

A Management Plan for
Platt Branch
Wildlife and Environmental Area
2017 – 2027



Highlands County, Florida

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



Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Ryan E. Matthews
Interim Secretary

February 17, 2017

Mr. Thomas Houston
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

RE: Platt Branch Wildlife and Environmental Area - Lease #4745

Dear Mr. Houston:

On **February 17, 2017**, the Acquisition and Restoration Council recommended approval of the **Platt Branch Wildlife and Environmental Area** management plan. Therefore, the Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the **Platt Branch Wildlife and Environmental Area** management plan. The next management plan update is due February 17, 2027.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Ray Spaulding", is written over the word "Sincerely,".

Raymond V. Spaulding
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

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**A Management Plan
for
Platt Branch Wildlife and Environmental Area**

Highlands County, Florida

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



June 2016

Approved Thomas H. Eason

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: Platt Branch Wildlife and Environmental Area
 Location: Highlands County, Florida
 Acreage Total: 1,972 acres
 Acreage Breakdown:

<u>Land Cover Classification</u>	<u>Acres</u>	<u>Percent of Total Area</u>
Wet flatwoods	647.87	32.9%
Mesic flatwoods	632.42	32.1%
Pasture – improved	179.62	9.1%
Pasture – semi-improved	144.79	7.3%
Scrubby flatwoods	107.10	5.4%
Scrub	92.80	4.7%
Depression Marsh	77.03	3.9%
Floodplain swamp	39.74	2.0%
Mesic hammock	36.00	1.9%
Baygall	11.86	0.7%
Artificial pond	1.70	0.1%
Developed	0.69	0.03%

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

Lease/Management Agreement No.: 4745 (Appendix 13.2)

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: None

Type Acquisition: Mitigation Park Program

Unique Features: Natural: Platt Branch, Unique assemblage of imperiled wildlife species and Natural communities.

Archaeological/Historical: None documented within the area.

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 no parcels or acreage are on the FWC Additions and Inholdings list; However the Area adjoins Fisheating Creek Ecosystem Florida Forever Project Boundary that is recommended for Acquisition and the OCBP Shows Additional Lands Recommended for Potential Conservation (Figure 4 & Figure 11).

Surplus Lands/Acreage: None

Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 13.4)

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

ARC Approval Date _____ BTIITF Approval Date: _____

Comments: _____

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1	The common name of the property.	18-2.018 & 18-2.021	ii, 1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	4-5
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	4-7
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	ii, 1, 3, Appendix 13.1 and 13.2
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	12-14, 98
6	An assessment as to whether the property, or any portion, should be declared surplus. <i>Provide information regarding assessment and analysis in the plan, and provide corresponding map.</i>	18-2.021	52-53
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. <i>Please clearly indicate parcels on a map.</i>	18-2.021	79-82
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	10-11
9	A statement of the purpose for which the lands were acquired, the projected use or uses as defined in 253.034 and the statutory authority for such use or uses.	259.032(10)	4
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	7-10, 15

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	51-52
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	49-50
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	51-53
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	6-7, 83
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	48, 79, 83, 94

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	79-83
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)	51-52
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	105-106
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 13.14
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	17-19, 26-27, 46-48, 50-53, 64-74, 77-86
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	50-52
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	Appendix 13.10
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	52

*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	17, Appendix 13.4
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 13.4
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. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032(10)	17, Appendix 13.4
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 13.4
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034(5) & 259.032(10)	Appendix 13.4
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	62-63
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. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	18-19, 26-27, Appendix 13.5
33	Insert FNAI based natural community maps when available.	ARC consensus	36
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	20, 28-37

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	20, 28-37, 46-49
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	48
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	48
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	38-46
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	42-47
40	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	46-47
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)	62-120
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.	↓	62-120
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.		86-114
42-C.	The associated measurable objectives to achieve the goals.		86-114
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		62-120, Appendix 13.8
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		117-120, Appendix 13.12
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034(5)	19-38
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).		62-120

44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		86-114
44-C.	Measurable objectives (see requirement for #42-C).		86-114
44-D.	Related activities (see requirement for #42-D).		62-120, Appendix 13.8
44-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12
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).	↓	62-120
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		86-114
45-C.	Measurable objectives (see requirement for #42-C).		86-114
45-D.	Related activities (see requirement for #42-D).		62-120
45-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. <i>See footnote.</i>	253.034(5)	73-75
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 13.13
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).	↓	62-120
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		86-114
48-C.	Measurable objectives (see requirement for #42-C).		86-114
48-D.	Related activities (see requirement for #42-D).		62-120
48-E.	Budgets (see requirement for #42-E).		117-120

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	46, 48

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	46, 48
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	46, 48
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	46, 48
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).	↓	77-78
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		86-114
53-C.	Measurable objectives (see requirement for #42-C).		86-114
53-D.	Related activities (see requirement for #42-D).		62-120
53-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12

Section F: Historical, Archeological and Cultural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	48
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	48, 79
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	79, Appendix 13.11
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).	↓	62-120
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		86-114
57-C.	Measurable objectives (see requirement for #42-C).		86-114
57-D.	Related activities (see requirement for #42-D).		62-120
57-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12

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

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034(5)	75-80, 98
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).	↓	86-114
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		62-120
59-C.	Measurable objectives (see requirement for #42-C).		62-120
59-D.	Related activities (see requirement for #42-D).		86-114
59-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	75-80, 98
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).	↓	86-114
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		62-120
61-C.	Measurable objectives (see requirement for #42-C).		62-120
61-D.	Related activities (see requirement for #42-D).		86-114
61-E.	Budgets (see requirement for #42-E).		117-120, Appendix 13.12

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)	li
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	53-62
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	86-114

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)	117-120, Appendix 13.12
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)	117-120, Appendix 13.12
68	A statement of gross income generated, net income and expenses.	18-2.018	117-120, Appendix 13.12

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

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Management Plan Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
BEBR	Bureau of Economic and Business Research
CAS	Conservation Action Strategy
DACS	Department of Agriculture and Consumer Services
DEP	Department of Environmental Protection
DHR	Division of Historical Resources
DOA- NRCS	Department of Agriculture Natural Resource and Conservation Service
DRP	Division of Recreation and Parks
DSL	Division of State Lands
FAC	Florida Administrative Code
FCWMA	Fisheating Creek Wildlife Management Area
FDOT	Florida Department of Transportation
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FLU	Future Land Use
FNAI	Florida Natural Areas Inventory
FS	Florida Statute(s)
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GIS	Geographic Information Systems
GLO	General Land Office
GPS	Geographic Positioning System
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
IWHRS	Integrated Wildlife Habitat Ranking System
LAP	Landowner Assistance Program
LMR	Land Management Review
MAG	Management Advisory Group
MOU	Memorandum of Understanding
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
OBVM	Objective-Based Vegetation Management
OCPB	Optimal Conservation Planning Boundary
OFW	Outstanding Florida Waters
ORB	Optimal Resource Boundary
ORV	Off-Road Vehicle

PBMP	Platt Branch Mitigation Park
PBWEA	Platt Branch Wildlife and Environmental Area
SFWMD	South Florida Water Management District
SWFWMD	Southwest Florida Water Management District
RMP	Recreation Master Plan
SMA	Strategic Management Area
TNC	The Nature Conservancy
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
WRP	Wetland Reserve Program

1 Introduction and General Information

Flanking the northern boundary of the Fisheating Creek Wildlife Management Area (FCWMA), within the upper reaches of the Fisheating Creek Basin in southern Highlands County, just south of Lake Placid, the Platt Branch Wildlife and Environmental Area (PBWEA) conserves 1,972 acres of vital habitat for a rich diversity of imperiled and focal wildlife including the gopher tortoise, swallow-tailed kite, Florida scrub-jay, red-cockaded woodpecker, and other wildlife. Conservation of this important wildlife habitat also aids in the conservation of an important watershed for digressional wetlands draining into Platt Branch and Fisheating Creek, which together comprise the only free-flowing tributary to Lake Okeechobee. The area provides important habitat and wildlife corridor links to nearby conservation lands such as FCWMA, Fisheating Creek Lykes Brothers Conservation Easement and the Smoak Groves Conservation Easement, among others.

Connected through its streams and wetlands to both the Lake Wales Ridge and Fisheating Creek, and farther south to Lake Okeechobee, the PBWEA conserves a link in the chain of wildlife corridor within the larger landscape of south Florida uplands, creeks, sloughs, lakes, and swamps. In addition, it provides important watershed and water quality protection for streams and wetlands that drain into Fisheating Creek and Lake Okeechobee.

Located in a rural landscape of ranchlands, citrus groves, conservation lands, prairies, flatwoods, and scrub at the southern edge of the Lake Wales Ridge, the PBWEA's natural communities, including scrub, hammocks, flatwoods, marshes and swamps, provide a wide diversity of wildlife habitats. As a result of the array of habitat types found on the area, a variety of resident and migratory birds can be found on the PBWEA throughout the year, providing excellent birding opportunities as well as other wildlife viewing opportunities.



PBWEA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) to conserve and restore natural wildlife habitat, designed to offset transportation impacts on imperiled (listed) wildlife species, and to provide high-quality opportunities for hiking, wildlife viewing, and environmental education. The area is managed to conserve the

important natural communities, including mesic and wet flatwoods, that provide habitat for a wide range of imperiled species noted above such as the gopher tortoise, Florida scrub jay and the red-cockaded woodpecker, and to provide opportunities for natural resource-based public outdoor recreation compatible with the primary purpose for management of the area.

The following are the management plan elements that have been developed for the FWC's PBWEA, and are proposed for submittal to the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees) and the Acquisition and Restoration Council (ARC) through the Florida Department of Environmental Protection's (DEP) Division of State Lands (DSL) pursuant to the requirements of 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 the DSL.

1.1 Management Plan Purpose

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

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) of the State of Florida through the Florida Department of Environmental Protection's Division of State Lands (DSL), in compliance with paragraph seven of Lease No. 4745 (Appendix 13.2) 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 13.3) 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 13.4). 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 PBWEA 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 PBWEA 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 above, PBWEA is approximately 1,972 acres in size. It is located in southern Highlands County, approximately sixteen miles south of Lake Placid on the southern edge of the Lake Wales Ridge, eighteen miles northwest of Lake Okeechobee, and just north of the Fisheating Creek drainage. PBWEA lies just south of the Platt Branch, with a portion of the stream running along a northwest corner of the area. The PBWEA comprises approximately 1,972 acres in all or portions of Sections 25, 26, 33, 34, 35, and 36 in Township 39S, Range 29E, with a small portion of the area also located in Section 30, Township 39N, and Range 30E. In order to minimize human disturbances, there is only one public access entrance available from County Road (CR) 17 between CR731 and US Highway 27.



1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

In accordance with the PBWEA Memorandum of Understanding (MOU), the original 1,710 acres of PBWEA was acquired by Florida Department of Transportation (FDOT) and conveyed to FWC to establish a conservation area to offset or compensate for the impacts to listed species from transportation projects, including incidental take, and to further the conservation of listed species in the south central Florida region. The PBWEA provides habitat for gopher tortoise, the Florida panther, the red-cockaded woodpecker, the gopher frog, the eastern indigo snake, the Florida scrub-jay, the Florida sandhill crane, the Florida black bear, and the Sherman's fox squirrel.

The purpose for acquiring the 262 acre addition to the area, described above, was to conserve fish and wildlife resources commensurate with the purposes set forth in the PBWEA MOU and to provide compatible, passive, fish and wildlife based public outdoor recreation opportunities. Consequently, the PBWEA is managed by the FWC as a Wildlife and Environmental Area in conformance with the original purposes for acquisition to promote habitat conditions critical to meeting the life history requirements of the gopher tortoise, Florida scrub-jay, and the red-cockaded woodpecker, as well as other imperiled species listed in the PBWEA MOU. This is in order to provide ecological diversity, high quality wildlife habitat, and passive, wildlife-oriented public outdoor recreational opportunities such as hiking and wildlife viewing.

Further, the FWC is directed via Lease Number 4745, from the Board of Trustees, to "...manage these lands for the conservation and protection of natural and historical resources and for resource based public outdoor recreation which is compatible with the conservation and protection of these public lands as set forth in subsection 253.023(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 10 of this lease agreement."

1.3.2 Acquisition History

On November 18, 1994, a Memorandum of Understanding (MOU) was established between the Florida Department of Transportation (FDOT), U.S. Fish and Wildlife Service (USFWS), and the Florida Game and Fresh Water Fish Commission, now the FWC, for the establishment of PBWEA, previously designated as the Platt Branch Mitigation Park to protect vital habitat for the gopher tortoise and an array of imperiled, focal, and other wildlife species, including the Florida panther, the red-cockaded woodpecker, the gopher frog, the eastern indigo snake, the Florida scrub-jay, the Florida sandhill crane, the Florida black bear, and the Sherman's fox squirrel. Subsequently, the original 1,710 acres of the

area was acquired by the FDOT and conveyed to FWC in 1995 under the FWC's Mitigation Park Program.

The FWC implemented the now defunct Mitigation Park Program in 1988 under Section 372.074 of the Florida Statutes (FS), (since replaced by Chapter 379, FS), to help protect gopher tortoises 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. When developers proposed to develop habitat for gopher tortoises through this program, 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 and 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 areas acquired through the program continue to be actively managed by the FWC for their original purposes of 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.

As referenced above, the FWC acquired a 262 acre addition to PBWEA, in January 2000, under the FWC's Fish and Wildlife Habitat Program, which was established for the purpose of acquiring, assisting other agencies or local governments in acquiring, or managing lands important to the conservation of fish and wildlife. However, this addition to the area is not covered by the PBWEA MOU and is therefore, not eligible to be used as mitigation to offset impacts to imperiled wildlife species from transportation projects or any other type of development projects.

1.3.3 Mitigation Credits

Based upon mitigation criteria outlined in the PBWEA MOU, FDOT may apply to the USFWS and the FWC, to utilize allotted mitigation credits at PBWEA, to use as mitigation to offset transportation project impacts for the imperiled wildlife species, listed in the PBWEA MOU. If approved by the USFWS and FWC, FDOT is authorized to use a specified amount of the total mitigation credits allotted for PBWEA to mitigate for the impacts associated with the respective transportation project. The FWC and USFWS will continue

to review, evaluate and consider any future requests from the FDOT to utilize additional mitigation credits at PBWEA for transportation project impacts, until all of the remaining available mitigation credits for PBWEA are utilized.

Essentially, the formula for establishing the number of potential mitigation credits that are assigned to a respective mitigation area such as PBWEA, is based on the number of acres of viable, sustainable habitat calculated for each species of imperiled wildlife, which is determined through wildlife and habitat surveys that are determined to be on the mitigation area. In this way, the total acreage qualified to be used as mitigation is calculated. In general, mitigation credits are assigned for each acre of functional habitat as calculated for those species of imperiled wildlife that are projected to be sustainable on the area with genetically viable stable populations over time.

Table 1 below provides information regarding the total mitigation acreage/credits calculated for each species of imperiled wildlife listed in the PBWEA MOU for the original 1,710 acres of PBWEA that was acquired by the FDOT and subsequently conveyed to FWC for mitigation. Additionally, Table 1 also provides the tabulation of how many mitigation credits have been issued or approved for use by FDOT to offset transportation impacts to date, as well as the current remaining balance of mitigation credits that are available for potential use by FDOT in order to offset the wildlife impacts from respective transportation projects on those imperiled wildlife species covered by the PBWEA MOU.

Table 1: PBWEA Mitigation Acre-Credit Allotment and Usage

ID	Species	Original Acre-Credits	Remaining Acre-Credits
FP	Panther (PFUs)	14,898.3	14,236.0
SC	Sandhill crane	692.2	639.5
IS	Indigo snake	1,621.0	1,554.9
SJ	Scrub jay	324.7	298.6
BB	Black bear	325.7	325.7
FS	Fox squirrel	1,194.3	1,133.9
RCW	RCW	1,218.0	1,212.3
GT	Gopher tortoise	875.2	828.4
GF	Gopher frog	875.2	828.4

*Panther (PFUs) are calculated using a formula developed by the USFWS, which multiplies the number of acres by the USFWS Habitat Suitability Score.

1.4 Management Authority

The FWC is the designated lead managing agency for PBWEA as it holds the fee title ownership to the original 1,710 acres acquired in the area and under the authority granted by the PBWEA MOU, and by Lease Number 4745 from the Board of Trustees agent, DSL for the 260 acres acquired as an addition to the area. 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, 870, and 597 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

The 50-year Board of Trustees' Lease Agreement Number 4745 with FWC directs FWC to "manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), FS..." The lease agreement further directs FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), FAC, which have been selected, developed, or approved by lessor, lessee, or other land managing agencies for the protection and enhancement of the leased premises."

1.6 Title Interest and Encumbrances

Title to the original 1,710 acres of the lands with PBWEA is vested in FWC. Title to the 262 acre addition is vested in the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees), and is leased to FWC by the Board of Trustees through the DSL/DEP (Division of State Lands/Department of Environmental Protection) under Lease Number 4745, which is incorporated into PBWEA, making the area its current size of 1,972 acres. Consequently, as noted above, FWC has lead management authority for all resources within the established boundary through a combination of direct ownership and leasehold authority.

There are no known encumbrances or outstanding mineral rights or other interests within the established boundary of PBWEA.

