Tortoise

The FWC purchased BRLWEA and BFWEA to secure habitat for the gopher tortoise and other upland species as mitigation for habitat loss to land development activities. As such, management to benefit this species is the priority. Staff conducted a gopher tortoise survey on BRLWEA prior to acquisition and estimated a density of 2.25 tortoises per acre. On BFWEA, a survey by staff in 2012 yielded a density estimate of 1.05 tortoises per acre. While this is lower than the estimate of 1.4 tortoises per acre in 2006, or the estimate of 1.5 tortoise per acre in 1994, these densities are within the range of average densities in good gopher tortoise habitat. These densities, coupled with evidence of reproduction and recruitment, indicate a sustainable population.

The gopher tortoise is a management-responsive species that can serve as an indicator of properly managed upland pine or grassland communities. It prefers xeric upland communities maintained with fire, which helps perpetuate the ground cover on which it feeds. The gopher tortoise is often considered a keystone species because many other species use their burrows, including focal species such as the Florida mouse and gopher frog. This species is listed as threatened by the FWC and triggers 4 of 6 prioritization parameters (priorities table). The FWC gopher tortoise management plan, revised in 2012, places emphasis on increasing the number of tortoises on public lands.

Models indicate 720 acres of potential habitat on BRLWEA. On BFWEA, models only consider 86 acres of sandhill as potential habitat, but gopher tortoises inhabit an additional 131 acres mapped as mesic flatwoods. There is discussion in the literature about the minimum requirements to sustain a population of gopher tortoises, with estimates ranging from 50–200 or more acres. The USFWS suggests the use of 250 acres for identifying potential viable populations. While BRLWEA has enough habitat to sustain a viable population of gopher tortoises, BFWEA is below the threshold being recommended by the USFWS. However, when adding the acres included in the in the CFCC and Oakleaf Plantation buffer, it is likely BFWEA can sustain a viable population of gopher tortoises.

Ongoing natural communities management emphasizing the frequent use of prescribed fire to promote a diverse ground cover and open tree canopy will benefit gopher tortoises. Additional land management considerations are found in Section 4.3.3. Based on the life history of this species and the rate at which it responds to management, workshop participants reached consensus that monitoring on a 5-year interval is appropriate (Section 5.2.1).

The goal is to sustain a viable gopher tortoise population on both of these WEAs. To meet this goal, staff will continue to apply prescribed fire in an effort to maintain the habitat in a condition that will support the species. The measurable objective is to:

1. Track changes in the population trend by monitoring every 5 years.

3.2.4: American Swallow-Tailed Kite

The American swallow-tailed kite (*Elanoides forficatus*) is occasionally seen around BRLWEA and BFWEA, but nesting has not been documented on either area. The swallow-tailed kite uses a variety of natural communities, requiring a mosaic of tall trees for nesting habitat and open areas for foraging habitat. Dominant trees taller than the surrounding trees are preferred for nesting sites. Shrub height and density tends to be higher around nest sites than in the surrounding area. Currently few potential nest sites exist on BRLWEA or BFWEA, but nest sites may occur on adjacent properties.

American swallow-tailed kites trigger 4 of 6 statewide prioritization parameters (priorities table). Models indicate 720 acres of potential habitat on BRLWEA and 236 acres on BFWEA; but on both areas, this is primarily foraging habitat. While it is unlikely that any WMA/WEA could independently support a population of this wide-ranging, migratory species, this species tends to continue to use nest sites as long as the habitat remains suitable. Therefore, even smaller acreage areas can have a role in the conservation of the species. Given the generalist nature of this species and its high mobility, it is not considered management dependent, though it does benefit from active management to restore natural communities, provided nest sites are not disturbed. Thinning of pine plantations can help improve the forest structure and increase the use of these areas by swallow-tailed kites. Timber management that favors open, mature stands of native pine will benefit this species in the long-term.

Prescribed fire and actions that aid in restoring natural community structure should continue to maintain and enhance habitat for this species. Cooperation with the Avian Research and Conservation Institute (ARCI) for future monitoring efforts is encouraged to further define the regional needs of the species. If nests are located on the area, management recommendations around these sites should be considered (Section 4.3.4) and the nest reported to ARCI (Section 6.3). If swallow-tailed kite nesting activity is observed, this information should be documented and reported (Section 5.2.4).

The goal is to provide suitable habitat for the American swallow-tailed kite that will allow individuals using the WEAs to continue to function as part of a regional population. To meet this goal, staff will continue to apply prescribed fire to maintain the habitat in a condition that will meet the foraging needs of the species. The continued presence of this species on these areas is dependent on conditions that influence the regional population.

3.2.5: Bachman's Sparrow

Bachman's sparrows (*Peucaea [Aimophila] aestivalis*) are commonly heard on both WEAs, and Bachman's sparrows have been documented on JSF nearby BFWEA. Both areas also have adjacent lands that are managed to provide suitable habitat for Bachman's sparrow. Nesting has not been documented on either WEA, but is likely occurring on both WEAs. No specific monitoring to determine the spatial distribution or relative abundance of Bachman's

sparrows has been completed on either WEA.

The Bachman's sparrow triggers 2 of 6 prioritization parameters (priorities table) and is currently experiencing range-wide population declines. On BRLWEA, models identified 720 acres of potential habitat. On BFWEA, models identified 214 acres of potential habitat. Literature suggests a viable population can be maintained on around 520 acres, which suggests BRLWEA has enough potential habitat to maintain a viable population of Bachman's sparrows. BFWEA in conjunction with adjacent conservation lands will contribute to sustaining a regional population, providing appropriate management can be applied.

Bachman's sparrows prefer mature pine forests with a low basal area and healthy herbaceous vegetation, well-maintained dry prairie, or early-successional old-field habitat. The Bachman's sparrow is responsive to management and the occurrence of frequent fire is critical to sustaining habitat for this species. Use of an area by Bachman's sparrows declines rapidly around 18 months post-fire and sites are typically abandoned if fire is excluded for ≥3 years. Current land management focusing on the frequent use of prescribed fire on both WEAs will continue to improve and maintain suitable habitat for Bachman's sparrow. Additional land management recommendations for Bachman's sparrow can be found in Section 4.3.5.

Staff does not monitor Bachman's sparrows on either BRLWEA or BFWEA, largely due to the small size of these areas and limited resources. Staff visiting the area for other duties readily detect Bachman's sparrows, and should document these observations when they occur during the early spring and summer and overlap nesting season (Section 5.2.4).

The goal for BRLWEA is to provide suitable habitat for the Bachman's sparrow and support a viable population. The goal for BFWEA is to provide suitable habitat for the Bachman's sparrow and contribute to sustaining the regional population. To meet these goals, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. The continued presence of this species on BFWEA is dependent on conditions that influence the regional population. However, adjacent public conservation lands increase the likelihood that Bachman's sparrows will persist on BFWEA, provided beneficial management that includes the use of frequent fire can be applied.

3.2.6: Brown-Headed Nuthatch

Brown-headed nuthatches (*Sitta pusilla*) are commonly heard on both WEAs. Nesting has not been documented, but is likely on both WEAs. No specific monitoring to determine the spatial distribution or relative abundance of brown-headed nuthatches has been completed on either WEA. Brown-headed nuthatches are dependent on open stands of mature pine. Older pine forests (>35 years for longleaf or slash pine) and stands with basal area between 35–50 ft^2/acre are preferred, although nuthatches can use pine stands with younger trees and higher basal areas. This cavity-nesting species is dependent on the presence of snags for suitable nesting habitat. Unfortunately, to the detriment of the nuthatch, land management activities frequently knock over these snags. Both WEAs have numerous snags available and staff avoids unnecessary disturbance of these snags. Both areas also have adjacent lands that are managed to provide suitable habitat for brown-headed nuthatches.

This species triggers 2 of 6 prioritization parameters (priorities table) and is currently

experiencing range-wide declines due to habitat loss and degradation. Models identified 720 acres of potential habitat on BRLWEA, and 214 acres on BFWEA. Literature suggests between 320 and 1,000 acres of suitable habitat are necessary to support a viable population of this species. Given this, BRLWEA may have enough potential habitat to maintain a viable population, and BFWEA, in conjunction with adjacent conservation lands, will contribute to sustaining a regional population of brown-headed nuthatches. Potential habitat on private lands adjacent to each area is unevenly distributed, and in varying degrees of suitability to the species.

Management actions that aid in restoring natural community structure, such as frequent prescribed fire, or thinning and other silvicultural activities favoring mature timber, maintain or enhance habitat for this species. Current land management focused on the frequent use of prescribed fire on both WEAs will continue to improve and maintain suitable habitat for brown-headed nuthatches. Additional land management recommendations for brown-headed nuthatches can be found in Section 4.3.6.

Staff does not monitor brown-headed nuthatches on either BRLWEA or BFWEA, largely due to the small size of the areas and limited resources. Staff visiting the area for other duties readily detect brown-headed nuthatches, and should document these observations when they occur during the early spring and summer and overlap nesting season (Section 5.2.4).

The goal for BRLWEA is to provide suitable habitat for brown-headed nuthatches and support a viable population. The goal for BFWEA is to provide suitable habitat for brown-headed nuthatches to contribute to the regional population. To meet these goals, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. For BFWEA, the availability of potential habitat on adjacent public conservation lands increases the likelihood that brown-headed nuthatches will persist.