1.7 Proximity to Other Public Conservation Lands

As noted above, the PBWEA is located in the vicinity of an extensive network of conservation lands, including FCWMA managed by the FWC as well as other conservation lands managed by the U.S. Department of Agriculture, Florida Department of Environmental Protection Division of Recreation and Parks (DEP-DRP), the SFWMD, the SWFWMD, Department of Agriculture Natural Resource and Conservation Service (DOA-NRCS), and several private conservation organizations. The Fisheating Creek/Lykes Brothers Conservation Easement lies directly adjacent to PBWEA, along the southern border.

Several Florida Forever projects, including the Fisheating Creek Florida Forever Project which borders PBWEA, are also located in the vicinity of the area shown in Table 2 and in Figure 3. Tables 2 and 3 list the Florida Forever projects and conservation lands within a 15-mile radius of the PBWEA, including lands managed by public and private entities, that conserve cultural and natural resources within this region of Florida. Most of the conservation lands listed in Table 3 are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification, where the land is owned and being managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land.



Table 2. Florida Forever Projects within a 15 mile Radius of PBWEA

Project Name	GIS Acres
Blue Head Ranch	41,369.47
Caloosahatchee Ecoscape	18,454.98
Fisheating Creek Ecosystem	184,179.04
Lake Wales Ridge Ecosystem – Gould Road	268.12
Lake Wales Ridge Ecosystem – Henscratch Ranch	2292.33
Lake Wales Ridge Ecosystem – Highlands Ridge	6061.61
Lake Wales Ridge Ecosystem – Holmes Avenue	1074.84
Lake Wales Ridge Ecosystem – Lake Apthorpe	3326.93
Lake Wales Ridge Ecosystem – Lake June West	864.48
Lake Wales Ridge Ecosystem – McJunkin Ranch	790.13
Lake Wales Ridge Ecosystem – Sun N Lakes South	485.12

Table 3. Conservation Lands within a 15 mile Radius of PBWEA

Federal Government	Managing Agency
Wetlands Reserve Program Easement #103	DOA-NRCS
Wetlands Reserve Program Easement #104	DOA-NRCS
Wetlands Reserve Program Easement #105	DOA-NRCS
Wetlands Reserve Program Easement #106	DOA-NRCS
Wetlands Reserve Program Easement #117	DOA-NRCS
Wetlands Reserve Program Easement #126	DOA-NRCS
Wetlands Reserve Program Easement #144	DOA-NRCS
Wetlands Reserve Program Easement #146	DOA-NRCS

Wetlands Reserve Program Easement #148	DOA-NRCS
Wetlands Reserve Program Easement #157	DOA-NRCS
Wetlands Reserve Program Easement #167	DOA-NRCS
Wetlands Reserve Program Easement #174	DOA-NRCS
Wetlands Reserve Program Easement #175	DOA-NRCS
Wetlands Reserve Program Easement #176	DOA-NRCS
Wetlands Reserve Program Easement #177	DOA-NRCS
Wetlands Reserve Program Easement #180	DOA-NRCS
Wetlands Reserve Program Easement #185	DOA-NRCS
Wetlands Reserve Program Easement #189	DOA-NRCS
Wetlands Reserve Program Easement #190	DOA-NRCS
Wetlands Reserve Program Easement #194	DOA-NRCS
Wetlands Reserve Program Easement #196	DOA-NRCS
Wetlands Reserve Program Easement #201	DOA-NRCS
Wetlands Reserve Program Easement #206	DOA-NRCS

State of Florida	Managing Agency
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Babcock Ranch Preserve	FFS
Fisheating Creek Wildlife Management Area	FWC
Fisheating Creek/Lykes Brothers Conservation Easement	FWC
Fisheating Creek/Smoak Groves Conservation Easement	FWC
Lake June-In-Winter Scrub State Park	DEP-DRP
Lake Wales Ridge Wildlife and Environmental Area	FWC
XL Ranch Conservation Easement	FLDOA

Water Management District	Managing Agency
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Bright Hour Watershed	SFWWMD
Caloosahatchee River Basin Water Quality Treatment and Testing Facility	SFWMD
Fisheating Creek	
Henscratch Conservation Easement	SFWMD
Lake Hicpochee Hydroelectric Enhancement	SFWMD
Lake Okeechobee ASR – Phase 1	SFWMD
Nicodemus Slough Flowage Easement	SFWMD

County/City	Managing Agency
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Curry Island	Glades County
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Private/Public Conservation Organization	Managing Agency
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Archbold Biological Station	Archbold Expedition, Inc.
Black Boar Ranch Conservation Easement	The Nature Conservancy Lake Okeechobee Habitat Alliance, Inc.
Curry Island	
Floraglates Preserve	Floraglates Foundation
Holmes Avenue	The Nature Conservancy National Audubon Society, Inc.
Lake Okeechobee Sanctuaries	
Lone Ranger Ranch TNC Conservation Easements	The Nature Conservancy
Moya Preserve	Floraglates Foundation Archbold Expeditions, Inc.
Scrub Conservation Bank	
Venus Flatwoods Preserve	The Nature Conservancy
XL Ranch Conservation Easements	The Nature Conservancy

Acronym Key	Agency Name
DEP	Florida Department of Environmental Protection
DOA	Department of Agriculture
DRP	Florida Department of Recreation and Parks
FFS	Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
NRCS	Natural Resource and Conservation Service
SFWMD	South Florida Water Management District
SWFWMD	Southwest Florida Water Management District

1.8 Adjacent Land Uses

As described above, the PBWEA is located in the south central region in Highlands County. PBWEA is located immediately north of CR 731, while the Detjens Dairy Road borders the eastern boundary of the area. U.S. Highway 27 is located approximately 3 miles east of PBWEA, and Venus, Florida is located approximately 5 miles northeast of the area.

The 2013 U.S. Census estimates that there are 97,616 people living in Highlands County. BEBR's (Bureau of Economic and Business Research) medium-range population projection indicates that in the year 2025, there will be 110,600 people living in the Highlands County. BEBR population projections for the counties surrounding Highlands County for the year 2025 are as follows: Charlotte County-181,000; Desoto County-35,400; Glades County-14,000; Hardee County-28,000; Okeechobee County-42,600; and Polk County-744,600.

The current zoning ordinance for the PBWEA is conservation/management lands. According to Highlands County's Comprehensive Land Use Plan, this designation allows for 1 unit/80 acres, camping, and up to 0.15 Floor Area Ratio, which is the ratio of development to the total size of the area. According to the Highlands County Recreation Master Plan, the following activities are allowed on the area: hiking, fishing, wildlife viewing and nature study, and geocaching. Activities that are not approved on the PBWEA include biking, horseback riding, picnicking, and camping. Highlands County future land use map shows that the PBWEA will remain zoned conservation/management lands.

The current land use designations for areas in the vicinity of the PBWEA are agriculture and conservation/management lands. Agricultural zoned lands allow for a minimum density of 1 dwelling unit per 5 acres and a maximum density of 1 unit per acre. Also the land must have direct access to a publicly maintained road. Lastly public schools, places of worship, emergency support services, public facilities, recreational facilities, community centers, museums, a public library, and galleries are allowed on land that is zoned agriculture. Usages allowed on land zoned conservation/management lands were discussed in the previous paragraph. According to the Highlands County Future Land Use Map, the immediate area surrounding PBWEA is recommended to remain zoned agriculture.

Although Highlands County is among the most heavily-developed counties in central Florida and many of the lands adjacent to the PBWEA have been platted, or have been used for grazing or other agricultural uses, and are designated as such in the Future Land Use (FLU) component of the County's Comprehensive Land Use Plan; the PBWEA is located in a rural area of the County and there is little, if any, development in the vicinity of the area. Additionally, much of the land within the immediate vicinity of the area are designated as conservation lands according to Highlands County's current zoning ordinance and FLU map. The current land use designation as depicted in the FLU for PBWEA is listed as conservation and recreation.

The PBWEA is not within an area of critical state concern or presently under study for such a designation.