3.2.7: Northern Bobwhite

Although systematic efforts to document local distribution and relative abundance of northern bobwhite have not been attempted, staff regularly see and hear the species on BRLWEA and BFWEA. Further, the private land adjacent to BRLWEA is managed to enhance the northern bobwhite population. Bobwhites are associated with open canopy forests and grassland communities dominated by warm-season grasses, legumes, and patchy bare ground. Bobwhites depend on multiple early-succession habitats that are well interspersed to meet their annual requirements. Areas with abundant native warm-season grasses and herbaceous annual vegetation are used for raising broods and foraging. Shrubs or other thickets are useful as roosting habitat or escape cover. Managers can use the frequent application of prescribed fire to create the mosaic of vegetation conditions this species requires to meet its life history needs.

The bobwhite is a game species and is not listed at either the FWC or federal level. This species triggers 2 of the 6 statewide prioritization parameters (priorities table); however, BBS data indicate a 3% decline per year range-wide with a 4.0% decline per year in Florida. As a result, this species has become the focus of a number of ongoing conservation initiatives and the FWC approved the Strategic Plan for Northern Bobwhite Restoration in Florida in 2007. The ongoing range-wide population declines, its popularity as a game bird, the

potential to increase habitat quality, and the many conservation initiatives for this species make it a medium priority species on both WEAs.

Models indicate 720 acres of potential habitat on BRLWEA. Literature suggests that 2,000–4,000 acres are necessary to support a viable population. The potential habitat on BRLWEA is good quality, and this relatively small acreage is supplemented by more than 3,000 acres on Canaan Ranch to the west, which is managed for bobwhite hunting. Therefore, the opportunity for bobwhite conservation on BRLWEA is high.

Models indicate 342 acres of potential habitat on BFWEA. The potential habitat on BFWEA is good quality and there is additional habitat in fair to good condition on CFCC and JSF. However, the proximity of BFWEA to residential development makes free-ranging or feral cats a significant risk to sustaining a population of bobwhites. Sustaining bobwhites on BFWEA will be more challenging, but the species should persist with continued use of prescribed fire.

Current land management focused on the frequent use of prescribed fire on both WEAs will continue to improve and maintain suitable habitat for bobwhites. Additional land management recommendations for bobwhites can be found in Section 4.3.8. Staff does not monitor bobwhites on either BRLWEA or BFWEA, largely due to the small size of the areas and limited resources. Staff visiting the area for other duties readily detects bobwhites. When conducting management activities during the northern bobwhite nesting season (early spring and summer), staff should document these observations (Section 5.2.4).

The goal for both WEAs is to provide suitable habitat for the bobwhite and contribute to sustaining the regional population. To meet this goal, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. The continued presence of this species is dependent on conditions that influence the regional population. However, the condition and management of adjacent private lands increases the opportunity for conservation of northern bobwhites on BRLWEA. On BFWEA there is adjacent public conservation lands to the west that support the regional population, but the urbanization of land to the east will present a challenge to maintaining northern bobwhites on BFWEA.

3.2.8: Southeastern American Kestrel

The southeastern American kestrel is observed frequently on BRLWEA, which is located within the core breeding range of the species. Staff installed 4 nest boxes on the area in 2011, and monitors these boxes according to protocol developed by FWC's Fish and Wildlife Research Institute (FWRI). Kestrels nested in 2 of the nest boxes in 2012, but both nests failed to fledge young. One nest may have been depredated and the other appeared to have been abandoned when the eggs failed to hatch. Staff frequently observe kestrels using natural cavities in snags on BRLWEA, which may be preferred over the nest boxes. Additionally, significant quantities of private lands near BRLWEA are managed in a fashion compatible with the needs of this species.

Southeastern American kestrels utilize upland habitats, including sandhills, longleaf savannas, pastures, sand pine scrub, and prairies. As a secondary cavity-nesting species, southeastern American kestrels use previously excavated cavities in large snags. They will utilize artificial cavities when placed in areas of suitable habitat. They require adequate perch sites within foraging areas for hunting, low ground cover (<1 ft), and an open canopy

(<20% cover). Average breeding territory size is 125 acres, though more area may be necessary if the habitat quality is marginal.

Southeastern American kestrels are listed by the FWC as a threatened species and trigger 4 of 6 prioritization parameters (priorities table). Models did not identify any potential habitat for this species on BFWEA, and therefore the southeastern American kestrel is not a focal species for BFWEA. Models indicate 720 acres of potential habitat for southeastern American kestrels on BRLWEA. The level of opportunity on BRLWEA is high, given the quality of potential habitat and the fact that southeastern American kestrels already use, and nest on, the area.

Management actions that maintain or enhance habitat for this species include prescribed fire and management favoring mature, open stands of longleaf pine. Additional land management considerations including the protection and creation of snags can be found in Section 4.3.9. Monitoring for southeastern American kestrels will continue according to a protocol developed by FWRI as part of a statewide kestrel nest box monitoring program (Section 5.2.2). Staff shares the results of this monitoring with FWRI (Section 6.1.2) and uses the results to assess the need for additional nest boxes (Section 5.1.1).

The goal is to promote suitable foraging and nesting habitat for southeastern American kestrels that will allow individuals using BRLWEA to function as part of a regional population. While the continued presence of this species is dependent on conditions that influence the regional population, Southeastern American kestrels are likely to persist on BRLWEA. The measurable objectives are to:

1. Maintain at least 4 functional nest boxes within suitable habitat on BRLWEA.
2. Evaluate the use of available nest boxes and the suitability of adjacent habitat to determine the need for additional boxes or alternative sites.

3.2.9: Florida Mouse

Florida mice are abundant on BRLWEA, but, despite efforts to locate them, staff has not documented the species on BFWEA. This species occurs in fire-maintained xeric uplands that have well-drained, sandy soils. While acorns are an important food source for this species, having a diverse ground cover that provides a diversity of food throughout the year is equally important. Abundance of Florida mice is highest in areas supporting early successional vegetation; populations decline as natural communities become more densely vegetated, more heavily shaded, and more mesic. The Florida mouse is an obligate commensal of the gopher tortoise, and may not be able to persist long-term on sites where tortoises are absent.

Maintenance of native sandhill ground cover along with fire-tolerant oak species will help ensure that Florida mice will have food resources available throughout the year. Fire-tolerant oak species such as dwarf live oak (*Quercus minima*), bluejack oak (*Q. incana*) sand live oak (*Q. geminata*), turkey oak (*Q. laevis*), and sand post oak (*Q. margarettae*) distributed in small clumps, or individually throughout the landscape, provide important food and habitat structure for the Florida mouse and other species.

The Florida mouse triggers 4 of 6 prioritization parameters (priorities table) and is listed by FWC as a species of special concern. Based on a recent biological status review, the Florida mouse does not warrant listing. The species will remain a species of special

concern until the FWC approves a management plan for the species, and approves the rule change removing the species from the list.

On **BRLWEA**, Florida mice are abundant. So much so, that beginning in February 2012, Species Conservation Planning (SCP) staff with assistance from WHM staff initiated a study on BRLWEA to examine the effects of prescribed fire on Florida mouse demographics and survival. Staff trapped mice prior to scheduled burns on the area and 4 post-fire trapping events have been conducted. Preliminary data analysis indicates a healthy population. Trap success was very high with 318 mice ear-tagged through October of 2012, including pregnant and lactating females, scrotal (reproductively active) males, and many juveniles. SCP staff plans to continue this effort through several prescribed fire cycles to assess seasonal vs. fire-related trends in survival.

Models indicate 720 acres of potential habitat on BRLWEA. Literature suggests Florida mice require 75–200 acres of suitable habitat to support a viable population. Based on this information, with appropriate management, BRLWEA can support a viable population of Florida mice. This species is management responsive and there is the opportunity for management on BRLWEA to have a significant influence; therefore, it is a high priority species. The current study of Florida mice on BRLWEA is scheduled to continue through 3 prescribed fire cycles ending in 2016. The current study collects more data and monitors with greater intensity, but the layout of transects and the individual trapping stations are the identical to the standard Florida mouse occupancy protocol. Subsequent to the completion of the current study the standard monitoring protocol will be repeated on a 5-year interval (Section 5.2.3).

The goal on BRLWEA is to maintain a viable Florida mouse population. The main action staff will take to affect this goal is to continue to manage the sandhill with frequent prescribed fire, with an emphasis on growing season burns. The measurable objective is to:

1. Conduct follow-up surveys on a 5-year interval to monitor persistence of populations.

Despite surveys specifically looking for the Florida mouse, staff has not documented the species on **BFWEA**. In February 2012, WHM staff conducted a trapping effort within 2 management units of BFWEA that had gopher tortoise burrows, intact ground cover, and had been treated with fire on a 2-year rotation. No Florida mice were captured during 160 trap-nights. The northwest regional SCP biologist has previously attempted to catch Florida mice on BFWEA with no success. Staff should conduct one more presence/absence sampling effort on BFWEA within the next 3-5 years (Section 5.2.3). If no Florida mice are captured, the species should not be considered a focal species on BFWEA. If Florida mice are captured, this assessment should be revisited.

While models did identify 85 acres of potential habitat for the Florida mouse on BFWEA, this is near the lower threshold of what is needed to support a viable population. Additionally, most of the xeric natural communities on BFWEA have heavier, less well-drained soils that are more characteristic of flatwoods than xeric uplands. Because Florida mice prefer sandy, xeric soils, it is possible BFWEA was never high quality Florida mouse habitat. Further, the closest modeled potential habitat on conservation lands is greater than 2 miles distant on JSF. As such, until Florida mice are documented on site, we will not draft a goal for the area. The measurable objective is:

1. Conduct a Florida mouse survey in suitable habitat on BFWEA by 2018.

3.2.10: Sherman's Fox Squirrel

Sherman's fox squirrels (*Sciurus niger shermani*) are frequently seen on BRLWEA and occasionally seen on BFWEA. In a recent (Aug 2011-Apr 2012) web-based citizen-science survey effort, numerous reports of fox squirrels came from the area surrounding each of these WEAs.

This FWC-listed species of special concern triggers 4 of 6 prioritization parameters (priorities table). Suitable habitat for Sherman's fox squirrel includes longleaf pine sandhills or flatwoods with a mixture of pines and oaks, and a sparse to moderate shrub layer. Sherman's fox squirrels appear to do best in mature longleaf pine stands maintained with fire that results in an open understory with an oak component. Mast-producing hardwoods, especially mature oaks, are important as fox squirrels often use large oaks for nest sites and daytime refugia. In addition, acorns provide a major part of their diet. Mature longleaf pines that produce seed bearing cones are an important energy-rich food source, particularly during summer. A mosaic of habitat conditions across the landscape, including a variety of oaks, ensures a year-round supply of food items that vary seasonally.

Models identified 720 acres of potential habitat on BRLWEA, and 217 acres on BFWEA. The fox squirrel is a wide-ranging species and the literature suggests 2,000-9,000 acres of suitable habitat are required to support a population. Given this, the habitat on these WEAs cannot independently support a local population. The potential habitat on BRLWEA, and the adjacent Canaan Ranch, is generally in good condition. The rest of the private land adjoining the area is in moderate to poor condition for this species. The potential habitat on BFWEA, and on upland portions of CFCC and JSF to the west and south, is generally in fair to good condition. The rest of the land adjoining BFWEA is privately owned and in moderate to poor condition for this species. Therefore, while these WEAs have a role in supporting the regional population, it will be important to maintain additional habitat for fox squirrels on adjacent public and private lands.

Management actions that maintain or enhance habitat for fox squirrels include prescribed fire, mechanical actions that aid in restoring natural community structure, and timber management that results in open, mature pine forests. Additional land management recommendations for fox squirrels are found in Section 4.3.9. Because this species naturally occurs at low densities and can be difficult to detect, no specific monitoring, aside from opportunistic documentation, is recommended (Section 5.2.4).

The goal for these WEAs is to provide suitable habitat for Sherman's fox squirrels that allows the individuals using these WEAs to function as part of the regional population. To meet this goal, staff will continue to apply prescribed fire to maintain the habitat in a condition that will support the species. The continued presence of this species is dependent on conditions that influence the regional population. However, the Galloway plantation and agricultural lands adjacent to BRLWEA increase the opportunity for conservation of fox squirrels. There are adjacent public conservation lands to the west of BFWEA that support the regional population of fox squirrels, but the urbanization of land to the east will present a challenge to maintaining fox squirrels on BFWEA. Because habitat availability and management on private lands affects the continued regional presence of fox squirrels, FWC staff from CPS (Section 6.1.3) should work with private landowners to identify and maintain suitable conditions.

3.2.11: Limited Opportunity Species

Five focal species (striped newt, Cooper's hawk, wading birds, Florida black bear and southeastern bat) were modeled (using statewide data) to have potential habitat on these WEAs but lack reasonable opportunity for management. Opportunistic observations of these species should be documented (Section 5.2.4). If any of these species are documented with increasing regularity, the areas' roles in their conservation should be re-visited. As limited opportunity species, there is no need for SMAs, specific monitoring, goals, or measurable objectives.

Striped Newt- Models did not identify any potential habitat for the striped newt on or within >2.5 miles of BRLWEA. While these models did identify 200 acres of potential habitat for striped newts on BFWEA, the species has not been documented on BFWEA. The closest and most recently documented breeding ponds are on JSF, 4 miles to the southwest. The potential habitat on BFWEA is isolated from these ponds on JSF by a wide swath of mesic and wet flatwoods that are unsuitable for striped newts.

The striped newt triggers 4 of 6 prioritization parameters (priorities table). Potential habitat models indicate 200 acres of habitat for this species, but only 86 acres of sandhill habitat, which can potentially be used by adults. This potential habitat is isolated from other xeric uplands in the area by development and flatwoods. While the continued use of frequent prescribed fire will maintain this potential habitat in suitable condition, there is little opportunity to manage for the species on this small isolated acreage.

Cooper's hawk-The Cooper's hawk has not been observed on BRLWEA and nesting has not been documented. This species is not listed at either the FWC or federal level, and the species triggers 1 of the 6 statewide prioritization parameters (priorities table). No potential habitat is modeled to occur on BFWEA. While the statewide PLCP mapped potential habitat on BRLWEA, area-specific natural community based modeling indicated that no potential habitat occurs on the area. This species nests in a variety of habitats including swamps, floodplain forests, and upland hardwood, which are not found on these WEAs. The Cooper's hawk is not considered management dependent, though it does benefit from active management to restore natural communities, provided nest sites are not disrupted.

Because of the generalist nature of this species, the opportunity for management to have a significant impact on this species at the WEA level is limited. Migrating individuals may forage on the WEAs, but suitable nesting habitat is unlikely to occur on BRLWEA in the future, and Cooper's hawk should not be a focus of management on either of these WEAs.

Wading birds- No potential habitat was identified for this group on BRLWEA. Of the 8 species in this group, great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), reddish egret (*E. rufescens*), tricolored heron (*E. tricolor*), little blue heron (*E. caerulea*), white ibis (*Eudocimus albus*), roseate spoonbill (*Ajaia ajaja*), and wood stork (*Mycteria americana*), none are commonly seen on BFWEA. Some species may occasionally forage in the basin and dome swamps.

Models indicate 169 acres of current potential habitat on BFWEA. Most of this habitat is wet flatwoods with about 42 acres of basin swamp and dome swamp. No nesting colonies have been documented on the area. If wading bird nesting is documented on or within 300 feet of the area, this assessment should be revisited.

While the area can provide limited foraging opportunities for wading birds, there is little opportunity to influence these species through active management. The lack of nesting colonies and the proximity to an active airport further limit the opportunity to manage for these species. With these limitations, wading birds should not be a focus of management on BFWEA.

Florida black bear- In June 2012, the FWC removed the Florida black bear from the threatened species list and adopted the FWC Bear Management Plan. The Florida black bear triggers 2 of 6 prioritization parameters (priorities table), but is not known to occur on BRLWEA or BFWEA. BRLWEA falls more than 25 miles outside of the primary and secondary range of any bear population as identified by the FWC Bear Management Plan. Few nuisance and no road kill bears have been documented in the vicinity. BFWEA falls outside of the primary and secondary range of the Osecola subpopulation as identified by the FWC Bear Management Plan. However, the nearest secondary range to BFWEA is only 820 feet away on the CFCC, and numerous nuisance and road-kill bears have been documented in the vicinity. It is possible that bears, particularly young dispersing males, will occasionally cross through BFWEA; however, the limited size and the composition of natural communities on BFWEA will always limit bear use of this property.

This species requires a mosaic of natural communities throughout the year to meet nutritional and reproductive needs. Optimal bear habitat in Florida is described as a thoroughly interspersed mixture of flatwoods, swamps, scrub oak ridge, bayheads, and hammock habitats. The use of frequent prescribed fire to manage these properties for gopher tortoises will result in a more open habitat than is preferred by bears. While models indicate some potential habitat on both WEAs, there is little opportunity to influence the species on such small acreage. As such, the black bear should not be a focus of management. Additionally, attracting bears to these properties would likely increase undesirable interactions between humans and bears.

Southeastern bat– No potential habitat was modeled to occur for the Southeastern bat on BFWEA and the species is not known to occur on BRLWEA. While Southeastern bats may feed and roost in areas of sandhill, their primary foraging habitat is over open water, which does not occur on or near BRLWEA. Suitable maternity caves do not exist on BRLWEA and no documented maternity caves occur within 10 miles of BRLWEA.

This species triggers 2 of 6 prioritization parameters (priorities table). While the statewide PLCP mapped potential habitat on BRLWEA, area-specific natural community based modeling indicated that no potential habitat occurs on the area. This species is not considered management dependent and the opportunity to affect this species on BRLWEA is low. Because of the lack of preferred habitat and the lack of maternity caves, the southeastern bat should not be a focus of management on BRLWEA or BFWEA.

3.3 Other Listed and Locally Important Species

While natural community management centered on a set of focal species provides benefits to a host of species reliant upon these natural communities, species that are imperiled sometimes require specific attention. Further, subsection 253.034(5) of the Florida Statutes (F.S.) requires all land management plans to include an analysis of the property to determine if significant natural resources, including listed species, occur on the property. If significant natural resources occur, the plan shall contain management strategies to protect the resources. The Florida Forever Act (s. 259.105, F.S.) adds that all State lands that have imperiled species habitat shall include restoration, enhancement, management, and repopulation of such habitats as a consideration in the management plan. In this subsection, we discuss listed or locally important species that are not PLCP focal species.