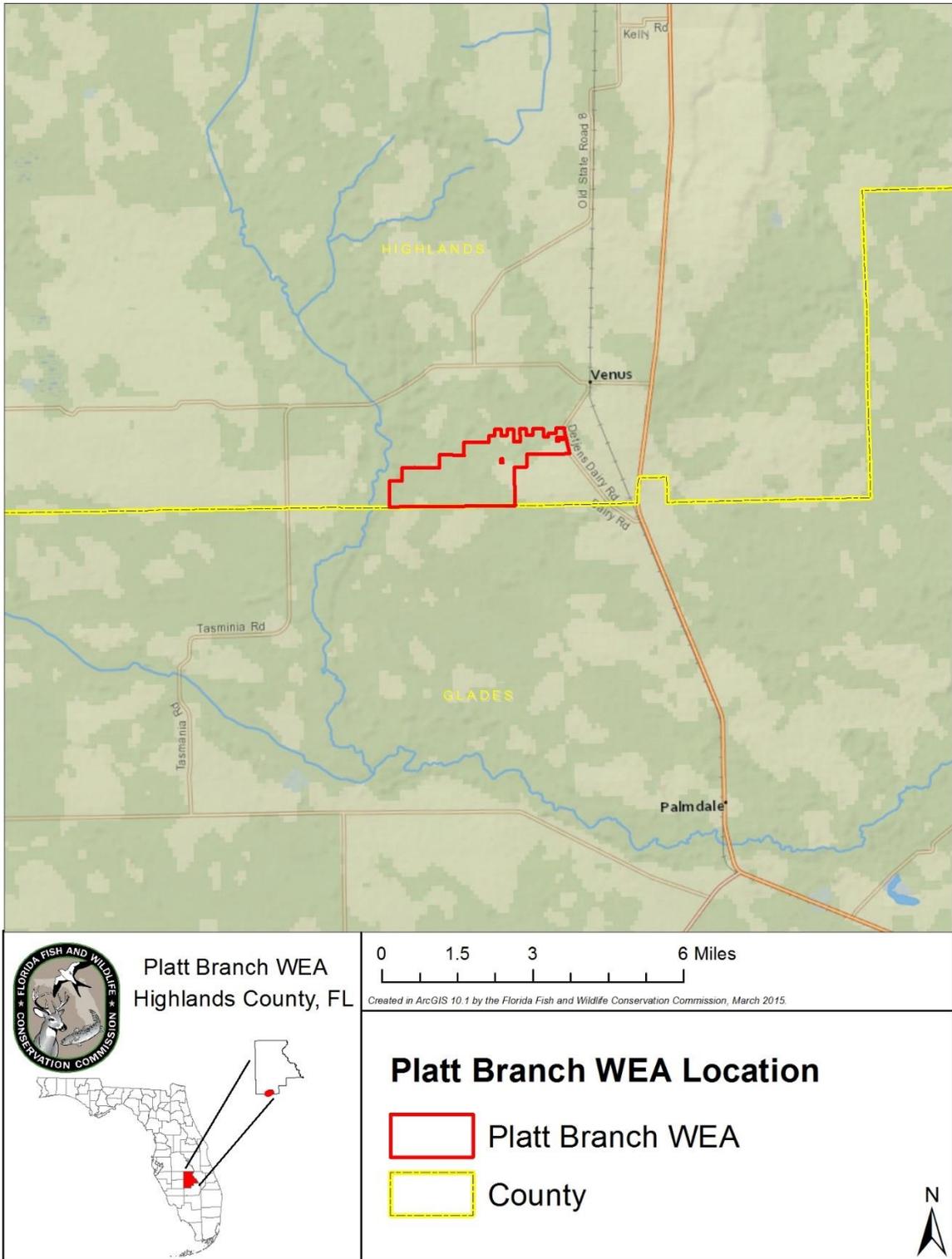


Figure 1. PBWEA Location

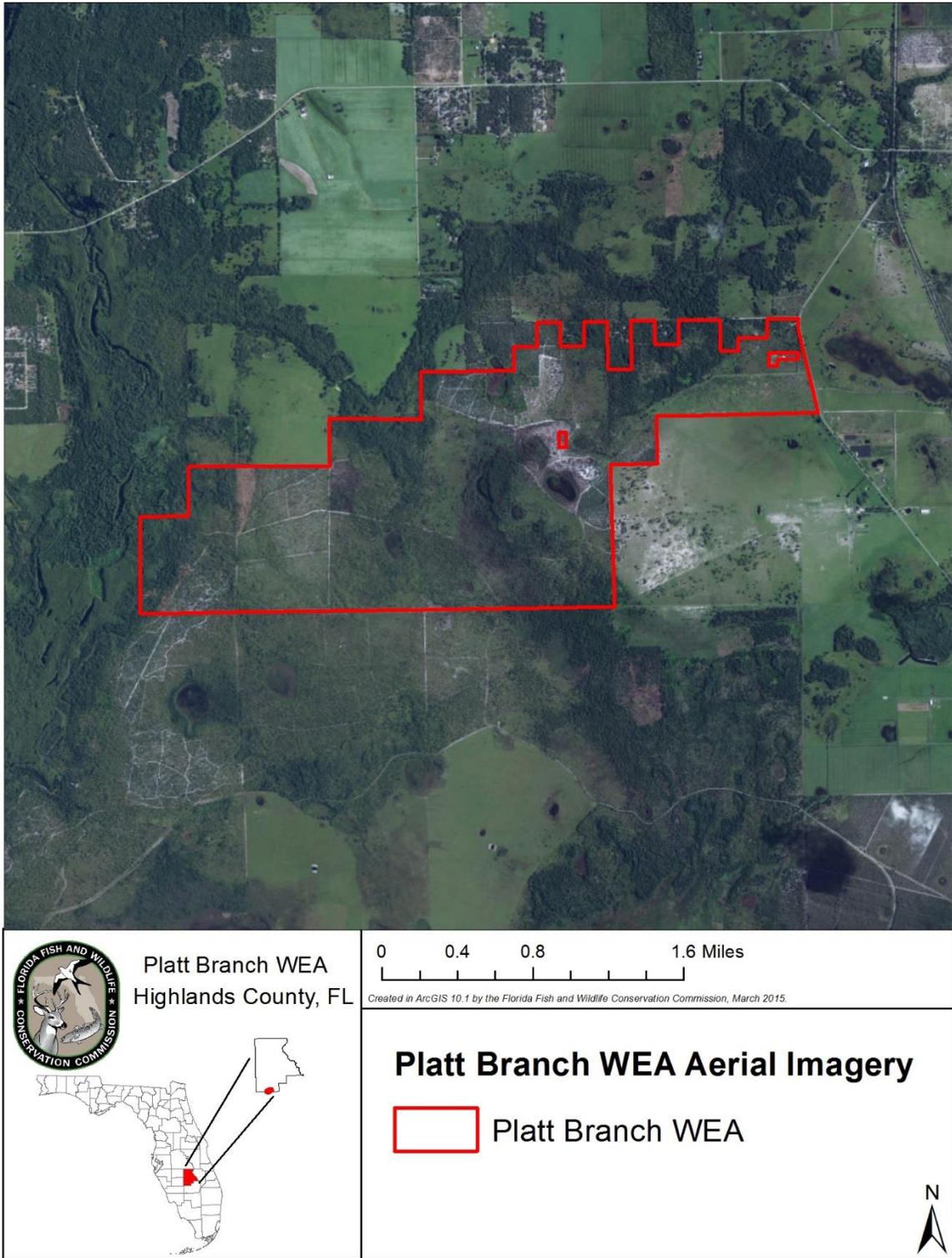


Figure 2. PBWEA Aerial Imagery

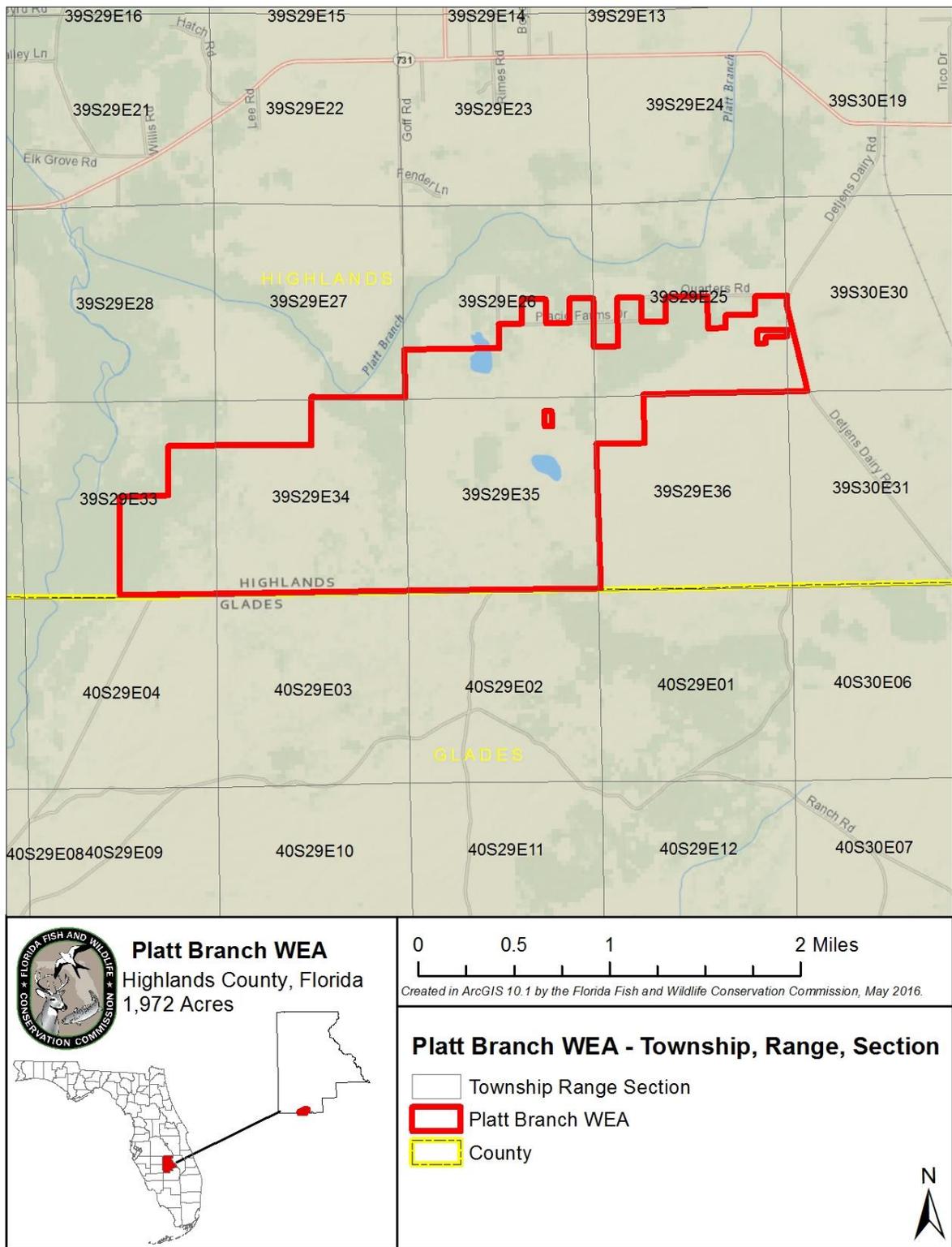
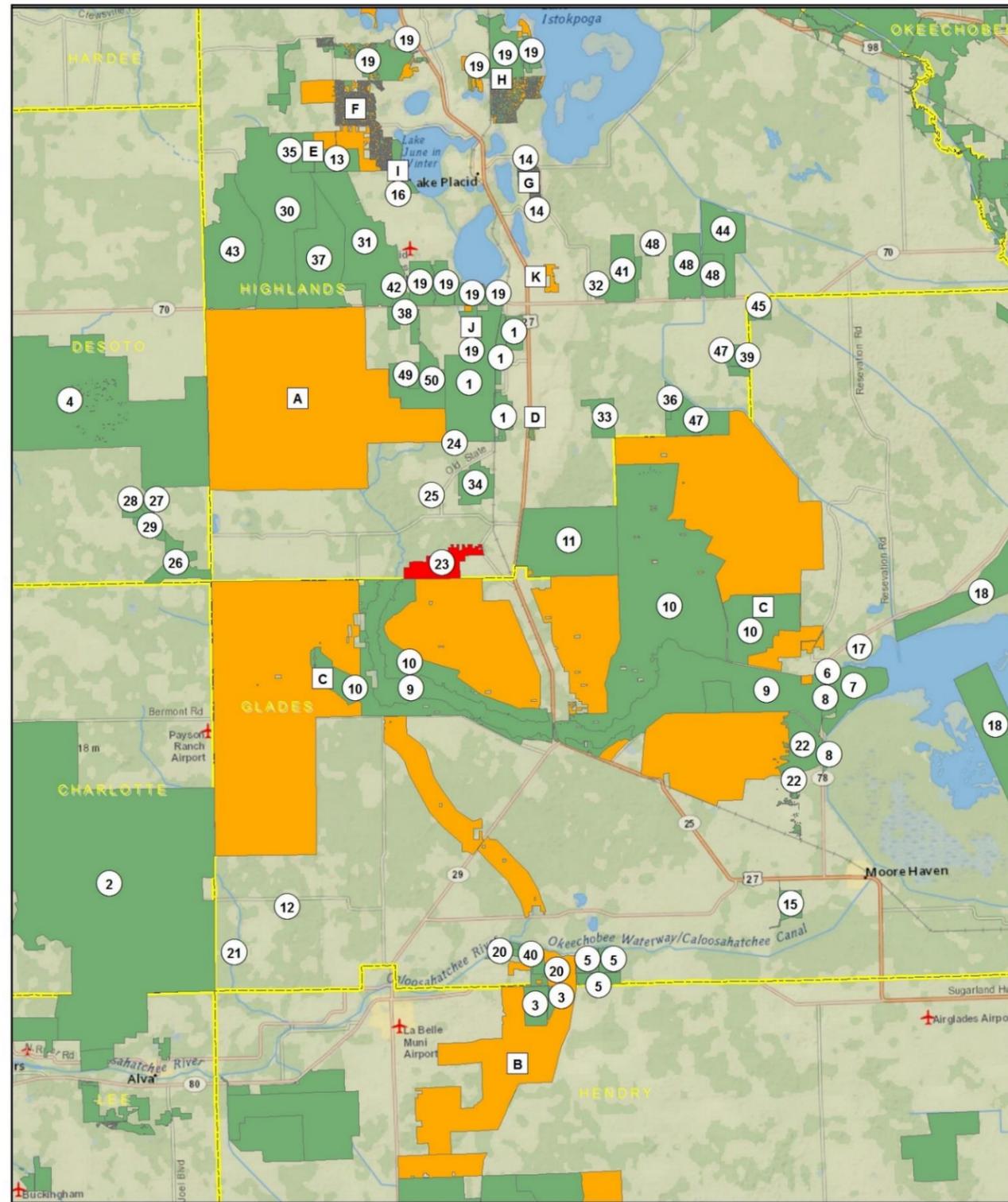


Figure 3. PBWEA Section, Township, and Range

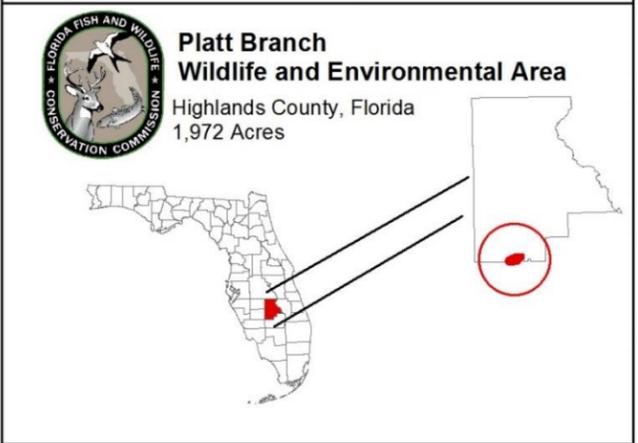


Conservation Lands within 15 miles of PBWEA

- 1 Archbold Biological Station
- 2 Babcock Ranch Preserve
- 3 Black Bear Ranch Conservation Easement
- 4 Bright Hour Watershed
- 5 Treatment and Testing Facility
- 6 Curry Island-Glades County
- 7 Curry Island- LOHA
- 8 Fisheating Creek
- 9 Fisheating Creek Wildlife Management Area
- 10 Easement
- 11 Easement
- 12 Floraglades Preserve
- 13 Henscratch Conservation Easement
- 14 Holmes Avenue
- 15 Lake Hicpochee Hydroelectric Enhancement
- 16 Lake June-In-Winter Scrub State Park
- 17 Lake Okeechobee ASR-Phase 1
- 18 Lake Okeechobee Sanctuaries
- 19 Area
- 20 Lone Ranger Ranch TNC Conservation Easement
- 21 Moya Preserve
- 22 Nicodemus Slough Flowage Easement
- 23 Scrub Conservation Bank
- 24 Venus Flatwoods Preserve
- 25 Wetlands Reserve Program Easement #103
- 26 Wetlands Reserve Program Easement #104
- 27 Wetlands Reserve Program Easement #105
- 28 Wetlands Reserve Program Easement #106
- 29 Wetlands Reserve Program Easement #117
- 30 Wetlands Reserve Program Easement #126
- 31 Wetlands Reserve Program Easement #144
- 32 Wetlands Reserve Program Easement #146
- 33 Wetlands Reserve Program Easement #148
- 34 Wetlands Reserve Program Easement #157
- 35 Wetlands Reserve Program Easement #167
- 36 Wetlands Reserve Program Easement #174
- 37 Wetlands Reserve Program Easement #175
- 38 Wetlands Reserve Program Easement #176
- 39 Wetlands Reserve Program Easement #177
- 40 Wetlands Reserve Program Easement #180
- 41 Wetlands Reserve Program Easement #185
- 42 Wetlands Reserve Program Easement #189
- 43 Wetlands Reserve Program Easement #190
- 44 Wetlands Reserve Program Easement #194
- 45 Wetlands Reserve Program Easement #196
- 46 Wetlands Reserve Program Easement #201
- 47 Wetlands Reserve Program Easement #206
- 48 XL Ranch Conservation Easement-FLDOA
- 49 XL Ranch Conservation Easements-TNC

Florida Forever Projects within 15 miles of PBWEA

- A Blue Head Ranch
- B Caloosahatchee Ecoscape
- C Fisheating Creek Ecosystem
- D Lake Wales Ridge Ecosystem – Gould Road
- E Lake Wales Ridge Ecosystem – Henscratch Ranch
- F Lake Wales Ridge Ecosystem – Highlands Ridge
- G Lake Wales Ridge Ecosystem – Holmes Avenue
- H Lake Wales Ridge Ecosystem – Lake Apthrope
- I Lake Wales Ridge Ecosystem – Lake June West
- J Lake Wales Ridge Ecosystem – McJunkin Ranch
- K Lake Wales Ridge Ecosystem – Sun N Lakes South



Legend

- Platt Branch WEA
- Conservation Lands
- Florida Forever Projects
- County

0 3.5 7 14 Miles

N

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Figure 4. PBWEA-Conservation Lands and Florida Forever Projects within a 15 mile vicinity

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1.9 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting in Sebring, Florida on March 23, 2016, to obtain input from both public and private stakeholders regarding management of PBWEA. 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 13.4.1. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Sebring, Florida on May 5, 2016, to solicit input and comment from the general public about this Management Plan. The report of the PBWEA Public Hearing is also contained in Appendix 13.4.3. A website is also maintained for receipt of public input at <http://myfwc.com/conservation/terrestrial/management-plans/develop-mps/>. Further testimony and input is received at a public hearing held by ARC. Input received from all public involvement efforts has been considered in the development of this Management Plan.

2 Natural and Historical Resources

2.1 Physiography

The PBWEA is located within the mid-peninsular physiographic zone at the foot of the Lake Wales Ridge, just north of the southern physiographic zone. The mid-peninsular zone contains discontinuous highlands separated by broad valleys and is composed of distinct physiographic divisions. The PBWEA lies within two of these physiographic divisions: the Desoto Plain taking up the majority of the area and the Lake Wales Ridge taking up a small portion along the eastern boundary of the area. The area is predominantly flat, with only gentle slopes and slight changes in elevation.

2.1.1 Climate

The climate of Highlands County, like most of peninsular Florida, is humid and subtropical, with long, warm, and humid summers and mild, dry winters. In the summer, temperature tends to remain relatively constant from day to day, with high temperatures being tempered by clouds and frequent afternoon rain showers. In the winter, on the other hand, temperatures tend to vary considerably due to dry, cold air coming in the form of cold fronts from the north. The average annual temperature is 71° Fahrenheit (F) in the summer and 62° F in the winter. The average annual rainfall is approximately 54 inches, with approximately 60% of the rainfall occurring in the wettest months from June to September. Temperatures tend to be the highest in August, when the average maximum temperature is 92° F and the average minimum is nearly 68° F. January tends to be the coldest month,

with an average maximum temperature of nearly 74° F and an average minimum temperature of nearly 52° F.

2.1.2 Topography

PBWEA occurs in a physiographic district known as the Southwestern Florida Flatwoods. Elevations within the area vary from a maximum of 93 feet above Mean Sea Level (MSL), to a minimum MSL of 60 feet. The topography of the area is delineated by sandy ridges interspersed through the area sloping to flatwoods marked by depressional wetlands and swamps draining into the area's streams and drainages.



The PBWEA does not contain beaches, dunes, or virgin timber.

2.1.3 Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) data were used to identify PBWEA's soil series and soil depth to water table (Figures 5 and 6). Five map units described in the soil survey of PBWEA are distributed as shown in Figure 5. Analyses of depth to water table for map units occurring within PBWEA are also provided in Figure 6. 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 5 provides aggregation data for PBWEA map units.

Soils found within the PBWEA are generally associated with improved pasture and prairies and are thus poorly to very poorly drained sandy or organic soils. Immokalee sands makes up more nearly half of the area, Basinger fine sand make up nearly a third of the area, and Satellite sand makes up about 10%. Various other sands including Archbold, Malabar, Pineda, and Placid make up 5% or less of the area. More extensive soils series descriptions may be found in Appendix 13.5.

2.1.4 Geologic Conditions

The Southern Highlands Region of peninsular Florida consists of a series of rather localized high grounds, comprising near parallel north-south ridges that are remnants of beach and sand-dune systems associated with Early Pleistocene shorelines. The region consists of xeric residual sandhills, beach ridges and dune fields, the whole of which is interspersed with numerous sinkhole lakes and basins caused by erosion of the underlying limestone bedrock. The main axis of the Central Highlands is the Central Ridge, extending from south-eastern Lake County in the north to southern Highlands County in the south. Undifferentiated Quaternary Sediments geological unit is what makes up PBWEA.

Undifferentiated Quaternary 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. Sediments showing surficial expression of beach ridges and dunes were mapped separately as were the sediments composing Trail Ridge. Terrace sands were not mapped refer to Healy [1975] for a discussion of the terraces in Florida. The subdivisions of the Undifferentiated Quaternary Sediments 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.

2.2 Vegetation

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC initially surveyed and mapped the natural and anthropogenic communities of the PBWEA in 2007. The area was re-mapped and the natural communities were recertified by the FNAI in 2014. This mapping effort identified 11 natural and altered community types existing on the PBWEA (Table 4 and Figure 7). The predominant natural community types existing on the area are mesic and wet flatwoods, and improved pasture. Surveys by FWC biologists and contracted FNAI staff have documented a variety of native plant species (Table 5) and imperiled plant species (Table 6) as occurring or expected to occur on the PBWEA. Table 7 displays the invasive/exotic plant species documented on or near the area, as well as the Florida Exotic Pest Plant Council (FLEPPC) categories for those species contained on the FLEPPC list of invasive plant species.

Additionally, utilizing historic aerial photographs and survey information of the area, the FNAI has mapped the historic natural communities on the PBWEA (Figure 8). The mapping of historic natural communities provides the FWC with knowledge of the historic conditions of the area and is used to help guide the management and restoration of the current natural communities on the PBWEA.