It is possible other imperiled species occur on BRLWEA and BFWEA, and if encountered, staff will document these encounters. Florida's imperiled species are adapted to natural communities and should continue to benefit from FWC's ongoing or planned ecological management that aims to restore natural community structure and function. Under FWC's ecological management, these species have a higher probability of persistence than in the absence of this management.

3.3.1: Other Listed and Locally Important Wildlife Species

Eastern Indigo Snake - The federally threatened eastern indigo snake (*Drymarchon couperi*) has been documented on private lands near BRLWEA. The status on BFWEA is less certain, but the species possibly inhabits the area. As this species has large home ranges, individuals may occur on or occasionally pass through both WEAs. Planned habitat management that includes the use of prescribed fire will enhance conditions for this species. Stumps and other coarse woody debris should be retained when possible during land management activities as potential refuge sites (Section 4.3.2). All indigo snake sightings on BRLWEA or BFWEA should be documented (Section 5.2.4).

Short-Tailed Snake – While BRLWEA is within the known range of the short-tailed snake (*Lampropeltis extenuata*), BFWEA is outside of the known range and does not have soils that meet this species requirements. The short-tailed snake is a FWC-listed threatened species that has been documented in similar soil types in Alachua and Levy counties near BRLWEA. Little is known regarding the life history of this species. Conservation of sandhill habitat will presumably benefit this species. Any incidental sighting of this species should be documented (Section 5.2.4) and collection of a photo-voucher is encouraged.

3.3.2: Rare Plants

The FNAI conducted a plant survey on BRLWEA and documented 109 species, including 1 state endangered plant, sandhill spiny-pod (*Matelea pubiflora*). While no formal rare plant inventory has been conducted on BFWEA, 4 imperiled plant species have been documented: hooded pitcher plant (*Sarracenia minor*), piedmont joint grass (*Coelorachis tuberculosa*), giant orchid (*Pteroglossaspis [Eulophia] ecristata*), and Florida toothache grass (*Ctenium floridanum*). The Florida Department of Agriculture and Consumer Services

lists hooded pitcher plant, piedmont joint grass, and giant orchid as threatened. Florida toothache grass is listed as endangered. The protections afforded plants by existing on conservations lands, in conjunction with management actions that include exotic plant removal and prescribed fire, will continue to maintain habitat for these and other rare plants. As such, these species should persist under current management on BRLWEA and BFWEA.

While planned management is compatible with the needs of most imperiled plants, contracting for a rare plant inventory is suggested. This will require additional resources. The measurable objective is:

1. Seek funding to allow for contracting for the completion of a rare plant inventory on BFWEA.

Piedmont Joint Grass - Piedmont joint grass is an obligate wetland indicator species found in wet bogs, edges of depressions, and savannahs. Soil disturbing activities should be avoided where this species is likely to occur. Periodic burning will prevent shrub encroachment in these wetlands and help preserve this species.

Hooded Pitcher Plant – Hooded pitcher plant is an obligate wetland indicator species found in wet bogs, edges of depressions, and pine flatwoods. Soil disturbing activities should be avoided where this species is likely to occur. Periodic burning will prevent succession to sedges and shrubs in these wetlands and help preserve this species

Giant Orchid - Giant orchid is typically found in sandhill, scrub, pine flatwoods, and pine rockland natural communities that are actively managed. Management for this species includes the use of prescribed fire to create sunny openings and reduce competition from woody species. Soil-disturbing activities such as bedding and plowing fire lanes can be destructive to these orchids, and should be avoided near known occurrences.

Florida Toothache Grass – Florida toothache grass is found from sandhill to wet flatwoods sites. Soil disturbing activities should be avoided where this species is likely to occur. Periodic burning will prevent shrub encroachment and help preserve this species.

Sandhill Spiny-pod – Sandhill spiny-pod is typically found in sandhill natural communities that are actively managed. Management for this species includes the use of prescribed fire to create sunny openings and reduce competition from woody species. Soil-disturbing activities such as bedding and plowing fire lanes can be destructive to this species, and should be avoided near known occurrences.

Section 4: Land Management Actions and Considerations

Models identified potential habitat for 11 focal species on BRLWEA and 12 focal species on BFWEA (Section 3.1); however, not all of these species have the same level of management opportunity or need (Section 3.2). The FWC's natural community-based management, which emphasizes prescribed fire methods that produce a mosaic of burned and unburned areas, will promote the habitat conditions necessary for most of these species, without the need for further strategic management actions. We may designate Strategic Management Areas (SMAs) when actions over and above ongoing natural community

management are required in a specific location (Section 4.1). In addition, to ensure natural community management addresses the needs of these focal species, we evaluate the OBVM DFCs for natural communities (Section 4.2). Section 4.3 provides recommendations for species that need specific protective measures or land management considerations to ensure their continued presence on the property.

4.1: Strategic Management Areas

The intent on BRLWEA and BFWEA is to apply management actions that maintain intact natural communities in good condition and restore degraded or altered natural communities to a condition that will better suit focal and listed species. However, SMAs focus management actions on MUs with the highest possibility of success, and or MUs most critical for the conservation of a species on the WEAs. Staff designates SMAs to achieve at least one of the following:

- Identify the area in which to apply specific land or species management that creates the highest probability for persistence and conservation of a species or suite of species. These specific actions should aid in restoring, enhancing, or maintaining the habitat or population.
- Identify an area in which to focus specific land or species management actions for the best chance of success, when there is more restoration and enhancement than can be accomplished in short order on the WEA. This might be the first or next step in a sequential series of management actions that will increase the likelihood of occupation and or persistence of a specific species.
- Identify an area that is so critical to the persistence of a species on the WEA that it warrants special designation to ensure protection against negative alteration.
- Identify areas that are critical for research or monitoring.
- Recommend MU-specific natural community DFCs that differ from the DFCs in the natural community area-wide, when this is necessary to benefit a specific species.

Workshop participants agreed that planned and ongoing management actions across BRLWEA and BFWEA will meet the needs of the focal species; therefore, they did not designate any SMAs.

4.2: Objective-Based Vegetation Management (OBVM) Considerations

OBVM is an approach to land management that emphasizes restoring and maintaining natural plant communities towards pre-determined desired conditions. The OBVM DFCs (Table 2) target a range in values for various habitat attributes within actively managed communities. However, if a focal species requires a more restricted range in habitat attributes than is reflected in the area-wide DFCs, or depends on a vegetative attribute that is not currently monitored on BRLWEA or BFWEA, we may recommend adjusting the DFC range or adding the attribute. The workshop gave participants the opportunity to evaluate if the current DFCs meet the needs of focal species and if not, to suggest modifications. The following are common reasons to modify DFCs:

- To obtain maximum habitat suitability for a species that requires a more restricted range of DFC values than the current DFC values.

- To benefit a particular species in specific MUs; typically when we have designated a SMA that requires a change in natural community DFCs only within the SMA and not in the natural community area-wide.
- To add an attribute that was not previously monitored.

Table 2. Desired Future Conditions for mesic flatwoods and sandhill natural communities on BFWEA and BRLWEA, based on FNAI reference site values.

Mesic Flatwoods	**DFC Value Range**
Pine Basal Area (sq. ft./acre)	10-50
LL Basal Area (sq. ft./acre)	10-50
Non Pine-Density (count in 7m radius)	0
Subcanopy (count within 4m quadrant)	<1
Serenoa Cover (%)	10-25
Serenoa Petiole Density >3 ft (count)	0
Average Maximum Shrub Height (ft)	≤2
Shrub Cover (%)	<25
Shrub Stem Density >3 ft (count)	<1
Maximum Shrub DBH[1] (inches)	<0.5
Herbaceous Cover (%)	>25
Wiry Graminoids Cover (%)	>10
Exotics Plant Cover (%)	0
Weed Cover (%)	<2
Sandhill	**DFC Value Range**
Pine-only Basal Area (sq. ft./acre)	20-60
Longleaf Pine Regeneration (count)	NA
Non-Pine stem Density (in 7m radius)	<3
Subcanopy (stems)	<1
Shrub Cover (%)	10-20
Serenoa Cover (%)	<5
Serenoa Petiole Density	0
Shrub Stem Density >3 ft	0
Average Maximum Shrub DBH (in)	<1
Average Maximum Shrub Height (ft)	<3
Herbaceous Cover (%)	>25
Bare Ground Cover (%)	1-10
Weedy Cover (%)	<2
Exotic Plant Cover (%)	0

[1] DBH = diameter at breast height.

The OBVM 'data collection protocol' and 'attribute range in values' have changed since the BFWEA OBVM workshop, due to program review and budgetary issues. Additionally, the OBVM workshop occurred prior to the identification of references sites.

Reference sites are areas identified by FNAI as representing the highest quality examples of natural communities in the State. FNAI has identified a reference site for sandhill natural community on BRLWEA. The FWC has not conducted an OBVM workshop for BRLWEA. At the WCPR workshop, participants agreed that use of the reference sites' values would best meet the needs of the focal species. As such, Table 2 reflects the recommended OBVM DFCs for BFWEA and BRLWEA. The actively managed natural communities on BFWEA include mesic flatwoods, wet flatwoods and sandhill, while sandhill is the only actively managed natural community on BRLWEA.