Table 4. Natural Community Types on PBWEA

Community Type	GIS Acres	Percentage
Artificial pond	1.70	0.1%
Baygall	11.86	0.7%
Depression Marsh	77.03	3.9%
Developed	0.69	0.03%
Floodplain swamp	39.74	2.0%
Mesic flatwoods	632.42	32.1%
Mesic hammock	36.00	1.9%
Pasture - improved	179.62	9.1%
Pasture – semi-improved	144.79	7.3%
Scrub	92.80	4.7%
Scrubby flatwoods	107.10	5.4%
Wet flatwoods	647.87	32.9%

Table 5. Plant Species Observed at PBWEA

Common Name	Scientific Name
Atlantic St. John's wort	<i>Hypericum tenuifolium</i>
Bahiagrass	<i>Paspalum notatum</i>
Bald cypress	<i>Taxodium distichum</i>
Ballmoss	<i>Tillandsia recurvata</i>
Beaksedge	<i>Rhynchospora</i> sp.
Blackroot	<i>Pterocaulon pycnostachyum</i>
Blazing star	<i>Liatris</i> sp.
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>
Bluestem	<i>Andropogon</i> sp.
Bog white violet	<i>Viola lanceolata</i>
Bottlebrush threeawn	<i>Aristida spiciformis</i>
Broomsedge bluestem	<i>Andropogon virginicus</i>
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Cabbage palm	<i>Sabal palmetto</i>
Camphor weed	<i>Pluchea</i> sp.
Canadian woodnettle	<i>Laportea canadensis</i>
Capillary hairsedge	<i>Bulbostylis ciliatifolia</i>
Chalky bluestem	<i>Andropogon virginicus</i> var. <i>glaucus</i>
Chapman's oak	<i>Quercus chapmanii</i>
Cinnamon fern	<i>Osmunda cinnamomea</i>
Climbing hempvine	<i>Mikania scandens</i>

Coastalplain honeycombhead	<i>Balduina angustifolia</i>
Coastalplain milkwort	<i>Polygala setacea</i>
Coastalplain staggerbush	<i>Lyonia fruticosa</i>
Coastalplain yelloweyed grass	<i>Xyris ambigua</i>
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>
Common buttonbush	<i>Cephalanthus occidentalis</i>
Common wild pine	<i>Tillandsia fasciculata</i>
Creeping primrosewillow	<i>Ludwigia repens</i>
Dahoon	<i>Ilex cassine</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Dotted smartweed	<i>Persicaria punctata</i>
Dwarf huckleberry	<i>Gaylussacia dumosa</i>
Dwarf live oak	<i>Quercus minima</i>
	<i>M. cerifera</i>
Eastern poison ivy	<i>Toxicodendron radicans</i>
Elderberry	<i>Sambucus nigra</i> subsp. <i>canadensis</i>
Elliott's milkpea	<i>Galactia elliotii</i>
False nettle	<i>Boehmeria cylindrica</i>
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>
Feay's Palafox	<i>Palafoxia feayi</i>
Fetterbush	<i>Lyonia lucida</i>
Flatsedge	<i>Cyperus</i> sp.
Flattened pipewort	<i>Eriocaulon compressum</i>
Florida rosemary	<i>Ceratiola ericoides</i>
Florida scrub frostweed	<i>Helianthemum nashii</i>
Florida tickseed	<i>Coreopsis floridana</i>
Foxtail grass	<i>Setaria</i> sp.
Gallberry	<i>Ilex glabra</i>
Garberia	<i>Garberia heterophylla</i>
Giant airplant	<i>Tillandsia utriculata</i>
Glade lobelia	<i>Lobelia glandulosa</i>
Golden polypody	<i>Phlebodium aureum</i>
Gopher apple	<i>Licania michauxii</i>
Green arrow arum	<i>Peltandra virginica</i>
Groundsel tree	<i>Baccharis halimifolia</i>
Hairy chaffhead	<i>Carphephorus paniculatus</i>
Highbush blueberry	<i>Vaccinium corymbosum</i>
Hog plum	<i>Ximenia americana</i>
Hottentot fern	<i>Thelypteris interrupta</i>

Iris	<i>Iris</i> sp.
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>
Jeweled blue-eyed grass	<i>Sisyrinchium xerophyllum</i>
Knotted spikerush	<i>Eleocharis interstincta</i>
Large gallberry	<i>Ilex coriacea</i>
Lemon bacopa	<i>Bacopa caroliniana</i>
Lesser creeping rush	<i>Juncus repens</i>
Live oak	<i>Quercus virginiana</i>
Lizard's tail	<i>Saururus cernuus</i>
Loblolly bay	<i>Gordonia lasianthus</i>
Loblolly pine	<i>Pinus taeda</i>
Longleaf pine	<i>Pinus palustris</i>
Longleaf threeawn	<i>Aristida palustris</i>
Lopsided indiagrass	<i>Sorghastrum secundum</i>
Low pinebarren milkwort	<i>Polygala ramosa</i>
Maidencane	<i>Panicum hemitomom</i>
Manyflower marshpennywort	<i>Hydrocotyle umbellata</i>
Marsh fern	<i>Thelypteris palustris</i> var. <i>pubescens</i>
Marsh mermaidweed	<i>Proserpinaca palustris</i>
Millet beaksedge	<i>Rhynchospora miliacea</i>
Muscadine	<i>Vitis rotundifolia</i>
Myrsine	<i>Myrsine cubana</i>
Myrtle oak	<i>Quercus myrtifolia</i>
Myrtleleaf St. John's wort	<i>Hypericum myrtifolium</i>
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>
Netted chain fern	<i>Woodwardia areolata</i>
Netted pawpaw	<i>Asimina reticulata</i>
Northern needleleaf	<i>Tillandsia balbisiana</i>
October flower	<i>Polygonella polygama</i>
Pale meadowbeauty	<i>Rhexia mariana</i>
Panic grass	<i>Panicum</i> sp.
Peelbark St. John's wort	<i>Hypericum fasciculatum</i>
Peruvian primrosewillow	<i>Ludwigia peruviana</i>
Pickernelweed	<i>Pontederia cordata</i>
Pinebarren flatsedge	<i>Cyperus retrorsus</i>
Pipewort	<i>Eriocaulon</i> sp.
Pond cypress	<i>Taxodium ascendens</i>
Possumhaw	<i>Viburnum nudum</i>
Pricklypear	<i>Opuntia humifusa</i>

Purple bluestem	<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>
Purple thistle	<i>Cirsium horridulum</i>
Queensdelight	<i>Stillingia sylvatica</i>
Rabbitbells	<i>Crotalaria rotundifolia</i>
Red chokeberry	<i>Photinia pyrifolia</i>
Red maple	<i>Acer rubrum</i>
Rough hedgehyssop	<i>Gratiola hispida</i>
Roundleaf bluet	<i>Houstonia procumbens</i>
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>
Rush	<i>Juncus</i> sp.
Sand cordgrass	<i>Spartina bakeri</i>
Sand live oak	<i>Quercus geminate</i>
Sand live oak	<i>Quercus geminata</i>
Sand pine	<i>Pinus clausa</i>
Sand spike-moss	<i>Selaginella arenicola</i>
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>
Saw palmetto	<i>Serenoa repens</i>
Scrub oak	<i>Quercus inopina</i>
Scrub palmetto	<i>Sabal etonia</i>
Shiny blueberry	<i>Vaccinium myrsinites</i>
Shortleaf skeletongrass	<i>Gymnopogon brevifolius</i>
Shortspike bluestem	<i>Andropogon brachystachyus</i>
Slash pine	<i>Pinus elliotii</i>
Slender flattop goldenrod	<i>Euthamia caroliniana</i>
Smallfruit beggarticks	<i>Bidens mitis</i>
Smartweed	<i>Polygonum</i> sp.
Smutgrass	<i>Sporobolus indicus</i>
South Florida slash pine	<i>Pinus elliotii</i> var. <i>densa</i>
Southern cutgrass	<i>Leersia hexandra</i>
Southern dewberry	<i>Rubus trivialis</i>
Southern needleleaf	<i>Tillandsia setacea</i>
Southern umbrellasedge	<i>Fuirena scirpoidea</i>
Spadeleaf	<i>Centella asiatica</i>
Spanish moss	<i>Tillandsia usneoides</i>
Sphagnum moss	<i>Sphagnum</i> sp.
Sprangletop	<i>Leptochloa</i> sp.
Spreading beaksedge	<i>Rhynchospora divergens</i>
St. Andrew's cross	<i>Hypericum hypericoides</i>
St. John's wort	<i>Hypericum</i> sp.

Sugarcane plumegrass	<i>Saccharum giganteum</i>
Swamp bay	<i>Persea palustris</i>
Swamp laurel oak	<i>Quercus laurifolia</i>
Swamp tupelo	<i>Nyssa sylvatica</i> var. <i>biflora</i>
Swampforest beaksedge	<i>Rhynchospora decurrens</i>
Sweet goldenrod	<i>Solidago odora</i>
Sweetbay	<i>Magnolia virginiana</i>
Switchgrass	<i>Panicum virgatum</i>
Tall elephantsfoot	<i>Elephantopus elatus</i>
Tarflower	<i>Bejaria racemosa</i>
Three-awn grass	<i>Aristida</i> sp.
Toothed midsorus fern	<i>Blechnum serrulatum</i>
Toothpetal false reinorchid	<i>Habenaria floribunda</i>
Tough bully	<i>Sideroxylon tenax</i>
Tread softly	<i>Cnidioscolus stimulosus</i>
Turkey oak	<i>Quercus laevis</i>
Virginia chain fern	<i>Woodwardia virginica</i>
Viviparous spikerush	<i>Eleocharis vivipara</i>
Ware's hairsedge	<i>Bulbostylis warei</i>
Water cowbane	<i>Oxypolis filiformis</i>
Water oak	<i>Quercus nigra</i>
Wax myrtle	<i>Myrica cerifera</i>
White twinevine	<i>Sarcostemma clausum</i>
Whitehead bogbutton	<i>Lachnocaulon anceps</i>
Whitetop aster	<i>Sericocarpus tortifolius</i>
Wild pennyroyal	<i>Piloblephis rigida</i>
Winged sumac	<i>Rhus copallinum</i>
Wiregrass	<i>Aristida stricta</i> var. <i>beyrichiana</i>
Witch grass	<i>Dichanthelium</i> sp.
Yellow pondlily	<i>Nuphar advena</i>
Yellow-eyed grass	<i>Xyris</i> sp.

Table 6. Rare Plant Species of the PBWEA

Common Name	Scientific Name	Status
Catesby's lily	<i>Lilium catesbaei</i>	ST
Common wild-pine	<i>Tillandsia fasciculata</i>	SE
Cutthroatgrass	<i>Panicum abscissum</i>	SE
Edison's ascyrum	<i>Hypericum edisonianum</i>	SE
Florida beargrass	<i>Nolina atopocarpa</i>	ST

Garberia	<i>Garberia herophylla</i>	ST
Giant orchid	<i>Pteroglossaspis ecristata</i>	ST
Nodding pinweed	<i>Lechea cernua</i>	ST
Northern needleleaf	<i>Tillandsia balbisiana</i>	ST
Scrub blue-stem	<i>Schizachyrium niveum</i>	SE
Spreading airplant	<i>Tillandsia utriculata</i>	SE

Table 7. Exotic Invasive Plant Species Known to Occur on the PBWEA

Common Name	Scientific Name	FLEPPC Category
Air potato	<i>Dioscorea bulbifera</i>	I
Asian sword fern	<i>Nephrolepis brownii</i>	I
Australian pine	<i>Casuarina equisetifolia</i>	I
Bahiagrass	<i>Paspalum notatum</i>	
Brazilian pepper	<i>Schinus terebinthifolia</i>	I
Caesar's weed	<i>Urena lobata</i>	I
Centipedegrass	<i>Eremochloa ophiuroides</i>	
Cogon grass	<i>Imperata cylindrica</i>	I
Natal grass	<i>Melinis repens</i>	I
Old World climbing fern	<i>Lygodium microphyllum</i>	I
Strawberry guava	<i>Psidium cattleianum</i>	I
Tropical soda apple	<i>Solanum viarum</i>	I
Zarabacoa comun	<i>Desmodium incanum</i>	

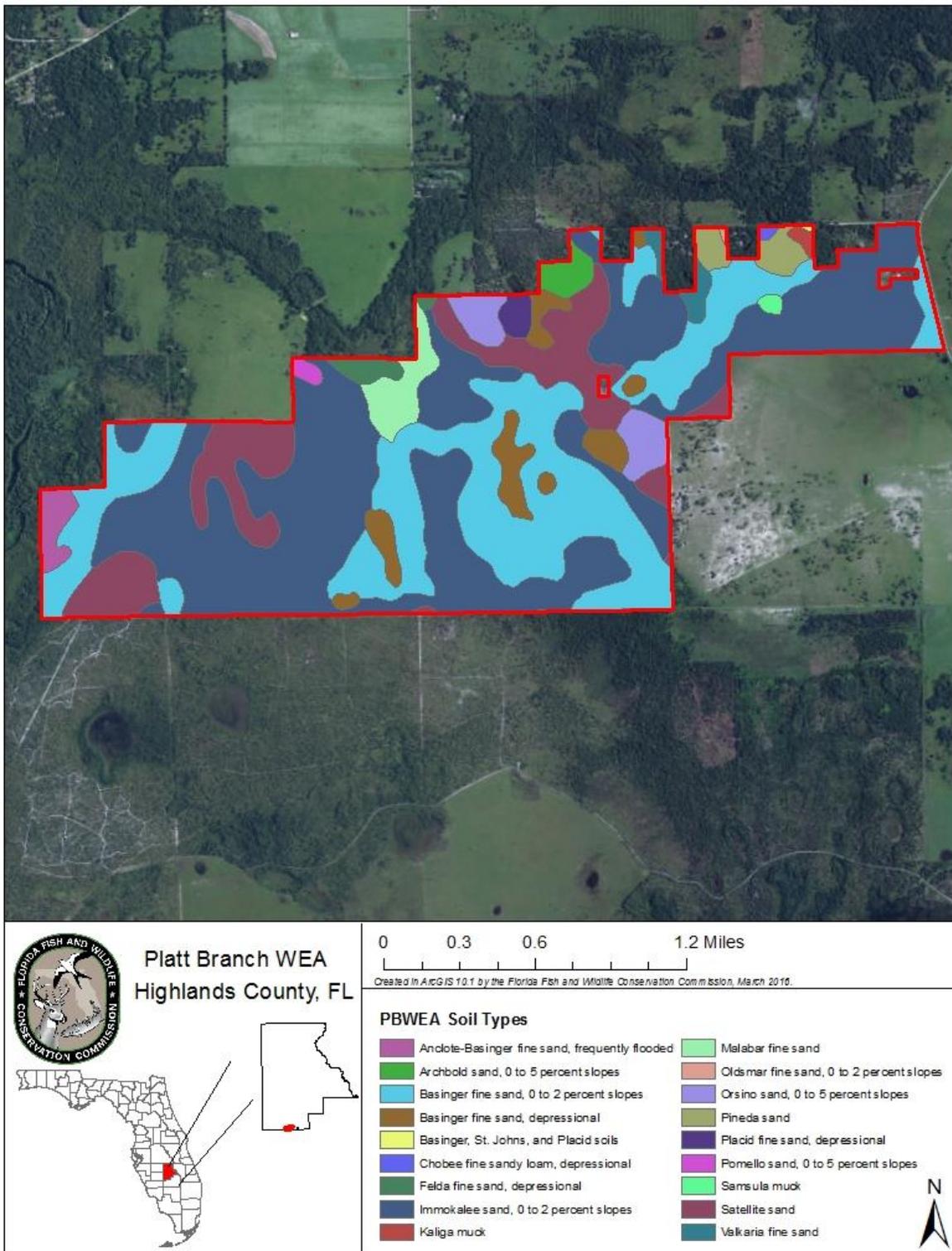


Figure 5. PBWEA Soil Type

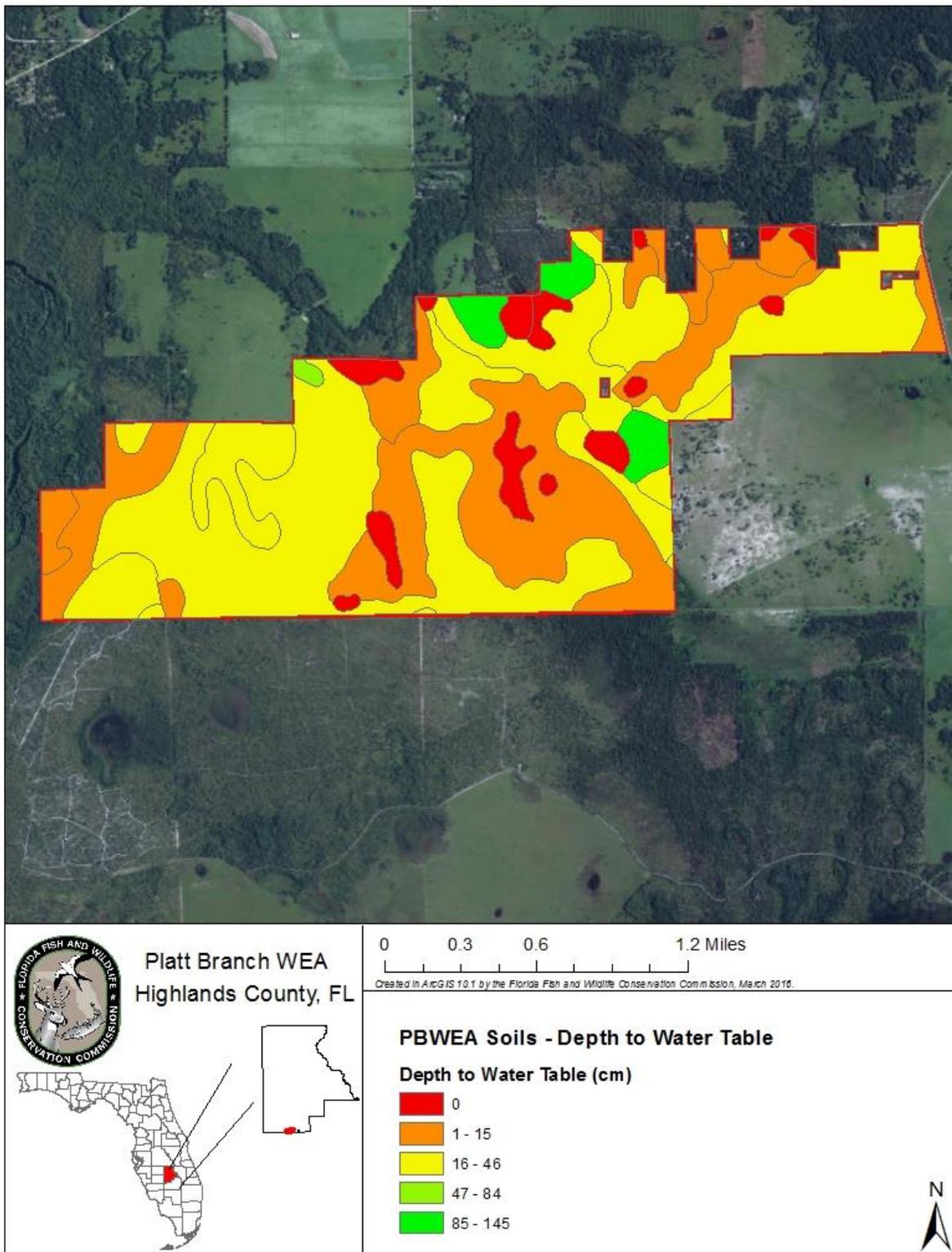


Figure 6. PBWEA Soil Depth to Water Table

2.2.1 FNAI Natural Community Descriptions

Baygall (~ 11.86 acres)

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

At PBWEA, baygall often forms a closed canopy that restricts development of a diverse herb layer. Shrubs are typically dense on the outer edges and forest openings of the community. The canopy dominants in this community include red maple, loblolly bay, sweetbay, swamp tupelo, and swamp laurel oak. Subcanopy species include red maple, loblolly bay, sweetbay, swamp bay, and swamp laurel oak. Tall shrub species include sweetbay, wax myrtle, swamp bay, myrsine, elderberry, strawberry guava, highbush blueberry, and possumhaw. The short shrub layer includes gallberry, St. Andrew's cross, swamp bay, myrsine, and southern dewberry. Herbaceous species include, but are not limited to jack-in-the-pulpit, toothpetal false reinorchid, lesser creeping rush, creeping primrosewillow, cinnamon, royal fern, and the rare cutthroat grass. This community often forms in areas of wet flatwoods that have been fire excluded. Currently this community was only mapped at areas where it was believed to exist historically in the area. Most areas of fire excluded wet flatwoods that contain a high percentage of bay species are still recognizable as flatwoods.

The baygall community makes up less than 1% of PBWEA. Historically baygall would have only formed in saturated areas that were isolated from fire except during periods of drought.

Depression Marsh (~ 77.03 acres)

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

fire-maintained natural communities such as mesic flatwoods, dry prairie, or sandhill. Depression marshes are typically small wetlands that are circular or oval in shape and are dominated by herbaceous species. Hydroperiods can range widely from as few as 50 days or less to more than 200 days of inundation per year. Depression marshes often dry out during periods of low rainfall and, as a result, burn when fires occur in the surrounding uplands. The substrate is usually acid sand with possibly some deepening peat toward the center. Because water depth in depression marshes usually increases toward the center, vegetation may form distinctive natural community zones corresponding to the depth of the water.

At PBWEA, examples of this community with increasing amounts of woody plants typically suggest some degree of fire exclusion. Prescribed burning is important for maintaining this habitat. The tall shrubs present in depression marshes at PBWEA are infrequent and include red maple, wax myrtle, live oak, loblolly bay, swamp tupelo, South Florida slash pine, and saw palmetto. Short shrubs typically colonized the outer edges of marshes and are represented by peelbark St. John's wort, St. John's wort, Edison's St. John's wort, gallberry, swamp bay, cabbage palm, and saw palmetto. The dense and diverse herbaceous layer of the depression marsh community includes blue maidencane, bluestem, bushy bluestem, broomsedge bluestem, longleaf threeawn, wiregrass, and lemon bacopa.

Currently this community is of high quality, and makes up nearly 4% of the area, but small trees and shrubs have established due to fire exclusion. Prescribed fire is key for the long term health of this species. Disturbances to this community include ditching, fire exclusion, woody encroachment and hog damage. Hog damage is quite severe in localized areas and efforts should be taken to control the abundance of this species.

Floodplain Swamp (~ 39.74 acres)

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

AT PBWEA, shrubs in this community are variable in densities; often sparse in canopied situations and thick in open and ecotone area. Dominant species in both the canopy and

subcanopy layers of floodplain swamp at PBWEA include younger mature red maple, pond cypress, and bald cypress. Also present is swamp laurel oak. Shrubby taxa include common buttonbush, large gallberry, Peruvian primrosewillow, wax myrtle, and pond cypress. The moderately dense herbaceous layer of the floodplain swamp includes toothed midsorus fern, false nettle, flatsedge, Iris, Canadian woodnettle, old world climbing fern, yellow pondlily, panic grass, switchgrass, and lizard's tail. Hog damage and fire exclusion were also evident in this community.

Floodplain swamp makes up approximately 2% of the area. Historically, the centrally located floodplain swamp community was partially floodplain marsh in the 1944 aerial photography. Fire exclusion has allowed trees and tall shrubs to establish and dominate this area. This community would likely have been dominated typically by bald cypress with a graminoid dominated understory, as dictated by frequent historical fire events.

Mesic Flatwoods (~ 632.42 acres)

Mesic flatwoods historically were the most widespread natural community in Florida, covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods are open, pine forests with a diverse understory of shrubs and herbs occurring on low, flat terrain. 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. Fire is an important factor in maintaining high plant diversity and naturally occurs primarily during the late spring/early summer lightning season.



At PBWEA, the mesic flatwoods community is of relatively high quality with widely spaced pines, low, fire-managed shrubs and a diverse array of herbs and graminoids. Some areas show evidence of fire exclusion, typically in the northeastern portions of the property where these areas of this natural community have dense tree canopies and tall shrubs dominating the lower strata. Primary canopy species at PBWEA include South Florida slash pine and longleaf pine. The latter are also present as subcanopy trees. Tall shrubs include tarflower, gallberry, coastalplain staggerbush, fetterbush, wax myrtle, swamp bay, Chapman's oak, sand live oak, and live oak. Short shrub taxa include dwarf huckleberry, myrtleleaf St. John's wort, Atlantic St. John's wort, and shiny blueberry. A diverse herbaceous layer includes species such as shortspike bluestem and yellow-eyed grass.

Mesic flatwoods are one of the most dominant communities on the area making up around 32% of the area. Historically, mesic flatwoods at PBWEA would have consisted of widely spaced old growth pines with frequent growing season fires occurring every 1 to 3 years. Shrubs would have been restricted to low heights and moderate covers that would allow for a diverse and often dense assemblage of herbaceous species, dominated by wiregrass.

Mesic Hammock (~ 36 acres)

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

At PBWEA, canopy species in the mesic hammock community include live oak, loblolly bay and South Florida slash pine. Subcanopy species include dahoon and swamp laurel oak. Shrubs are limited to saw palmetto and possumhaw. The herbaceous layer includes cutthroat grass and panic grass. Epiphytes include golden polypody, northern needleleaf, ballmoss, southern needleleaf, and Spanish moss. This community typically has a closed canopy with sparse shrub and herb coverage.

The presence of cutthroat grass in this community on the area indicates this would have been an open, pyrogenic community historically. It is likely that mesic hammock did not exist at this site historically, but rather this would have been a seepage transition community classified as wet flatwoods.

Scrub (~ 92.80 acres)

Scrub is a community composed of evergreen, xerophytic shrubs, with or without a canopy of pines, and is found on dry, infertile, sandy ridges. Scrub communities dominated by a

canopy of sand pine are usually found on the highest sandy ridgelines. The pine canopy may range from widely scattered trees with a short, spreading growth form, to tall thin trees forming a dense canopy of uniform height. Scrub is located on dry, infertile, sandy ridges which often mark the location of former shorelines. Scrub occurs in many forms, but is often characterized by thickets of scrub oaks and other shrubs occurring on xeric, sandy soils with numerous open patches of barren sand. The ground cover is generally very sparse, and is typically dominated by ground lichens or, rarely, herbs.

At PBWEA, the scrub canopy varies from open and sparse to close and often grades into the tall shrub layer. Dominant canopy and tall shrub species include sand pine, sand live oak, turkey oak, tarflower, coastalplain staggerbush, Chapman's oak, scrub oak, and myrtle oak. Short shrubs are common and often dense, limiting the herbaceous layer. Short shrubs include Florida rosemary, garberia, coastalplain staggerbush, Chapman's oak, scrub oak, myrtle oak, scrub palmetto, saw palmetto, shiny blueberry, and hog plum. Currently, much of this community has a variable structure throughout, with some areas of bare sand. High numbers of the rare scrub pinweed were documented within PBWEA's scrub habitat. This species presence is a good indicator that scrub habitat at PBWEA is of relatively high quality. Some areas to the north have excessive woody growth and are in need of fire management. Currently scrub only covers about 5% of the area and considerable efforts will be needed to convert many of the pasture areas back to a scrub community.

Historically, this community would have looked very similar to how it does currently on the area, but with a generally lower structure to many of its strata layers, especially the tall shrub layer. Roads and firebreaks that often cross this site also would not have been present. Prescribed fire has successfully removed much of the sand pine that was becoming too large in this community.

Scrubby Flatwoods (~ 107.10 acres)

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

At PBWEA, scrubby flatwoods is typically overgrown due to fire exclusion. The essential components of this community, canopy pines and a scrub oak midstory are still present, but a well-developed herbaceous layer is lacking. The scrubby flatwoods canopy includes South Florida slash pine, longleaf pine, Chapman's oak, sand live oak, and turkey oak.

Subcanopy species include South Florida slash pine, longleaf pine, sand live oak, turkey oak, and myrtle oak. There is a dense tall shrub layer that grades into the canopy in several locations. Tall shrub species include coastalplain staggerbush, fetterbush, South Florida slash pine, longleaf pine, Chapman's oak, sand live oak, myrtle oak, and live oak. The short shrubs include Atlantic St. John's wort, gopher apple, coastalplain staggerbush, fetterbush, Feay's palafox, strawberry guava, Chapman's oak, sand live oak, scrub oak, and jeweled blue-eyed grass.



Making up a little over 5% of the area, this community often contains a variable canopy, dense shrub layers and sparse herbaceous elements. It occurs as a broad ecotone between scrub and other mesic and hydric communities. Fire management is needed to restore these areas back to a historic condition that is more open with short shrubs dominating. Disturbance to this community includes exotic species establishment, fire exclusion, and woody encroachment.

Historically, this community would have burned almost as frequently as mesic flatwoods. The structure of scrubby flatwoods would have consisted of widely spaced pines, shrubs with low heights and dense to sparse herbaceous coverage. The shrub layer of this community would have had a more variable height as compared to mesic flatwoods due to a slightly longer duration between fires, and greater shrub patchiness. These communities blend into one another and do not necessarily form distinctive boundaries.

Wet Flatwoods (~ 647.87 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. Wet flatwoods typically have an open pine canopy with an understory of hydrophytic herbs and shrubs. Wet flatwoods that burn frequently typically have a sparse understory and a dense complement of herbs and smaller shrubs. Conversely, thick, shrubby understory layers tend to suppress groundcover plants.

At PBWEA, South Florida slash and longleaf pine are the primary elements in the canopy layer of the wet flatwoods. The sparse subcanopy includes loblolly bay, sweetbay, swamp bay, South Florida slash pine, longleaf pine, swamp laurel oak, water oak, and live oak. Tall shrubs include loblolly bay, gallberry, fetterbush, wax myrtle, swamp bay, red chokeberry, live oak, cabbage palm, saw palmetto, and highbush blueberry. The short shrub layer includes loblolly bay, peelbark St. John's wort, Edison's St. John's wort, gallberry, coastalplain staggerbush, fetterbush, sweetbay, wax myrtle, dwarf live oak, live oak, and saw palmetto. Herbaceous species include blue maidencane, bluestem, broomsedge bluestem, bottlebrush threeawn, wiregrass, toothed midsorus fern, spadeleaf, and netted chain fern.

Wet flatwoods make up about a third of the area at PBWEA. This community, in the central areas of the property, is typically high quality with a mature, scattered pine canopy, low shrubs and a groundcover dominated by cutthroat grass. Eastern and western areas identified as wet flatwoods had disturbances of exotics, fire exclusion and woody encroachment, typically by species of bays. Often the bay species could be found in both the canopy and shrub layers. These species are relatively fire intolerant and have established due to lack of prescribed fire. All areas with an herbaceous layer dominated by cutthroat grass were classified as wet flatwoods. In places, this species has persisted despite very shaded conditions. The wet flatwoods also harbor a large population of the rare Edison's St. John's wort. This species can often be used to identify historic wet flatwoods in areas of semi-improved pasture because it has a tendency to persist despite heavy disturbance. Old world climbing fern and one occurrence of Asian sword fern were documented in the wet flatwoods at Platt Branch Mitigation Park. Historically, wet flatwoods at PBWEA would have been much more open, dominated by cutthroat grass, with sparse shrubs and widely scattered slash pines.

2.2.2 FNAI Altered Community Descriptions

Developed (~ 4 acres)

Developed areas can include check stations, off-road vehicle use areas, parking lots, buildings, maintained lawns, botanical or ornamental gardens, campgrounds, and recreational, industrial, and residential areas.

At PBWEA, developed acreage accounts for less than 4 acres of the area. These areas include the developed sites (buildings, parking lots and access driveways) and artificial impoundments/ponds. Historically, these areas were depression marshes, mesic flatwoods, and scrubby flatwoods.

Pasture –Improved (~ 179.62 acres)

Improved pastures are typically grass-dominated features with evidence of current or recent pasture activity such as mowing, chopping or burning. Extant taxonomic elements include longleaf pine in the canopy and sand live oak and live oak in the tall shrub layer. Species present as short shrubs include wax myrtle, sand live oak and saw palmetto. Primary species in the herbaceous layer are bluestem, broomsedge bluestem, flatsedge, slender flattop goldenrod, pricklypear, bahiagrass, blackroot, and smutgrass. This community is dominated by weedy, herbaceous pasture species. Native vegetation although present, does not occupy a large enough percent cover to qualify this as natural community.

At PBWEA, improved pasture occupies what were historically mesic flatwoods, scrubby flatwoods, and scrub at PBWEA.

Pasture – Semi-improved (~ 144.79 acres)

Semi-improved pasture areas include a mix of pasture grasses and native groundcover species. The sparse and infrequent canopy layer includes sand pine, South Florida slash pine, longleaf pine, and sand live oak. The latter was also the primary subcanopy species. Tall shrubs include groundsel tree, wax myrtle, sand pine, and sand live oak. Short shrubs include netted pawpaw, groundsel tree, Edison's St. John's wort, gopher apple, wax myrtle, sand live oak, scrub oak, myrtle oak, live oak, winged sumac, saw palmetto, tough bully, and hog plum. Herbaceous plants include bluestem, broomsedge bluestem, Ware's hairsedge, purple thistle, pinebarren flatsedge, flatsedge, witch grass, centipedegrass, dogfennel, slender flattop goldenrod, Florida scrub frostweed, cutthroat grass, bahiagrass, giant orchid, foxtail grass, and smutgrass. Semi-improved pasture occupies what was historically mesic flatwoods, scrubby flatwoods, and wet flatwoods at PBWEA.

2.2.1 Forest Resources

Predominate forest resources existing on PBWEA are its high-quality mesic, scrubby and wet flatwoods communities and to a lesser its mesic hammock, scrub and floodplain forest communities. The FWC plans to request Florida Forest Service (FFS) to complete a timber assessment during this planning period. Once the timber assessment is complete it will be incorporated into the Appendix of this Management Plan.