4.3: Further Land Management Considerations

Most generalist or wide-ranging species benefit from management that maintains or restores the structure and function of the natural communities they use. However, specific management recommendations and precautions are necessary to ensure continued suitability of the area for some species. The following recommendations should help these WEAs continue to fulfill their role in the conservation of these species.

4.3.1: Frosted Flatwoods Salamander

Frosted flatwoods salamanders frequently move between wetland breeding ponds and adjacent uplands. Avoid placing new firebreaks or roads along wetland ecotones because they can alter or destroy the herbaceous component of pond margins preferred by this species and other amphibians. Wet-lining can be an alternative to mineral firebreaks around wetlands if necessary; however, it is preferred to allow fire to burn through the wetland. Managers will use prescribed fire as the primary tool to remove shrubs and other thick vegetation from pond margins; mechanical treatments may be needed initially, but prescribed fire should be the primary management tool in suitable wetlands. Because it is important to maintain potential breeding ponds in good condition, minimize soil disturbance within 500 yards of potential breeding ponds.

Growing season (April–September) burns, preferably after April, are more beneficial to frosted flatwoods salamanders than dormant season (October–March) burns. This is because growing season burns are more effective at reducing shrub cover and litter in the wetland basin, stimulating the growth of herbaceous emergent vegetation, enhancing the wetland/upland ecotone, and stimulating the reproduction of wiregrass in the surrounding uplands. The most beneficial time to burn is when the wetland is dry. Although growing season fires are preferred, it is better to burn during the dormant season than to avoid burning.

4.3.2: Eastern Indigo Snake / Florida Pine Snake

Large upland snakes such as the eastern indigo snake and Florida pine snake are relatively wide-ranging and elusive. Ongoing land management activities will enhance the suitability of habitat for these species, but could be directly detrimental. When using heavy equipment during land management activities, it is important to avoid direct mortality by allowing snakes to move away from the path of the equipment. When practical during land management activities, keep heavy equipment at least 25 feet from areas with a high density

of pocket gophers or gopher tortoise burrows. This precaution will help to avoid direct mortality of pine snakes, which regularly use gopher tortoise burrows for refuge, and forage on pocket gophers. When possible, leave coarse woody debris and residual stumps intact to provide cover for both of these snake species. If necessary to reduce smoke management issues, it is acceptable to pile and burn excess logging slash, but leave some debris in the stand to provide cover for these species and their prey. Creating brush piles can provide cover for these species if natural cover is sparse or absent.

4.3.3: Gopher Tortoise

In areas where gopher tortoises occur, the timing of mechanical treatments should occur, when appropriate, during the dormant season to minimize negative impacts to gopher tortoises. Gopher tortoises are generally less active and remain in burrows during the winter months; therefore, mechanical equipment at this time will be less likely to crush or otherwise harm foraging tortoises. In addition, because it is difficult for equipment operators to see hatchling tortoises, and hatchlings are most abundant during September and October, avoid mechanical treatments during these months when practical. However, consider how the timing of the treatment will affect management results, and conduct the treatment in a way that allows for meeting management objectives while minimizing negative impacts on tortoises. Regardless of timing, take steps (e.g., flagging burrows) to minimize impacts on known burrows.

4.3.4: American Swallow-Tailed Kite

Because swallow-tailed kites exhibit high nest site fidelity, if nests are found on the WEAs, protect known nest sites from disturbance and alteration, and retain all of the tallest pines in the area of nest sites. Maintaining a 330-foot protective buffer around active nests during the nesting season (March-June) should minimize the chance of disturbance. When possible, kite nesting areas should be managed to have a higher shrub height and density than surrounding areas. During nesting season, if kites are observed carrying nesting material, mobbing, or congregating in groups of 3 or more, these activities should be documented and an effort to locate the nest should be made. For information on how to locate nests, see:

> Meyer, K. D., and M. W. Collopy. 1995. Status, distribution, and habitat requirements of the American swallow-tailed kite (*Elanoides forficatus*) in Florida. Project Report, Florida Game and Fresh Water Fish Commission, Tallahassee. http://research.myfwc.com/publications/publication_info.asp?id=47206

While kites have not been documented nesting on either WEA, it is important to preserve future potential nest trees. This can be done by retaining the largest, oldest trees on the landscape during land management activities.

4.3.5: Bachman's Sparrow

Prescribed fire improves habitat quality for Bachman's sparrows, and is the primary land management tool recommended to promote habitat for Bachman's sparrow on both

WEAs. Suitable habitat can be created and maintained through frequent (≤3 year rotation) use of prescribed fire. The repeated occurrence of fire is critical to sustaining this species as use of an area by Bachman's sparrows declines rapidly around 18 months post-fire, and Bachman's sparrows may abandon habitat if fire is excluded for more than 3 years. When using mechanical treatment to reduce palmetto, apply a 'sloppy chop' to retain some potential singing perches, and follow with a prescribed burn.

4.3.6: Brown-Headed Nuthatch

This species is a cavity nester that is dependent on the presence of snags for suitable nesting habitat. As such, make an effort to retain snags during land management activities and evaluate the impact of management activities on snags to ensure new snags will replace consumed snags. Old, short snags with flaking bark and soft wood, especially old, decaying oak snags with a diameter at breast height of <10 inches are important nesting sites for this species. Take care to retain these particular types of snags.

4.3.7: Northern Bobwhite

The primary land management tool used to benefit northern bobwhite is the frequent use of prescribed fire. Ignite fires using a variety of firing techniques and environmental conditions with the goal of promoting a mosaic burn. Mosaic burns result in a patchwork of burned and unburned areas that meet different life history requirements for northern bobwhite. Growing season fires are generally preferred, as they are required to trigger flowering and viable seed production in many native species. Recent evidence suggests that the frequency of fire in flatwoods communities may be just as important as the seasonality of burn. Thus, if growing season burns do not occur, it is better to burn the unit during the following dormant season rather than waiting until the following summer.

Pine stands with basal areas >70 ft^2/acre should be thinned to trigger herbaceous growth and improve habitat conditions for this species. Ruderal areas can be managed for northern bobwhite through mechanical actions like mowing and/or disking strips during the summer months to promote herbaceous growth.

4.3.8: Southeastern American Kestrel

Southeastern American kestrels are dependent on the occurrence of open upland habitats that contain a number of snags for nest sites and perches. While ongoing management will encourage the open foraging condition this species requires, make an effort to retain large snags during land management activities. The practice of snag management (i.e., protecting snags when safe and practical, promoting the creation of new snags in areas currently lacking) will benefit southeastern American kestrels. If nesting is documented, minimize the amount of mechanical activity within 500 feet of the nest during the nesting season and protect the snag during prescribed fire activities. For more information on management for kestrels, see:

Stys, B. 1993. Ecology and habitat protection needs of the southeastern American kestrel (*Falco sparverius paulus*) on large-scale development sites in Florida. Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 13. Tallahassee, Florida, USA.

4.3.9: Sherman's Fox Squirrel

To help these areas reach their full potential for fox squirrels, prescribed fire should continue to be used to create an open, mature forest structure. Efforts to reduce dense palmetto cover in some MUs will benefit this species by providing the open conditions the species prefers. Reducing palmettos will also enhance conditions for food producing species such as runner oak (*Quercus pumila*) and dwarf live oak (*Q. minima*), preferred by Sherman's fox squirrel. As fox squirrels require an oak component, mature oaks should be retained in appropriate sites (e.g., fire shadows) during natural community restoration. Ideally, a variety of oak species in a range of age classes should be retained, but not to the extent that interferes with other species needs and natural community management. Maintaining single large hardwood trees and small patches of oaks within pine uplands creates the highest quality fox squirrel habitat. Studies conducted in southwest Georgia produced a recommendation of 2-3 large single trees (>12 inch DBH), or patches of smaller trees (4-12 inch DBH), for every acre of pine savanna, to accommodate the needs of Sherman's fox squirrels.

Section 5: Species Management Opportunities

Land management that considers the needs of a suite of focal species provides direct benefits to many associated species. However, land management actions alone are insufficient to maintain or recover some species. These species need species-specific management (Section 5.1). Additionally, monitoring (Section 5.2) is required to verify management is having the desired influence on wildlife. Section 5.3 identifies research necessary to guide future management.

5.1: Species Management

Species management as used here refers to actions other than land management, monitoring, or research, taken for a specific species. Species-specific management actions can include actions such as translocation, restocking, or installing artificial cavities. These actions may be needed for species that are currently present but occur at low densities, have low reproduction potential, or have other limitations that inhibit recovery. Additionally, species that are not present on a site, have limited dispersal capabilities, or are unlikely to occupy a site without reintroduction, may require species-specific management. Section 2 and Section 4 provide information on land management actions, such as prescribed fire or mechanical treatments. Section 5.2 covers monitoring related actions, including banding or tagging.

5.1.1: Southeastern American Kestrel

Staff installed 4 southeastern American kestrel nest boxes in March 2010 on BRLWEA. Staff maintains and monitors these boxes following a FWRI developed protocol. The purpose of the southeastern American kestrel nest box program on BRLWEA is to facilitate FWRI research efforts and encourage kestrel nesting opportunities. The FWRI project is part of a statewide effort to erect and monitor southeastern American kestrel nest boxes and collect data on habitat structure near successful boxes to gain a greater understanding of preferred nesting habitat. As monitoring identifies the need, staff will erect, maintain, and monitor new nest boxes.

5.2: Species Monitoring

Monitoring is critical to evaluating the effect of management on wildlife. While we are unable to monitor all of the focal species on BRLWEA and BFWEA, the recommended monitoring assesses species in all actively managed communities, and includes opportunistic monitoring for uncommon or hard to monitor species. Data collected will be reported to the regional conservation biologist for inclusion in the appropriate database developed for the WCPR program. The FWC will make monitoring data available to cooperating agencies and organizations, such as FNAI (Section 6.4).

This section lists the monitoring recommended for BRLWEA and BFWEA. We also provide the purpose for each monitoring effort. The FWC is in the process of standardizing monitoring protocols for a number of these species, and developing a central database for data storage. Area staff will work with the regional conservation biologist to implement standardized protocols, standardize ongoing monitoring that does not have a standardized protocol, and ensure data is included in the central database.

5.2.1: Gopher Tortoise Monitoring

The purpose of gopher tortoise monitoring on these WEAs will be to track the species' distribution and abundance to determine the effect of management on the population trend. Past surveys followed the established gopher tortoise mitigation park protocol and were intended to be conducted on a 5-year interval. However, the FWC is part of a Gopher Tortoise Candidate Conservation Agreement and the members of this Agreement are working to create a standardized monitoring protocol for the gopher tortoise throughout its range. Once this protocol is agreed upon, we anticipate all gopher tortoise monitoring conducted by FWC will follow this protocol. This protocol will allow for estimating the gopher tortoise density, which will give managers the ability to track changes in the population, rather than just changes in the number of burrows. Data will be reported to the gopher tortoise plan coordinator (Section 6.1.1).

5.2.2: Southeastern American Kestrel Monitoring

The purpose of monitoring kestrel nest boxes is to determine the extent of nesting by southeastern American kestrels on BRLWEA, and to track nesting in boxes over time. Staff

will conduct southeastern American kestrel monitoring according to protocol developed by FWRI. Data will be reported to the conservation biologist for submission to FWRI as part of the statewide study.

5.2.3: Florida Mouse Monitoring

The Florida mouse can be used as an indicator of how gopher tortoise management is influencing commensal species. On BRLWEA, the purpose of monitoring Florida mice is to determine the persistence and distribution of Florida mice on the area, to ensure management is compatible with the needs of this species. We will use the standardized Florida mouse monitoring, with follow-up monitoring occurring on a 5-year interval, to track Florida mouse persistence and distribution.

On BFWEA, the Florida mouse has not been detected despite 2 separate monitoring events. One additional attempt will be made to detect the presence of Florida mice on BFWEA. Prior to 2018, staff will conduct Florida mouse monitoring according to the current protocol with the intent of verifying presence. If not detected in this monitoring event, we will presume the species does not occur on BFWEA.

5.2.4: Opportunistic Monitoring

The purpose of opportunistic monitoring is to document the presence of specific species. Opportunistic monitoring is the process of recording important information on species when encountered. By following the standardized monitoring protocol for wildlife and plants, staff ensures their data are compatible with other opportunistic observations. Documentation of opportunistic sightings including species, date of the observation, observer, approximate lat/long or appropriate MU, number of individuals, behavior, and habitat type should be forwarded to the regional conservation biologist. Monitoring data will be made available to cooperating agencies, and organizations such as FNAI (Section 6.4). Use the Opportunistic Observation protocol (links above) to record encounters with or sign of, the following focal species:

- Frosted flatwoods salamander
- Striped newt
- Eastern indigo snake
- Florida pine snake
- Short-tailed snake
- American swallow-tailed kite (aggregations of 3 or more birds on regular basis in one area during spring, and any nesting activity)
- Bachman's sparrow (during spring/early summer when nesting is likely)
- Brown-headed nuthatch (during spring/early summer when nesting is likely)
- Cooper's hawk
- Northern bobwhite (during spring/early summer when nesting is likely)
- Southeastern American kestrel (use of natural cavities on BRL, any observation during nest season on BF)
- Wading birds (nesting activity only)
- Florida black bear
- Sherman's fox squirrel (adults with young, juveniles, or nests)

- Southeastern myotis
- Any listed species that does not have a monitoring protocol in this section

5.3: Species Research Needs

Species management recommendations in other sections of this document are based on the most current information available. Cases may arise where little or no information is available to guide management, and research is needed. Further, many of these focal species do not have standard monitoring protocol. Research is needed to determine the most efficient means of monitoring these species. For many of the focal species, managers need research about aspects of natural history, such as minimum habitat patch size, preferred habitat parameters, and response to habitat management activities. However, workshop participants did not identify any area-specific species research needs on BRLWEA or BFWEA.

Section 6: Intra/Inter Agency Coordination

The WCPR process identified many recommendations regarding possible management actions for focal species. WHM staff can handle most proposed management actions; however, coordination with other sections in FWC or with other agencies sometimes is necessary or more efficient. This section describes coordination that is necessary outside of the WHM section, identifies the entity to coordinate with, and provides position contacts for these entities. We attempt to provide the name, position, and contact information for the people holding the position when the Strategy was drafted. As positions experience turnover, when in doubt, contact the current Section Leader or supervisor to determine the appropriate person now holding the position.

6.1: Florida Fish & Wildlife Conservation Commission (FWC)

6.1.1: Species Conservation Planning Section (SCP)

Monitoring animal populations on a WMA/WEA gives managers a way to gauge population response to management. If this information is not shared with others, valuable data useful in assessing statewide conservation efforts often is lost or unused. Therefore, WHM will share monitoring data with the appropriate taxa coordinators, and with program coordinators for species that have formal conservation initiatives or management programs. The regional SCP biologist is a good source of information on the regional status of non-game species. Additionally, the Endangered Species Act Section 6 Cooperative Agreement between the FWC and the USFWS provides the authorization for FWC staff to handle federally listed wildlife. However, staff must be in compliance with the terms and conditions of the Agreement, which includes proper reporting of actions with federally listed wildlife. Staff will coordinate with FWC's Endangered Species Coordinator to meet the reporting requirements. Please note some contacts will also be covered under Section 6.1.2; FWRI, and Section 6.1.4; Florida's Wildlife Legacy Initiative.

Contacts:
Elsa Haubold, Species Conservation Planning Section Leader: (850) 488-3831
Robin Boughton, Avian Taxa Coordinator: (352) 732-1225
Melissa Tucker, Mammalian Taxa Coordinator: (386) 754-1668
Bill Turner, Herpetofauna Taxa Coordinator: (850) 921-1143
Brad Gruver, Endangered Species Coordinator: (850) 488-3831
Terry Doonan, North Central Regional SCP Biologist: (386) 754-1662
Deborah Burr, Gopher Tortoise Management Plan Coordinator: (850) 921-1019

6.1.2: Fish and Wildlife Research Institute (FWRI)

Area staff will cooperate with Kevin Enge on herpetofauna monitoring and report documentation of these species to FWRI. Staff will communicate with Karl Miller on an assessment of the current location of kestrel nest boxes and whether sites that are more suitable can be identified. Jim Rodgers administers the FWC's migratory bird scientific collection permit. Report handling of migratory birds covered by the permit to Mr. Rodgers in January of each year.

Contacts:
Tim O'Meara, Section Leader: (850) 488-3831
Janell Brush, Avian Research Biologist: (352) 955-2081
Karl Miller, Biological Administrator (avian): (352) 334-4215
Kevin Enge, Associate Research Scientist (herps): (386) 758-0525
Jim Rodgers, Research Administrator: (352) 334-4218

6.1.3: Office of Conservation Planning Services (CPS)

Private lands biologists within FWCs Office of CPS work to provide technical and financial assistance to landowners interested in managing their properties in a manner compatible with the needs of wildlife. These biologists are able to write management plans for landowners and enroll them in cost-share programs that offset some of the financial costs associated with land management. If private landowners near BRLWEA or BFWEA express an interest in managing their lands for wildlife, CPS biologists should be contacted and provided the landowner's information.

Contacts:
Scott Sanders, Office Director: (850) 488-3831
Kris Cathey, Regional Coordinator: (386) 754-6244

6.1.4: Florida's Wildlife Legacy Initiative (FWLI)

FWLI can assist in identifying potential partners for collaboration of monitoring and management efforts. FWLI also might be a source of funding via the State Wildlife Grants program; therefore, regular communication with this section will be important.

Contacts:
Katherine Haley, Program Coordinator: (850) 617-9503
Caroline Gorga, Wildlife Legacy Biologist: (386) 754-1667

6.2: Florida Forest Service (FFS)

The FFS provides authorizations for prescribed burning, and will provide assistance with escaped fires. FFS can provide assistance with timber management including administration of contracts for thinning or reforestation operations. WEA staff should continue to coordinate prescribed fire and timber management activities with FFS.

Contacts:
Pat Deren, Duval Forest Area Supervisor; (904) 266-5022
Dewitt Watson, Gilchrist Forest Area Supervisor; (352) 493-6802

6.3: Avian Research and Conservation Institute (ARCI)

ARCI surveys and keeps information on American swallow-tailed kite populations. Location information on the swallow-tailed kite, particularly nests or nesting behavior, should be shared with ARCI.