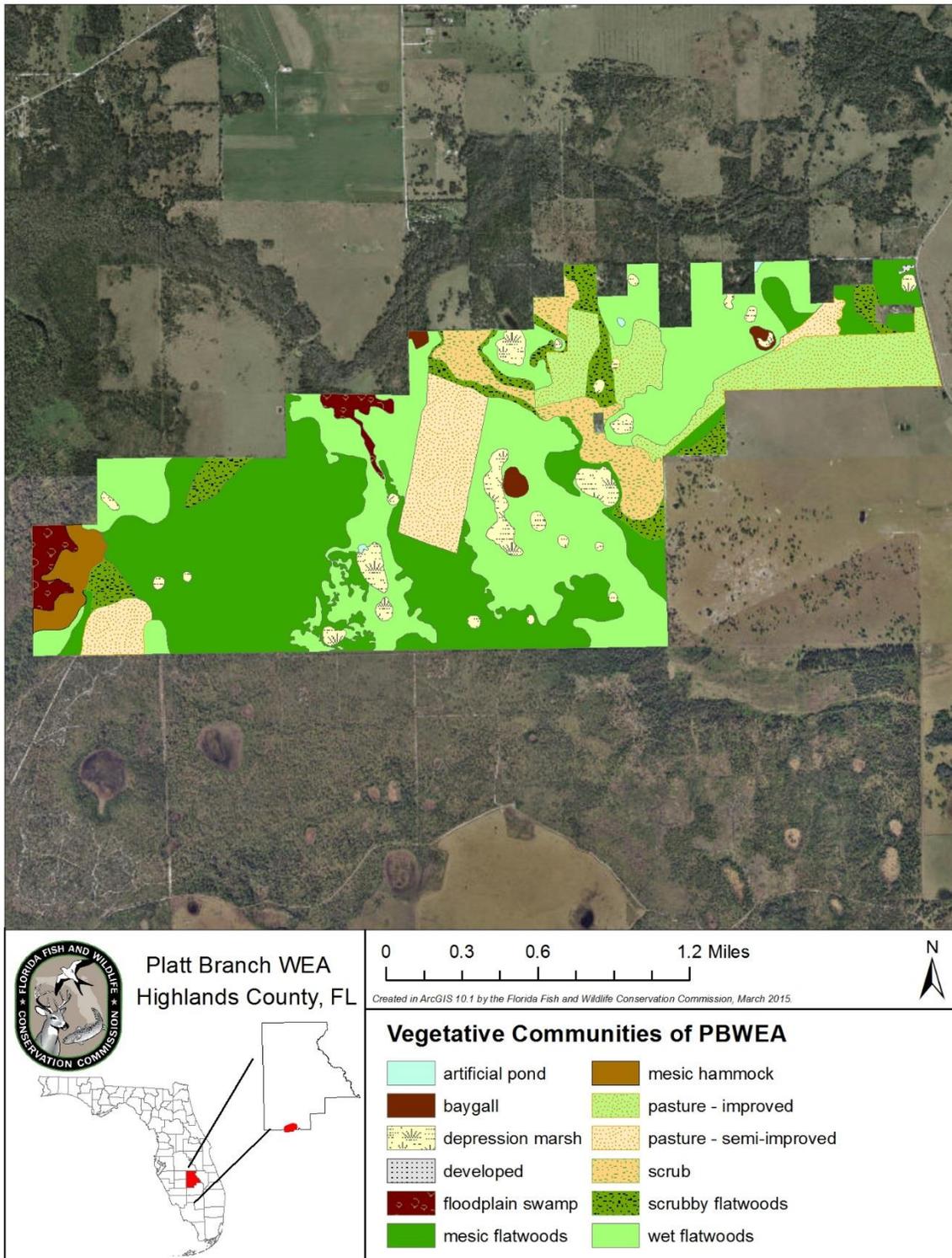


Figure 7. PBWEA FNAI Natural and Anthropogenic Communities

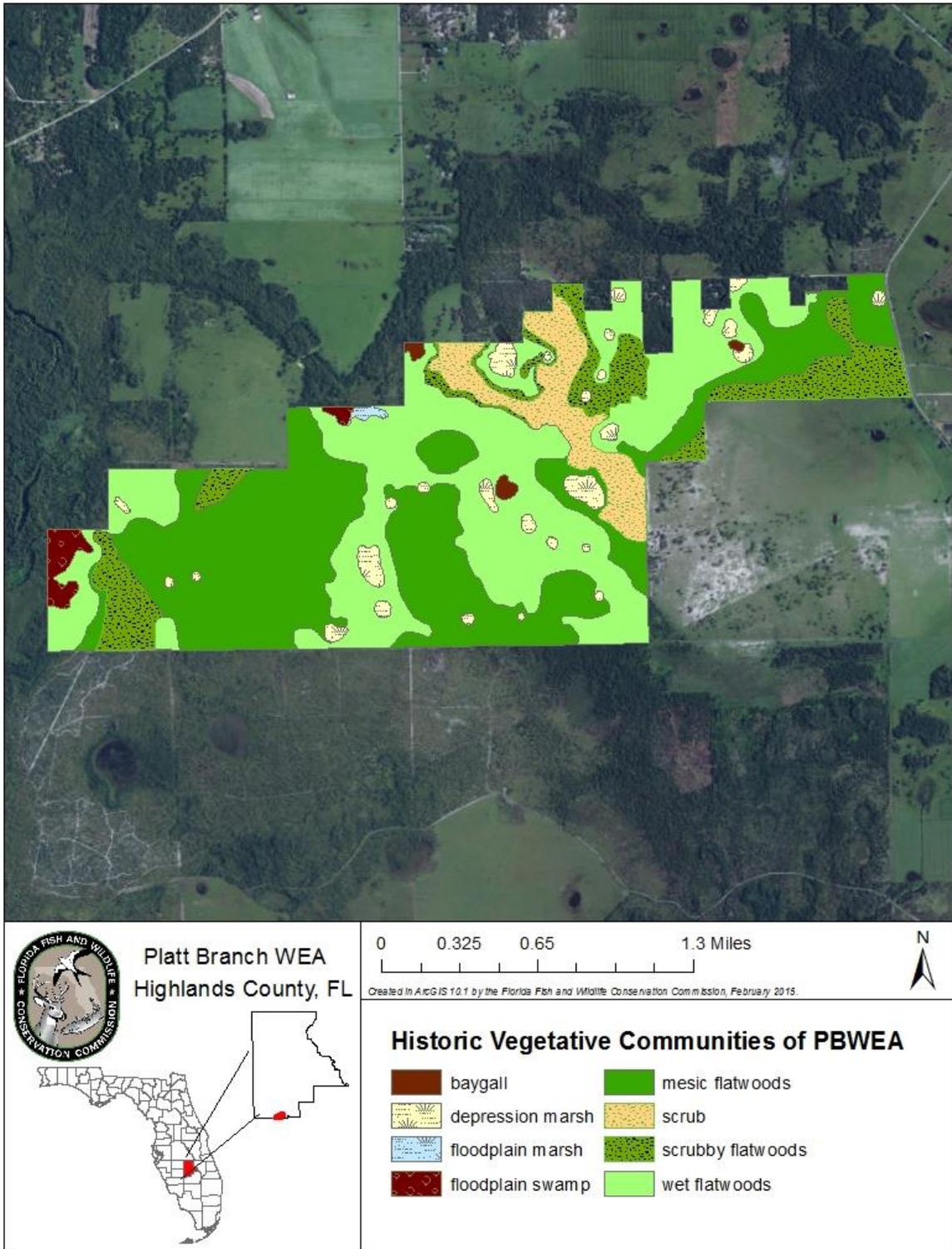


Figure 8. PBWEA FNAI Historic Natural Communities

2.3 Fish and Wildlife Resources

As described above, the PBWEA has a variety of natural communities and habitat types that support a wide array of imperiled, rare, and more common wildlife species. Active wildlife management practices and the high quality of habitat make the PBWEA an excellent place to view wildlife. The PBWEA’s mesic, wet, and scrubby flatwoods, marshes, swamps, and other communities provide critical habitat for resident and migratory wildlife.



Additionally, the FWC maintains an inventory of fauna occurring on or near the PBWEA listed in the following tables, including amphibians and reptiles (Table 8), birds (Table 9), butterflies (Table 10) and mammals (Table 11). Table 12 contains an inventory of the exotic wildlife species that have been documented on or near the PBWEA.

Table 8. Amphibian and Reptile Species Known or Expected to Occur on PBWEA

Common Name	Scientific Name
American alligator	<i>Alligator mississippiensis</i>
Black racer	<i>Coluber constrictor</i>
Box turtle	<i>Terrapene ornata</i>
Brown anole	<i>Anolis sagrei</i>
Common snapping turtle	<i>Chelydra serpentina</i>
Dwarf siren	<i>Pseudobranchius striatus</i>
Eastern coachwhip	<i>Masticophis flagellum</i>
Eastern coral snake	<i>Micrurus fulvius</i>
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>
Eastern garter snake	<i>Thamnophis sirtalis</i>
Eastern glass lizard	<i>Ophisaurus ventralis</i>
Eastern hognose snake	<i>Heterodon platirhinos</i>
Eastern indigo snake	<i>Drymarchon couperi</i>
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>
Florida scrub lizard	<i>Sceloporus woodi</i>
Gopher frog	<i>Lithobates capito</i>
Gopher tortoise	<i>Gopherus polyphemus</i>
Green anole	<i>Anolis carolinensis</i>
Green tree frog	<i>Hyla cinerea</i>
Oak toad	<i>Anaxyrus quercicus</i>
Rough green snake	<i>Opheodrys aestivus</i>
Six-lined racerunner	<i>Aspidoscelis sexlineata</i>
Softshell turtle	<i>Apalone ferox</i>

Southern five-lined skink	<i>Plestiodon inexpectatus</i>
Southern leopard frog	<i>Lithobates sphenoccephalus</i>
Southern toad	<i>Anaxyrus terrestris</i>
Ringneck snake	<i>Diadophis punctatus</i>
Yellow rat snake	<i>Pantherophis alleghaniensis</i>

Table 9. Native Bird Species Known or Expected to Occur on PBWEA

Common Name	Scientific Name
American crow	<i>Corvus brachyrhynchos</i>
American kestrel	<i>Falco sparverius</i>
American robin	<i>Turdus migratorius</i>
Bachman's sparrow	<i>Peucaea aestivalis</i>
Barn owl	<i>Tyto alba</i>
Barred owl	<i>Strix varia</i>
Belted kingfisher	<i>Megaceryle alcyon</i>
Black vulture	<i>Coragyps atratus</i>
Blue jay	<i>Cyanocitta cristata</i>
Blue-gray gnatcatcher	<i>Poliopitla caerulea</i>
Blue-winged teal	<i>Anas discors</i>
Boat-tailed grackle	<i>Quiscalus major</i>
Brown-headed nuthatch	<i>Sitta pusilla</i>
Brown thrasher	<i>Toxostoma rufum</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Cattle egret	<i>Bubulcus ibis</i>
Chuck-will's-widow	<i>Antrostomus carolinensis</i>
Common ground-dove	<i>Columbina passerina</i>
Common moorhen	<i>Gallinula chloropus</i>
Common nighthawk	<i>Chordeiles minor</i>
Common snipe	<i>Capella gallinago</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Crested caracara	<i>Caracara cheriway</i>
Downy woodpecker	<i>Picoides pubescens</i>
Eastern bluebird	<i>Sialia sialis</i>
Eastern meadowlark	<i>Sturnella magna</i>
Eastern screech owl	<i>Megascops asio</i>
European starling	<i>Sturnus vulgaris</i>
Fish crow	<i>Corvus ossifragus</i>
Florida duck	<i>Anas fulvigula</i>
Florida scrub-jay	<i>Aphelocoma coerulescens</i>

Gray catbird	<i>Dumetella carolinensis</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>
Great egret	<i>Ardea alba</i>
Great horned owl	<i>Bubo virginianus</i>
Glossy ibis	<i>Plegadis falcinellus</i>
Green-backed heron	<i>Butorides striata</i>
House sparrow	<i>Passer domesticus</i>
Killdeer	<i>Charadrius vociferus</i>
Limpkin	<i>Aramus guarauna</i>
Little blue heron	<i>Egretta caerulea</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Mourning dove	<i>Zenaida macroura</i>
Northern bobwhite quail	<i>Colinus virginianus</i>
Northern cardinal	<i>Cardinalis</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier	<i>Circus cyaneus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Osceola wild turkey (wild turkey)	<i>Meleagris gallopavo</i>
Palm warbler	<i>Setophaga palmarum</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Prothonotary warbler	<i>Protonotaria citrea</i>
Purple gallinule	<i>Porphyrio martinica</i>
Purple martin	<i>Progne subis</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Red-cockaded woodpecker	<i>Picoides borealis</i>
Reddish egret	<i>Egretta rufescens</i>
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
Sandhill crane	<i>Grus canadensis</i>
Short-tailed hawk	<i>Buteo brachyurus</i>
Snowy egret	<i>Egretta thula</i>
Southeastern American kestrel	<i>Falco sparverius paulus</i>
Southern bald eagle	<i>Haliaeetus leucocephalus</i>
Swallow-tailed kite	<i>Elanoides forficatus</i>
Tricolored heron	<i>Egretta tricolor</i>
Turkey vulture	<i>Cathartes aura</i>
Tufted titmouse	<i>Baeolophus bicolor</i>
Tree swallow	<i>Tachycineta bicolor</i>

White ibis	<i>Eudocimus albus</i>
Wood duck	<i>Aix sponsa</i>
Wood stork	<i>Mycteria americana</i>

Table 10. Butterflies Known or Expected to Occur on PBWEA

Common Name	Scientific Name
American Swallowtail	<i>Papilio polyxenes asterius</i>
Barred yellow	<i>Eurema daira daira</i>
Brazilian skipper	<i>Calpodus ethlius</i>
Carolina satyr	<i>Hermeuptychia sosbuis</i>
Cloudless Sulfer	<i>Phoebis sennae eubule</i>
Common buckeye	<i>Junonia coenia</i>
Dorantes skipper	<i>Urbanus dorantes dorantes</i>
Eastern tiger swallowtail	<i>Papilio glaucus maynardi</i>
Eufala skipper	<i>Lerodea eufala eufala</i>
Fiery skipper	<i>Hylephila phyleus phyleus</i>
Gulf fritillary	<i>Agraulis vanillae nigrior</i>
Io Moth	<i>Automeris io</i>
Long tailed skipper	<i>Urbanus proteus proteus</i>
Monk skipper	<i>Asbolis capucinus</i>
Neamathla skipper	<i>Nastra neamathla</i>
Ocola skipper	<i>Panoquina ocola ocola</i>
Pearl Crescent	<i>Phycoides tharos tharos</i>
Queen	<i>Danaus gilippus berenice</i>
Rattlebox moth	<i>Utethesia bella</i>
Red-banded hairstreak	<i>Calycopis cecrops</i>
Sachem	<i>Atalopedes campestris huron</i>
Soldier	<i>Danaus eresimus ssp.</i>
Viceroy	<i>Limenitis archippus floridensis</i>
Whirlabout	<i>Polites vibex vibex</i>
White peacock	<i>Anartia jatrophae guantanamo</i>
Zebra longwings	<i>Heliconius charitonius tuckeri</i>
Zebra swallowtail	<i>Eurytides marellus floridensis</i>

Table 11. Mammal Species Known or Expected to Occur on PBWEA

Common Name	Scientific Name
Bobcat	<i>Lynx rufus</i>
Cotton mice	<i>Peromyscus gossypinus</i>
Cotton rat	<i>Sigmodon hispidus</i>

Eastern Cottontail	<i>Sylvilagus floridanus</i>
Coyote	<i>Canis latrans</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Florida black bear	<i>Ursus americanus floridanus</i>
Florida mouse	<i>Peromyscus floridanus</i>
Florida panther	<i>Puma [=Felis] concolor coryi</i>
Gray fox	<i>Urocyon cinereoargenteus</i>
Marsh rabbits	<i>Sylvilagus palustris</i>
Opossums	<i>Didelphis virginiana</i>
River otter	<i>Lontra canadensis</i>
Raccoon	<i>Procyon lotor</i>
Sherman's fox squirrel	<i>Sciurus niger shermani</i>
Southern flying squirrel	<i>Glaucomys volans</i>
White tailed deer	<i>Odocoileus virginianus</i>

Table 12. Exotic Wildlife Species Known or Expected to Occur on PBWEA

Common Name	Scientific Name
Burmese pythons	<i>Python molurus</i>
Feral hogs	<i>Sus scrofa</i>
Nile monitor	<i>Varanus niloticus</i>
Nine-banded armadillo	<i>Dasypus novemcinctus</i>

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 the PBWEA has a very high mean wildlife value of 8.0. The FWC’s IWHRS map for the PBWEA is shown in Figures 9.

2.3.2 Imperiled Species

For the purposes of this Management Plan, the term “imperiled species” refers to plant and animal species that are designated as endangered, threatened, or a species of special concern by 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.” Table 13 lists the focal and imperiled wildlife species that have been documented as occurring on or in the vicinity of the PBWEA. Figure 10 displays FWC wildlife observations and FNAI element occurrences that have been documented within the PBWEA. Fifteen imperiled animal species have been documented at the PBWEA.

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 Endangered or Threatened, State-designated Threatened or 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 Endangered or 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 species descriptions and associated management prescriptions are available on the FWC website: <http://www.myfwc.com/wildlifehabitats/profiles/>.