Contacts:
Dr. Ken Meyer, Avian Researcher: (352) 335-4151; meyer@arcinst.org
Gina Kent, Research Ecologist and Coordinator: (352) 514-5607; gkent@arciinst.org

6.4: Florida Natural Areas Inventory (FNAI)

FNAI collects, interprets, and disseminates ecological information critical to the conservation of Florida's biological diversity. The FNAI's database and expertise facilitate environmentally sound planning and natural resource management to protect the plants, animals, and communities that represent Florida's natural heritage. The FNAI maintains a database of rare and listed species that is often used for planning purposes. As such, WHM will share information about rare and listed species occurrences on BRLWEA and BFWEA with FNAI to ensure this information is included in their database. Additionally, FWC has a contract that allows FNAI to provide plant and animal surveys if the need exists and resources are available.

Contacts:
Dan Hipes, Chief Scientist: (850) 224-8207

Section 7: Beyond the Boundaries Considerations

There is enough potential habitat on BRLWEA and BFWEA, under an appropriate management regime, to support some of the focal species known to occur on or near the WEAs. With the continuation of funding for management, BRLWEA can support viable

populations of several species, including Bachman's sparrows, brown-headed nuthatches, gopher tortoises, and Florida mice. Wide-ranging species such as Florida pine snakes, American swallow-tailed kites, and southeastern American kestrels will continue to exist on these WEAs as long as regional conditions are conducive to their persistence.

The current management boundaries for these WEAs do not include all important habitat for focal species. The FWC originally identified Strategic Habitat Conservation Areas (SHCAs) in the Closing the Gaps in Florida's Wildlife Habitat Conservation System report (Cox et al. 1994). The goal of SHCAs is to identify the minimum amount of land needed in Florida to ensure long-term survival of key components to Florida's biological diversity. The SHCAs identify important remaining habitat conservation needs. New SHCAs have been identified in recent FWC efforts to update the Closing the Gaps entitled "Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas". This report identified SHCAs within 3 miles of BRLWEA for Cooper's hawk and the Florida mouse, and within 3 miles of BFWEA for striped newt. Although it is unlikely Florida will acquire all property identified in SHCAs, property acquisition and actions that encourage land use and management that is compatible with the needs of the WEAs' focal species should be a priority in the area.

While the current conditions and management of BRLWEA and BFWEA and neighboring lands provide an opportunity to further the conservation of many focal and imperiled species, significant changes in management or land use beyond the boundaries may have a significant impact on some species. As many of these areas' species are dependent upon fire-maintained habitat, any change beyond the boundaries that impedes staff's ability to conduct prescribed fire would be detrimental to the persistence of species such as the northern bobwhite, Bachman's sparrow, brown-headed nuthatch, and gopher tortoise.

Much of the land surrounding BRLWEA is used for agriculture and intensive silviculture, but many of these landowners are involved in private lands conservation programs. Staff within FWC's Office of Conservation Planning Service (Section 6.1.3) should encourage landowners neighboring BRLWEA to continue managing their silvicultural or agricultural operations in a manner that is compatible with the needs of wildlife. Although BRLWEA is not in an area with a high expectation of commercial or residential development in the near future, there is currently a high rate of conversion from silviculture to intensive irrigated agriculture in the surrounding area. If habitat continues to be altered, this may negatively influence some species.

While BFWEA does share part of its boundary with CFCC, most of the adjacent private land is being developed as residential and commercial real estate. Lands adjacent to BFWEA that are cleared for development due to an expanding Jacksonville population or developing Cecil Commerce Center will negatively affect species that require large home ranges, or that are dependent on dispersal for maintaining viable populations. This development will also present challenges for maintaining the desired prescribed fire regime and is likely to increase the potential for invasive pest plants on the area.

Document Map

Species	Species Assessment	Land management actions	Species management actions	Species monitoring	Research needs	Intra/inter agency coordination
Florida flatwoods salamander	3.2.1	4.3.1		5.2.4		6.1.2
Striped newt	3.2.11			5.2.4		
Florida pine snake	3.2.2	4.3.2		5.2.4		6.1.3
Gopher tortoise	3.2.3	4.3.3		5.2.1		6.1.1
American swallow-tailed kite	3.2.4	4.3.4		5.2.4		6.3
Bachman's sparrow	3.2.5	4.3.5		5.2.4		
Brown-headed nuthatch	3.2.6	4.3.6		5.2.4		
Cooper's hawk	3.2.11			5.2.4		
Northern bobwhite	3.2.7	4.3.7		5.2.4		
Southeastern American kestrel	3.2.8	4.3.8	5.1.1	5.2.2		6.1.2
Wading birds	3.2.11			5.2.4		
Florida black bear	3.2.11			5.2.4		
Florida mouse	3.2.9			5.2.3		
Sherman's fox squirrel	3.2.10	4.3.9		5.2.4		6.1.3
Southeastern Bat	3.2.11			5.2.4		

12.13 Arthropod Control Plan for Duval County

ADAM H. PUTNAM
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7905

Return to:
Mosquito Control Program
3125 Conner Blvd. Bldg 6.
Tallahassee, Florida 32399-1650

For use in documenting an Arthropod Control Pan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: Branan Field Wildlife and Environmental Area

Is Control Work Necessary: ☒ Yes ☐ No

Would be determined based on ongoing off site surveillance. If control work is needed, JMCD will reach out to the appropriate land manager to coordinate activities.

Location: Branan Field WEA, 11900 Branan Field Road, Jacksonville, FL 32222

Land Management Agency: Florida Fish and Wildlife Conservation Commission

Are Arthropod Surveillance Activities Necessary? ☐ Yes ☒ No
If "Yes", please explain:
Currently surveillance activities are based in areas that surround Branan Field Wildlife and Environmental Areas. Floodwater species and potential disease vector mosquitoes are common in the area. If further surveillance within the Branan Field WEA is required, JMCD Entomologist will coordinate with the land manager.

Which Surveillance Techniques Are Proposed?
Please Check All That Apply:

☒ Landing Rate Counts	☒ Light Traps	☒ Sentinel Chickens
☐ Citizen Complaints	☒ Larval Dips	☐ Other

If "Other", please explain:
JMCD maintains an extensive monitoring network for surveillance including light traps and CDC (Center for Disease Control) style traps along with a sentinel chicken program. Currently, there are not any routinely monitored sites within the Branan Field WEA. If mosquito borne disease activity in the immediate area or a declared natural disaster with increased standing water warrants one of the surveillance mechanisms within the area, JMCD will coordinate with the appropriate land manager.

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Arthropod Species for Which Control is Proposed:
Anopheles crucians complex, *An. quadrimaculatus, Aedes infirmatus, Ae. tormentor, Ae, vexans, Culex nigripalpus, Cx. pipiens quinquefasciatus, Cx. slinariiusm, Culiseta melanura, Psorophora ciliata, Ps. columbiae, Ps. ferox*

Proposed Larval Control:
Any applications within Branan Field WEA would be completed by an aerial application.

Proposed larval monitoring procedure: larval dip counts

Are post treatment counts being obtained: ☒ Yes ☐ No

Biological Control of Larvae:

Might predacious fish be stocked: ☐ Yes ☒ No

Other biological controls that might be used: None

Material to be Used for Larvaciding Applications:

(Please Check All That Apply:)

☒ Bti

☐ Bs

☒ Methoprene

☐ Non-Petroleum Surface Film

☐ Other, please specify:

Please specify the following for each larvacide:

Chemical or Common name:

Vectobac, Fourstar Bti-CRG, Altosid SBG, Duplex (Bti and methoprene prepared according to label)

N/A

☐ Ground ☒ Aerial

Rate of application: Per label instructions specific to method of application

Method of application: machine application applied by air only when required due to a mosquito borne public health threat or declared natural disaster with increased standing water in the immediate area that impedes clean up due to increased mosquito activity.

Proposed Adult Mosquito Control:

Aerial adulticiding (see below)	☐ Yes	☐No
Ground adulticiding	☐ Yes	☒No

Aerial adulticiding will only be used in the event of a declared public health emergency. The WEA land manager will be provided a map of the treatment area and be notified of the material to be used for treatment and the approximate times of application.

Please specify the following for each adulticide:

Chemical or common name: Dibrom (Naled)

Rate of application: 0.5 ounces/acre

Method of application: ULV aerial application using helicopter

Proposed Modifications for Public Health Emergency Control:
In the event of a declared public health emergency, control may be performed by the arthropod control agency, as part of a larger treatment plan to safeguard public health. Area land managers will be notified prior to treatment.

Proposed Notification Procedure for Control Activities:

Manager of the area will be notified by e-mail and/or phone call when treatment of the area will occur. The notice should include a map of the area being treated, the material to be used and the general time of day the treatment will occur. Public notification is posted on the City of Jacksonville website: coj.net/mosquito.

Records:

Are records being kept in accordance with Chapter 388, F.S.,

☒ Yes ☐ No Records Location: 1321 Eastport Road, Jacksonville, FL 32218

How long are records maintained:
Minimum of three years per Ch. 5E-13, FAC

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

None

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed:

None

Include proposed operational schedules for water fluctuations:

None

List any periodic restrictions, as applicable, for example peak fish spawning times.

None

Proposed Modification of Aquatic Vegetation:

None

Land Manager Comments:

Arthropod Control Agency Comments:

As stated earlier, JMCD will notify designated land manager prior to any applications made with in the designated lands. Any treatment would be in response to a natural disaster or mosquito borne disease that could impact the health of nearby residents or at the request of the land manager. In that case, JMCD would work with the land manager to determine appropriate treatments.

Signature of Lands Manager or Representative — Date 9/11/18

Signature of Mosquito Control Director / Manager — Date 9/12/18

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12.14 Arthropod Control for Clay County

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

ADAM H. PUTNAM
COMMISSIONER

Return to:
Mosquito Control Program
3125 Conner Blvd, Bldg 6,
Tallahassee, Florida 32399-1650

For use in documenting an Arthropod Control Pan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land:
Branan Field Wildlife and Environmental Area

Is Control Work Necessary: ☐ Yes ☑ No

Location:
Branan Field WEA, 11900 Branan Field Rd., Jacksonville, FL 32222

Land Management Agency:
Florida Fish & Wildlife Conservation Commission

Are Arthropod Surveillance Activities Necessary? ☐ Yes ☑ No
If "Yes", please explain:

Which Surveillance Techniques Are Proposed?
Please Check All That Apply:

☐ Landing Rate Counts	☐ Light Traps	☐ Sentinel Chickens
☐ Citizen Complaints	☐ Larval Dips	☐ Other

If "Other", please explain:

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Arthropod Species for Which Control is Proposed:

None

Proposed Larval Control:

None

Proposed larval monitoring procedure:

Are post treatment counts being obtained: ❑Yes ☑ No

Biological Control of Larvae:

Might predacious fish be stocked: ❑ Yes ☑ No

Other biological controls that might be used:

None

Material to be Used for Larvaciding Applications:

(Please Check All That Apply:)

❑ Bti

❑ Bs

❑ Methoprene

❑ Non-Petroleum Surface Film

❑ Other, please specify:

Please specify the following for each larvacide:

Chemical or Common name:

❑ Ground ❑ Aerial

Rate of application:

Method of application:

Proposed Adult Mosquito Control:

Aerial adulticiding	❑Yes	☑ No
Ground adulticiding	❑ Yes	☑ No

Please specify the following for each adulticide:

Chemical or common name:

Rate of application:

Method of application:

Proposed Modifications for Public Health Emergency Control: Arthropod control agency may request special exception to this plan during a threat to public or animal health declared by State Health Officer or Commissioner of Agriculture.

No modification will be needed.

Proposed Notification Procedure for Control Activities:

Contact:
Florida Fish & Wildlife Conservation Commission, North Central Regional Office, 3377 E. US Hwy. 90, Lake City, FL 32055

Records:

Are records being kept in accordance with Chapter 388, F.S.:

❑ Yes ☑ No

Records Location: We have no arthropod control measures in place and therefore no records to maintain at this time

How long are records maintained:

We are not maintaining any records because there are no arthropod control measures implemented or proposed.

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

None.

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed:

No.

Include proposed operational schedules for water fluctuations

None.

List any periodic restrictions, as applicable, for example peak fish spawning times.

None.

Proposed Modification of Aquatic Vegetation:

None

Land Manager Comments:

There are no arthropod control measures needed for this property.

Arthropod Control Agency Comments:

David B. Johnson

Digitally signed by David B. Johnson
DN: cn=David B. Johnson, o, ou, email=David.Johnson@MyFWC.com, c=US
Date: 2019.03.21 08:24:49 -04'00'

Signature of Lands Manager or Representative Date

Sonya D. (Floyd) Gause

Digitally signed by Sonya D. (Floyd) Gause
DN: cn=Sonya D. (Floyd) Gause, o=Clay County Mosquito Control, email=Sonya.Floyd@claycountygov.com, c=US
Date: 2019.03.15 09:44:33 -05'00'
Adobe Acrobat Reader DC version: 2015.020.20042

Signature of Mosquito Control Director / Manager Date

12.15 Duval and Clay counties Letters of Compliance with Local Government Comprehensive Plan

City of Jacksonville, Florida

Lenny Curry, Mayor

City Hall at St. James
117 W. Duval St.
Jacksonville, FL 32202
(904) 630-CITY
www.coj.net

ONE CITY. ONE
JACKSONVILLE.

September 7, 2018

Rebecca Shelton
Land Conservation Planner
Florida Fish and Wildlife Conservation Commission
Wildlife and Habitat Management Section
Land Conservation and Planning
620 South Meridian Street
Tallahassee, FL 32399-1600

Dear Ms. Shelton,

The Jacksonville Planning and Development Department has reviewed the Management Plan for Brannan Field Wildlife and Environmental Area (BFWEA) 2017-2027. The portion of the BFWEA that is located within Duval County has a land use category of Conservation (CSV) and a zoning of Planned Unit Development (PUD). The PUD site plan identifies the property as a regional mitigation park. Both of these designations allow for the use of resource-based activities such as conservation and recreation.

Since the Florida Fish and Wildlife Conservation Commission will continue to allow public access and manage the property for recreational and natural resources, the proposed use of state lands is consistent with the following goal, objective and policies of the 2030 Comprehensive Plan:

Future Land Use Element:

Policy 2.8.1 The City shall improve coordination with all levels of government, non-profit providers and private landholders to increase available parkland and facilities, through negotiations and joint participation agreements for acquisition and management or recreational land.

Policy 2.8.3 The City shall provide active and passive recreation facilities and opportunities to meet existing and future needs of neighborhoods, consistent with the Recreation and Open Space Element.

Recreation and Open Space Element:

Objective 2.1 The City of Jacksonville shall improve, expand and enhance its natural areas such as waterfronts, park lands, and open spaces to preserve the identity of these areas and encourage sectional recognition.

Goal 3 To use open space and recreational facilities as a key element in the City's planning strategy to enhance the natural environment and to conserve important natural resources.

Policy 3.1.2 The Recreation and Community Services Department, along with State and Federal agency partnerships will manage those portions of park properties containing important natural resources for long-term conservation. Opportunities for public access to the resource will continue to be developed in a manner that is consistent with the conservation of the resource. In addition, the Recreation and Community Services Department, along with State and Federal agency partnerships shall carry out the resource protection plan developed for preservation lands that incorporates the removal of non-native or invasive species for natural areas having special characteristics.

Conservation/Coastal Management Element

Goal 3 Manage, preserve and enhance viable native ecological communities in order to protect and improve the functions of natural systems and the distribution, productivity and diversity of native plants, animals and fisheries, particularly those species which are endangered, threatened, of special concern, or have high ecological, recreational, scientific, educational, aesthetic, or economic value.

Objective 3.4 The City will protect conserve and appropriately use native ecological communities shared with or adjacent to State and federal lands and other local governments.

Objective 12.2 Provide a natural and recreation corridor between the Cary State Forest and the Jennings State Forest which creates the opportunity for a migratory corridor for wildlife in the area.

Based on the information noted above, the Planning and Development Department finds that the Management Plan for Brannan Field Wildlife and Environmental Area (BFWEA) 2017-2027 is consistent with the 2030 Comprehensive Plan. The City of Jacksonville also supports development of a recreation master plan that will support the recreational use of the area by the public as outlined in Section 5.6 of the Management Plan. This recreation master plan will include planning for parking, trail design, and area resource interpretation.

Should you have any questions please feel free to contact me at (904) 255-7837 or via email at kreed@coj.net.

Sincerely,

Kristen D. Reed

Kristen D. Reed, AICP
Chief of Community Planning Division
Planning and Development Department
214 N. Hogan Street, Suite 300
Jacksonville, FL 32202

Economic and
Development Services

Planning and Zoning
Division

Address: PO Box 1366
Green Cove Springs, FL
32043

Phone: 904-278-4705

Fax: 904-278-3706

September 28, 2018

Ms. Rebecca Shelton
Florida Fish and Wildlife Conservation Commission
Bryant Building
620 South Meridian Street
Tallahassee, FL 32399-1600

RE: Branan Field Wildlife and Environmental Area Management Plan (BFWEA)

Dear Ms. Shelton,

The Clay County Planning and Zoning Division has reviewed the management plan for the Branan Field Wildlife and Environmental Area, formerly known as the Branan Field Mitigation Area, and find the proposed activities to be consistent with the policies of the Clay County Comprehensive Plan and Land Development Regulations. The subject property is designated Recreation/Preservation on the Clay County Future Land Use Map and is currently zoned Agriculture. It is also part of the Villages of Argyle Development of Regional Impact, which is located in Duval and Clay counties.

We appreciate the conservation and land management aspects of the plan, as well as the provision of recreational opportunities. Clay County has been working with our citizens in efforts to promote tourism and recreation opportunities within the County. We are also working with Duval County to establish a regional multi-use trail along the eastern edge of Jennings State Forest to connect Baldwin Trail to the existing multi-use trail that serves Gold Head Branch State Park. We are proud to have BFWEA as a recreation/environmental destination in Clay County.

Sincerely,

Edward Lehman, Director
Clay County Planning and Zoning Division

EL/crm
cc: Chereese Stewart, Economic and Development Services Director
Kimberly Morgan, Tourism Director