Table 13. Imperiled Wildlife Species occurring on or near the PBWEA

Common Name	Scientific Name	Status
Birds		
Audubon's crested caracara	<i>Polyborus plancus audubonii</i>	FT
Florida sandhill crane	<i>Grus canadensis</i>	ST
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	FT
Little blue heron	<i>Egretta caerulea</i>	ST
Red-cockaded woodpecker	<i>Picoides borealis</i>	FE
Reddish egret	<i>Egretta rufescens</i>	ST
Southeastern American kestrel	<i>Falco sparverius paulus</i>	ST
Tricolored heron	<i>Egretta tricolor</i>	ST

Wood stork	<i>Mycteria americana</i>	FT
Mammals		
Florida panther	<i>Puma [=Felis] concolor coryi</i>	FE
Sherman's fox squirrel	<i>Sciurus niger shermani</i>	SSC
Reptiles		
American alligator	<i>Alligator mississippiensis</i>	FT (S/A)
Eastern indigo snake	<i>Drymarchon couperi</i>	FT
Gopher tortoise	<i>Gopherus polyphemus</i>	ST
Ringneck snake	<i>Diadophis punctatus</i>	ST

Abbreviation	Status
FE	Federal Endangered
FT	Federal Threatened
F(XN)	Federally Listed as an experimental population in Florida
FT(S/A)	Federally Threatened due to similarity of appearance
SSC	State Species of Special Concern
ST	State Threatened
NL	Not Listed

2.3.1 FWC Wildlife Observations and FNAI Element Occurrences

A diversity of wildlife species is found on the PBWEA. The FNAI element occurrence records include eight imperiled species and a notable migratory bird concentration area. As defined by the FNAI, an “element” is any exemplary or rare component of the natural environment, such as a species, natural community, bird colony, spring, sinkhole, cave, or other ecological feature. An element occurrence is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. The FNAI assigns a rank to each “element” occurrence. This ranking system was developed by The Nature Conservancy and the Natural Heritage Program Network based on the element’s global rank (element’s worldwide status) or state rank (status of element in Florida). The FNAI ranking system and definitions are located on the following website: 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 13.6 contains a letter from the FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

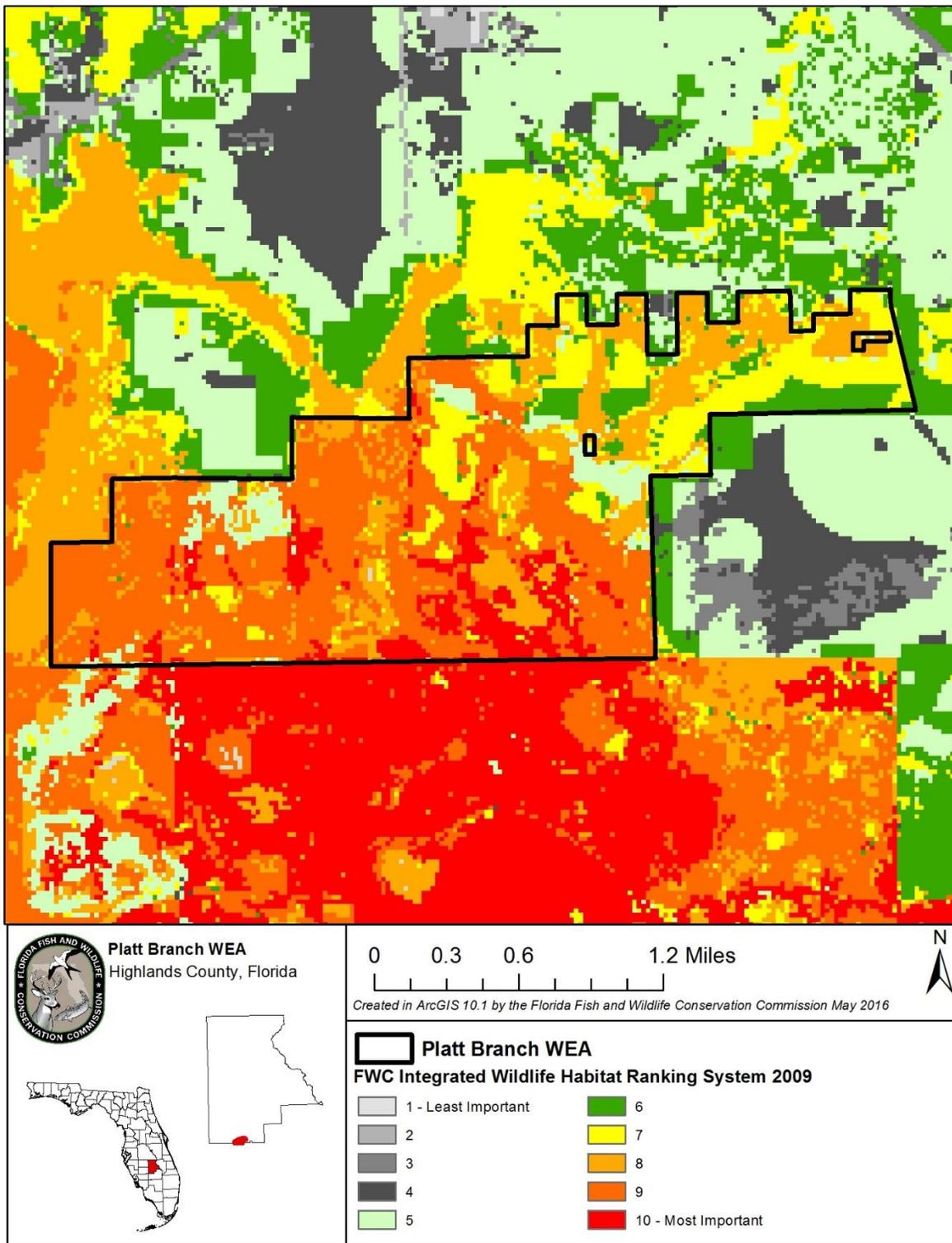


Figure 9. PBWEA - FWC Integrated Wildlife Habitat Ranking System 2009

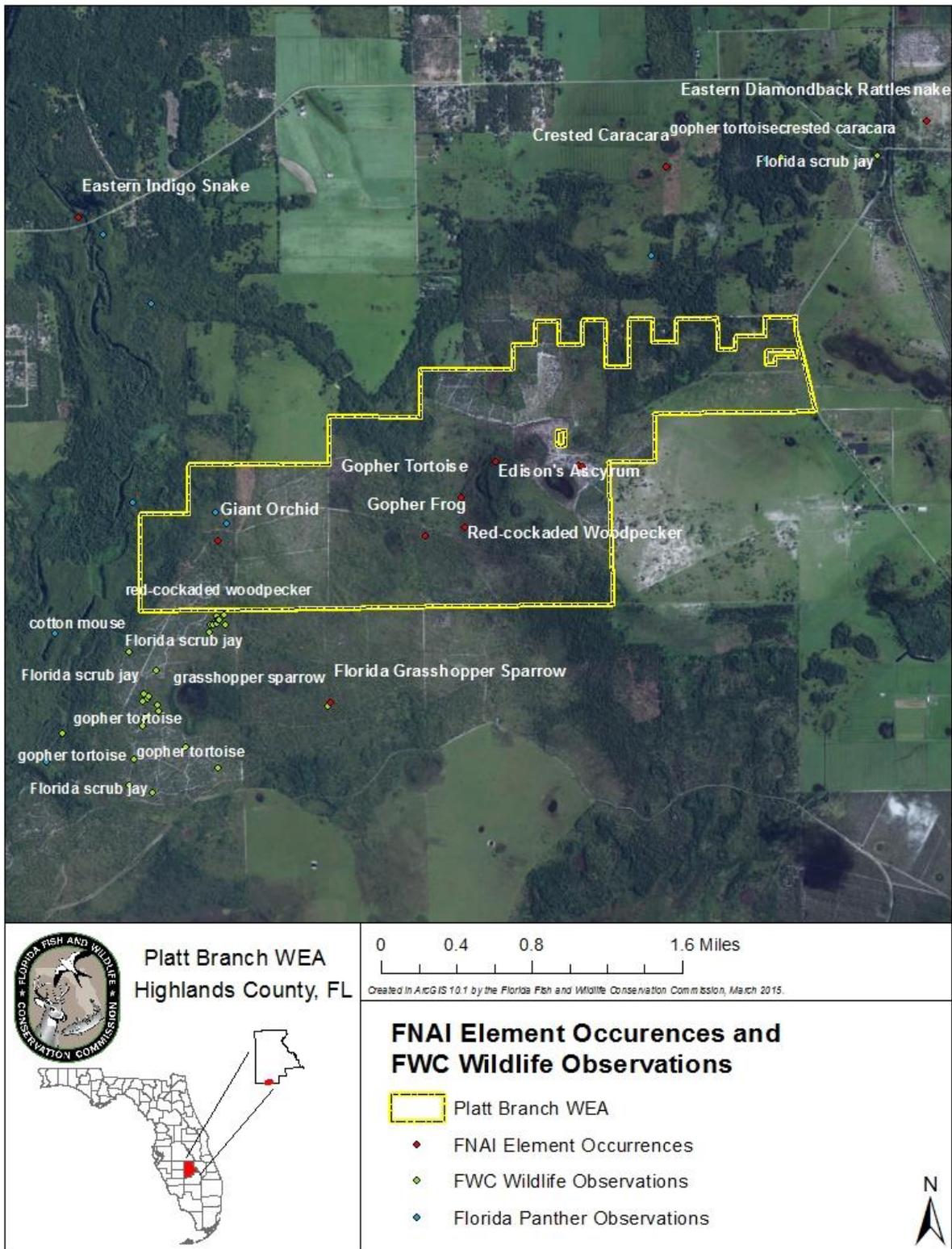


Figure 10. FWC Wildlife Observations and FNAI Element Occurrences

2.4 Native Landscapes

The predominant native landscapes on the PBWEA include the digressional wetlands that lead into Platt Branch and the Fisheating Creek, mesic flatwoods, wet flatwoods, and mesic hammock. Other significant native landscapes present on the area include baygall, depression marsh, scrubby flatwoods, and scrub. Complete descriptions of the natural communities found the PBWEA can be found in Section 2.2 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 PBWEA contains no natural bodies of freshwater which would be considered waters of the State. The PBWEA does not contain a first magnitude spring, nor any type of lake, nor is it designated as an aquatic preserve and is not under consideration for such designation. All waters within PBWEA are considered Class III water by DEP, and there are no portions of PBWEA that are designated as Outstanding Florida Waters (OFW).

PBWEA connects to both the Lake Wales Ridge and Fisheating Creek, and farther south to Lake Okeechobee, through its streams and wetlands. In addition, it provides important watershed and water quality protection for streams and wetlands that drain into Fisheating Creek and Lake Okeechobee. The southeastern portion of PBWEA drains southerly through a marsh towards Fisheating Creek. The central portion of the park drains northward into Platt Branch. The western portion of the property drains west directly into Fisheating Creek. Much of the park is inundated with water during the wetter season, yet can be very dry during droughty conditions. There are several depressional wetlands within the area, along with hardwood and cypress swamp floodplains of Platt Branch and Fisheating Creek.

2.6 Beaches and Dunes

There are no beach or dune resources on the PBWEA.

2.7 Mineral Resources

There are no known commercial mineral deposits on the PBWEA.

2.8 Archaeological and Historical Resources

The DHR Master Site File indicates that there are no recorded archaeological sites within the boundaries of the PBWEA. However, the FWC will coordinate with DHR to assess the need for conducting a cultural resource survey.

As a part of this management plan, the FWC will ensure that management staff receive Archaeological Resource Management (ARM) training. Furthermore, the FWC will ensure all known sites are recorded in the DHR Master Site File.

2.9 Scenic Resources

The PBWEA offers remarkably scenic views of floodplains, marshes, hardwood hammocks, and bald cypress swamps that surround it. As a result, the area has long been valued for its scenic wilderness-like quality unaffected by development and other human alterations of the landscape. Wildlife is abundant year-round throughout the area. The scenery of the PBWEA can be enjoyed by hiking on the area's trails. Some of the scenic sites on the PBWEA have been developed with interpretive signage and wildlife viewing platforms.

3 Uses of the Property

3.1 Previous Use and Development

The area encompassing the PBWEA and the adjacent FCWMA has a very rich history. The name Fisheating Creek itself is derived from the Creek Thlothlopopka-hatchee meaning "the creek where fish are eaten."

The first known settlement occurred along the banks of Fisheating Creek between 1000 and 500 BC. The early inhabitants, known as the Belle Glade people, began building mounds and other earthworks, and subsisted by netting fish, harvesting turtles, snakes and alligators. According to the University of Florida archeologist Jerald Milanich, who worked on the area as a student in the 1960s, perforations found on turtle shells indicate turtles were tethered to be eaten as needed. Fisheating Creek was more than a source of food and water; it was also a canoe highway leading both to Lake Okeechobee and its resources to the east and other settlements to the west.

Prior to European settlement, the landscape of Florida, including this area of the Florida panhandle, was settled and used by a variety of Native American peoples whose culture relied mainly on hunting, fishing, and subsistence agriculture. Though some land alteration occurred, only minor alteration of the landscape is thought to have taken place until the advent of European settlement beginning with the Spanish occupation of Florida in the sixteenth century. At the conclusion of the Third Seminole War in 1858, many Native Americans had been removed from Florida. In 1881, Clay MacCauley at the direction of the federal government found 37 extended families living in 22 campsites in five areas of South Florida, one of which was Fisheating Creek immediately south of PBWEA.

Along with more advanced agricultural practices, the Spanish and other settlers brought livestock, primarily cattle and hogs, as well as horses to Florida. This began an era of broad use of the landscape for agriculture. Rangeland cattle grazing and other agricultural

practices began to be utilized in a more systematic way and occurred throughout much of the central Florida peninsula through most of the European settlement era from the 16th through the 20th centuries. Use of these agricultural practices began an era of increased alteration of the natural landscape. However, it wasn't until the 19th and 20th centuries that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development. By 1930, cultivation of sugar cane, cattle ranching, and establishment of a refinery at Moore Haven forced the remaining Seminoles to move from Fisheating Creek. Some Seminoles went to work for cattle baron Jacob Summerlin.

The PBWEA, while generally well-preserved, has been subjected to human use over the years including cattle grazing, hunting, farming, timbering, and turpentine extraction. However, south central Florida remained virtually unsettled until the early 1800's. Prior to state acquisition, PBWEA was primarily used for cattle ranching. Before the 1947 fence law was enacted in Florida, PBWEA was encompassed within a vast landscape of central and South Florida lands that were primarily grazed with "free range" cattle, and the area remained in management for cattle grazing until 1993 when cattle were removed from the area.

3.2 Current Use of the Property

The PBWEA, is managed by FWC as a Wildlife and Environmental Area in conformance with the provisions of the Memorandum of Understanding between FDOT, FWC, and FWC to protect and provide for water conservation; maintain ecological diversity; conserve habitat for imperiled and other wildlife species; and to provide a diversity of public outdoor recreational opportunities that are fish and wildlife-oriented, and that are compatible with the PBWEA MOU and the Board of Trustees lease provisions that do not adversely impact the long-term well-being of fish and wildlife habitats and their associated wildlife populations.

The PBWEA is being managed as a multiple-use conservation land. Multiple-use management strategies incorporate uses related to wildlife, fisheries, and forest management and 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 PBWEA.

3.2.1 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is the primary source of economic benefits from the PBWEA, and contributes to the overall economy for the southwestern region of Florida. If the current maximum carrying capacity visitation level of 98 visitors per day were achieved, a total of 35,770 visitors per year could be expected. If the area's visitation levels were at carrying capacity,

FWC economic analysis estimates indicate that the PBWEA could potentially generate an estimated economic impact of \$4,086,723 for the State and the southwest region of Florida. This estimated annual economic impact would aid in the creation of an estimated 71 jobs. However, it should be noted that the current visitation rates for the area are estimated to be far below the area's established carrying capacity.

The above figures are based on expenditure data from the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation (USFWS) and 2006 IMPLAN economic models assembled by Southwick Associates and the USFWS. The results were updated to 2010 based on hunting and fishing license trends and inflation. The results were combined and weighted based on the numbers of hunters, anglers and wildlife viewers statewide. The results assume participants' expenditures and the results impacts are consistent throughout the state. Users applying these results to local situations should be aware that differences might exist between these statewide averages and the site in question, and make adjustments if needed.

While the Florida legislature appropriates funds for land management, further revenue generating potential of the PBWEA will depend upon future uses described in this Management Plan. Additional revenue from environmental lands such as the PBWEA may include sales of various permits and recreational user fees and ecotourism activities, if such projects could be feasibly developed. Additionally, the long-term values of ecosystem services to local and regional land and water resources, and to human health, through the protection of air and water quality are expected to be significant.

3.3 Single- or Multiple-use Management

The PBWEA will be managed under a low intensity, multiple-use concept that includes providing opportunities for fish and wildlife-based public outdoor recreation. The recreational activities offered on the PBWEA include hiking and wildlife viewing.

Any natural and historical resources of PBWEA 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 PBWEA. 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 13.7). Uses classified as "Conditional" indicate that the use may be acceptable but will be allowed only if approved through a process other than the management plan development and approval process (e.g., special-use permitting, managed-area regulation and rule development). Uses classified as "Rejected" are not

considered to be in accordance with the original purpose of acquisition or one or more of the various forms of guidance available for planning and management:

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

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 PBWEA (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 where FWC is the lead manager, FWC evaluates and identifies recommended areas for a potential surplus designation by DSL, ARC, and the Board of Trustees. This evaluation consists of GIS modeling and analysis, aerial photography interpretation, analysis of fish and wildlife resources, 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 PBWEA 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 quality fish and wildlife resource based public outdoor recreational opportunities. Therefore, no portion of the PBWEA is recommended for potential surplus review.

4 Accomplished Objectives from the PBWEA Management Plan 1998 or Interim Management Activities

This section is dedicated to reporting the extent to which the Objectives described in the 1998 Management Plan 1998 – 2008 (pages 13 - 40) were successfully completed. Accomplishments for PBWEA 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 1998 – 2008 PBWEA Management Plan describe the planned activities for PBWEA 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 1998 Platt Branch WEA
Habitat Management Plan**

<u>Goals and Objectives</u>	<u>Percent Accomplished</u>
Goal 1: To maintain a gopher tortoise density of 0.8 individuals per acre or greater on all areas of suitable tortoise habitat.	
<p><u>Objective 1:</u> The FWC continues to utilize prescribed burning to promote and maintain tortoise habitat quality. <i>Comment: The FWC has and continues to regularly conduct prescribed burning on the gopher tortoise habitat and other fire-adapted habitats on the area, according to fire return intervals established for each of the area's natural communities.</i></p>	100%
<p><u>Objective 2:</u> Promote natural restoration of disturbed xeric pastures as a mechanism to increase understory plant diversity. <i>Comment: Natural succession and periodic burning have increased the natural vegetation diversity in the understory of the xeric pastures.</i></p>	100%
<p><u>Objective 3:</u> Conduct regular population surveys in order to detect major population changes, or a need to alter management practices. <i>Comment: Regular wildlife population surveys have been conducted on the area during this planning period. Additionally, the FWC continues to conduct wildlife surveys as scheduled in the WCPR Strategy developed for PBWEA.</i></p>	100%
<p><u>Objective 4:</u> Coordinate with other wildlife professionals and agencies on factors that could affect the tortoise population at PBMP (PBWEA), such as disease transmission, illegal relocation, or other negative influences. <i>Comment: The FWC conducted a URTD study on gopher tortoises at PBWEA, including marking and recapturing individual tortoises. The FWC has also displayed signage informing the public that the relocation of gopher tortoises is not permitted.</i></p>	100%
Goal 2: To support scrub jay family groups on 75% or more of all areas of suitable jay habitat.	
<p><u>Objective 1:</u> Utilize prescribed burning to promote desirable habitat characteristics and optimum values for shrub height, canopy coverage, and bare ground. <i>Comment: The FWC continues to conduct prescribed burning in scrub jay habitat, within the established fire return intervals.</i></p>	100%
<p><u>Objective 2:</u> Minimize negative impacts of fire on occupied scrub jay habitat. <i>Comment: The FWC has minimized wildfire risk to scrub jay habitat through the implementation of prescribed burning and associated firebreak maintenance.</i></p>	100%

<p><u>Objective 3:</u> Utilize fire and mechanical treatments to restore degraded habitats that could be rendered suitable for use by scrub jays. <i>Comment: The FWC has utilized mechanical treatments to expand scrub jay habitat, which includes the removal of oaks and sand pines to continue to enhance scrub jay habitat.</i></p>	100%
<p><u>Objective 4:</u> Restore xeric pastures to increase the amount of suitable jay habitat. <i>Comment: Natural succession and periodic burning has been accomplished on all pastures. Oaks have been allowed to recruit into and spread in the pastures.</i></p>	100%
<p><u>Objective 5:</u> Conduct regular population surveys in order to detect major population changes, or a need to alter management practices. <i>Comment: Annual scrub jay surveys are conducted to track family groups and recruitment.</i></p>	100%
<p>Goal 3: To support red-cockaded woodpecker clans on 75% or more of suitable RCW habitat.</p>	
<p><u>Objective 1:</u> Utilize prescribed burning to promote desirable understory and midstory conditions. <i>Comment: RCW habitat has been and continues to be burned regularly within the appropriate return intervals.</i></p>	100%
<p><u>Objective 2:</u> Initiate a cavity insert program to increase RCW utilization on foraging sites that are under-utilized due to lack of natural cavity trees. <i>Comment: RCW Cavities have been installed in appropriate areas.</i></p>	100%
<p><u>Objective 3:</u> Initiate pine restoration on mesic pasture sites to promote foraging and nesting conditions for RCW's. <i>Comment: Natural pine regeneration is encouraged through the specific timing of prescribed burning. The FWC has conducted additional planting in appropriate areas and will continue with planting in the future as needed.</i></p>	100%
<p><u>Objective 4:</u> Coordinate with nearby property landowners and provide technical assistance on measures to conserve RCW habitat. <i>Comment: The FWC has continued to work with Lykes Brothers Inc., since 2002 to monitor RCWs on their adjacent property.</i></p>	100%
<p><u>Objective 5:</u> Minimize fire impacts on RCW cavity trees. <i>Comment: Fuels under RCWs trees are routinely reduced and those areas are regularly burned.</i></p>	100%

<p>Objective 6: Maintain recommended age class, stocking rates, and basal area characteristics in management units that contain suitable or potentially suitable RCW habitat.</p> <p><i>Comment: RCW habitat is a focus of management, within established and potential RCW habitat areas. The FWC has been able to utilize and establish natural pine regeneration to support the survival of young, middle aged and older pine trees. The basal areas of these management units are continuing to increase toward the desired basal area.</i></p>	100%
<p>Objective 7: Conduct regular population surveys in order to detect major population changes, or a need to alter management practices.</p> <p><i>Comment: The FWC has completed the banding of RCWs and has annually monitored the RCW populations on the area since 2002.</i></p>	100%
<p>Goal 4: Provide management actions that may enhance habitats and populations of other listed wildlife where such actions are compatible with the management mission of PBMP (PBWEA).</p>	
<p>Objective 1: Take into consideration the value that the various plant communities at PBMP (PBWEA) provide to other listed wildlife, and maintain optimum habitat conditions where possible.</p> <p><i>Comment: Habitat features for various species are provided by maintaining both the early successional and climax stages of many communities, which benefits a variety of imperiled and other wildlife.</i></p>	100%
<p>Objective 2: Record areas of habitat overlap between featured species and other listed wildlife species, and identify compatible management opportunities.</p> <p><i>Comment: The FWC has developed a WCPR Strategy, OBVM Units and a prescribed burning plan that considers the needs of gopher tortoises, scrub jays and RCWs when they overlap.</i></p>	100%
<p>Goal 5: Protect and manage rare and unique plants and plant communities at PBMP (PBWEA).</p>	
<p>Objective 1: Inventory and monitor rare plants at PBMP (PBWEA).</p> <p><i>Comment: The FWC has completed, through the services of FNAI, survey and mapping of plant communities and rare plants on the area. In addition, habitat conditions within cutthroat seeps are regularly considered when planning management actions.</i></p>	100%
<p>Objective 2: Identify threats and management needs of rare plants.</p> <p><i>Comment: The FWC works with FNAI to establish resource management regimes for rare plant communities.</i></p>	100%
<p>Objective 3: Maintain the openness of the cutthroat seeps and stimulate flowering of the cutthroat grass through use of growing season fires.</p>	100%

<i>Comment: The FWC has continued to conduct prescribed burning on cutthroat seep communities within the established fire return intervals with an emphasis on conducting growing season burns.</i>	
<u>Objective 4:</u> Place priorities for oak scrub management on those units with the longest history of fire suppression. <i>Comment: The FWC has implemented prescribed burning on scrub communities and supplemented it with mechanical treatments.</i>	100%
Goal 6: Maintain the high quality of other natural communities represented at PBMP (PBWEA).	
<u>Objective 1:</u> Manage the flatwoods community for increased pine regeneration, survival of older trees, and an herbaceous understory. <i>Comment: The FWC has implemented prescribed burning within pine flatwoods, within the established fire return intervals, as conditions permit.</i>	100%
<u>Objective 2:</u> Utilize prescribed fire in a manner suitable to maintain the open aspect of fresh water marshes at PBMP (PBWEA). <i>Comment: Marsh habitats occurring within flatwoods are burned along with the surrounding burn units.</i>	100%
<u>Objective 3:</u> Areas of bay swamp, cypress floodplain, and oak hammock should be maintained for their benefit as wildlife habitat and importance to plant community diversity at PBMP (PBWEA). <i>Comment: Portions of the mature plant communities have been maintained in late successional stages. Exotic plant treatments have been and continue to be a focus within these areas to reduce the infestation of climbing fern.</i>	100%
Goal 7: Introduce management actions that will restore disturbed areas and enhance their habitat value for featured wildlife species.	
<u>Objective 1:</u> Utilize growing season prescribed fires to promote the establishment and survival of native grasses and shrubs within pastures. <i>Comment: All pastures have been and continue to be burned on a fire return interval that promotes native vegetation establishment.</i>	100%
<u>Objective 2:</u> Promote natural regeneration of pine trees within pastures by varying the timing and frequency of prescribed burns. <i>Comment: The FWC has implemented prescribed burning within the pastures to encourage the natural regeneration of pines which is occurring.</i>	100%
<u>Objective 3:</u> Use mechanical cutting, when necessary, to reduce undesirable densities of hardwoods such as wax myrtles within these communities. <i>Comment: Multiple mechanical treatments have been utilized to target the spread of wax myrtle.</i>	100%

Goal 8: Identify and control undesirable noxious and exotic plant species.	
<p><u>Objective 1:</u> Initiate control treatments on an as needed basis to prevent the spread of invasive exotic plants found at PBMP (PBWEA) including: cogon grass, Johnson grass, tropical soda apple, aquatic soda apple, Japanese climbing fern, and other species that are identified.</p> <p><i>Comment: Exotic plants have been and are regularly treated on the area to continue to control exotic species. The recent spread of Lygodium on the area has become a priority target for treatment and control.</i></p>	100%
<p><u>Objective 2:</u> Initiate treatments to control the undesirable spread of noxious native plant species including wax myrtles.</p> <p><i>Comment: Wax myrtle control has been targeted primarily through fire and mechanical treatments.</i></p>	100%
<p><u>Objective 3:</u> Utilize mechanical cutting to reduce coverage of noxious and exotic species where appropriate.</p> <p><i>Comment: Mechanical treatments for wax myrtles have been and continue to be done regularly.</i></p>	100%
<p><u>Objective 4:</u> Monitor exotic plant infestations.</p> <p><i>Comment: Exotic plant occurrences are regularly monitored and treated.</i></p>	100%
Goal 9: Control population of exotic animals occurring at PBMP (PBWEA) that area threats to listed species and their habitat.	
<p><u>Objective 1:</u> Initiate the trapping and removal of feral hogs from PBMP (PBWEA).</p> <p><i>Comment: Trapping has been utilized to control feral hogs, and will be utilized as appropriate in the future.</i></p>	100%
Goal 10: Provide opportunities for non-consumptive, recreational uses of PBMP (PBWEA).	
<p><u>Objective 1:</u> Publicize PBMP (PBWEA) through the printed and electronic mediums as a featured area suitable for environmental education, day use recreation, and wildlife viewing.</p> <p><i>Comment: The FWC has utilized the FWC website, and other media and interpretive information to promote environmental education, day use recreation, and wildlife viewing.</i></p>	100%
<p><u>Objective 2:</u> Develop a public hiking trail at PBMP (PBWEA) for day use, facilitating the needs of both the casual hiker and those who desire longer experiences.</p> <p><i>Comment: The FWC has established and maintained hiking trails on the area.</i></p>	100%

<p><u>Objective 3:</u> Utilize office facilities at PBMP (PBWEA) for: public use and interpretive opportunities. <i>Comment: The FWC has determined that this is inappropriate since the use of operational and associated office facilities are not specifically intended and utilized for the public or recreational purposes.</i></p>	100%
Goal 11: Provide a high quality wildlife viewing experience for users at PBMP (PBWEA).	
<p><u>Objective 1:</u> Enhance viewing opportunities through the use of planted wildlife openings and viewing stations. <i>Comment: The FWC has determined use of wildlife openings are not appropriate for this area, as there are substantial wildlife viewing opportunities throughout the area's natural habitats.</i></p>	100%
<p><u>Objective 2:</u> Erect observation platforms overlooking wetland marshes that are frequented by wildlife. <i>Comment: Two observation platforms were erected and have been maintained along the established trail.</i></p>	100%
Goal 12: Provide educational opportunities for visitors to PBMP (PBWEA).	
<p><u>Objective 1:</u> Utilize kiosks, pamphlets, and signs to highlight topics concerning listed species protection and the useful benefits of prescribed fire. <i>Comment: Two kiosks and interpretive signs have been developed and established on the area.</i></p>	100%
<p><u>Objective 2:</u> Develop interpretive signage to educate users on aspects of natural community biology and listed species information. <i>Comment: Two kiosks and interpretative signs have been developed and established on the area.</i></p>	100%
<p><u>Objective 3:</u> Highlight GFC's (FWC) management at PBMP (PBWEA) by providing signs featuring specific actions taken to enhance listed species habitat. <i>Comment: The FWC has utilized interpretative kiosks and information to highlight management actions on the area.</i></p>	100%
Goal 13: Develop broader constituency for GFC (FWC) Mitigation Park Program.	
<p><u>Objective 1:</u> Promote access to PBMP (PBWEA) through coordination with user groups, conservation organizations, and universities. <i>Comment: PBWEA is regularly accessed by groups such as Audubon, Archbold, and college field trips have been supported numerous times when requested.</i></p>	100%

<p><u>Objective 2:</u> Encourage research and study at PBMP (PBWEA). <i>Comment: Various research projects involving RCWs, tortoises, scrub jays, gopher frogs, indigo snakes, roller chopping, etc., have been conducted on the area by FWC and associated university research projects.</i></p>	100%
<p>Goal 14: Maintain all structures, equipment, and signage in good working order and repair.</p>	
<p><u>Objective 1:</u> Continue to utilize contractual services to aide maintenance, management and monitoring operations at PBMP (PBWEA). <i>Comment: Contractual services are routinely utilized by FWC to supplement the FWC staff for ongoing management actions.</i></p>	100%
<p><u>Objective 2:</u> Plan and construct a multi-purpose facility at PBMP (PBWEA) to support administrative and management operations. <i>Comment: An office/workshop and storage facility has been built on the area.</i></p>	100%
<p><u>Objective 3:</u> Identify potential acquisition projects that complement resource management and public use objectives. <i>Comment: The FWC acquired a 262 acre addition, the Johnson Tract, and will continued to recommend potential acquisition areas through establishment of an OCPB and CAS for the area.</i></p>	100%
<p>Goal 15: Utilize prescribed burning in a manner that is safe and cost effective.</p>	
<p><u>Objective 1:</u> Have the site manager serve as "burn boss" for prescribed fires at PBMP (PBWEA). <i>Comment: The FWC has utilized the area manager and as well other designated FWC staff as appropriate.</i></p>	100%
<p><u>Objective 2:</u> Utilize the Florida Division of Forestry (Florida Forest Service, FFS) to assist with personnel and equipment for prescribed fires at PBMP (PBWEA). <i>Comment: The FWC continues to work with FFS to advise and assist in implementing prescribed burning on the area.</i></p>	100%
<p><u>Objective 3:</u> Comply with Division of Forestry (FFS) standards for planning and conducting prescribed burns. <i>Comment: The FWC continues to work with FFS to advise and assist in conducting prescribed burning through standard practices.</i></p>	100%
<p><u>Objective 4:</u> Establish evaluation procedures for all burns at PBMP (PBWEA). <i>Comment: All prescribed burning actions are currently recorded into the FWC LMIS, to assist in the evaluation and ongoing monitoring of prescribed burning results on the area.</i></p>	100%

<p><u>Objective 5:</u> Provide training opportunities for GFC (FWC) management personnel. <i>Comment: Training opportunities are provided for any new personnel who assist with prescribed burning, vegetation monitoring, wildlife monitoring, and equipment use.</i></p>	100%
<p>Goal 16: Utilize prescribed burning to achieve desired wildlife habitat management objectives.</p>	
<p><u>Objective 1:</u> Vary the post-fire stages of the plant communities at PBMP (PBWEA) to minimize impacts of habitat recovery to featured species populations at the site. <i>Comment: The FWC has established OBVM management units and associated fire return intervals to maintain and enhance wildlife habitat.</i></p>	100%
<p><u>Objective 2:</u> Alter patterns of ignitions in subsequent burns to achieve habitat diversity. <i>Comment: The FWC utilizes both growing and dormant season burning as appropriate to maintain habitat and diversity.</i></p>	100%
<p><u>Objective 3:</u> Set specific featured species objectives for each burn. <i>Comment: The FWC implements prescribed burning in accordance with the OBVM and WCPR Strategy management objectives developed for the area.</i></p>	100%
<p>Goal 17: Restore and maintain the fire dependent natural plant communities at PBMP (PBWEA) with prescribe fire.</p>	
<p><u>Objective 1:</u> Vary the seasonality of prescribed burns with an emphasis during the growing season. <i>Comment: The FWC utilizes both growing and dormant season burning as appropriate to maintain habitat and diversity. Prescribed burns have varied seasonally, with approximately 50% in the growing season. Winter burning is been used to manage for fuel loads, wet conditions, and for additional variability.</i></p>	100%
<p><u>Objective 2:</u> Use prescribed fire to reduce coverage of noxious native plant species such as wax myrtles. <i>Comment: The FWC utilizes seasonality and ignition patterns in implementing prescribed burning, as conditions permit.</i></p>	100%
<p>Goal 18: Utilize prescribed burning activities to reduce threats from wildfire at PBMP (PBWEA)</p>	
<p><u>Objective 1:</u> Reduce accumulated fuels within the units. <i>Comment: The FWC continues to reduce fuel loads as established and recommended in the PBWEA OBVM management units.</i></p>	100%

<p><u>Objective 2:</u> Maintain a mosaic of recently burned units to minimize the spread of unplanned fires. <i>Comment: Burn mosaics are maintained to aid in wildlife introduction and reduce wildfire production.</i></p>	100%
Goal 19: Minimize negative impacts to habitat from fire management activities.	
<p><u>Objective 1:</u> Utilize areas of existing disturbed vegetation for fire lane establishment such as roads, pastures or former fire lanes. <i>Comment: Almost all firebreaks were established within formerly disturbed areas such as roadways or pasture edges.</i></p>	100%
<p><u>Objective 2:</u> Rehabilitate plowed fire lanes to reduce run off of water and erosion. <i>Comment: Many existing older fire plow scars were disked and changed to fire lanes. Some fire plow lines still exist and need to be rehabilitated.</i></p>	100%
Goal 20: Properly manage smoke when conducting burns at PBMP (PBWEA).	
<p><u>Objective 1:</u> Perform smoke screening for all burn prescriptions at PBMP (PBWEA) and identify smoke sensitive areas. <i>Comment: The FWC continually utilizes smoke screening as part of their established prescribed burning practices.</i></p>	100%
<p><u>Objective 2:</u> Burn under conditions that minimize negative impacts of smoke on sensitive areas by choosing proper wind direction, high dispersions, or burning smaller areas when conflicts are unavoidable. <i>Comment: The FWC continually utilizes smoke screening as part of their established prescribed burning practices.</i></p>	100%
<p><u>Objective 3:</u> Contact surrounding landowners when smoke will affect them. <i>Comment: The FWC routinely contacts neighbors when conducting prescribed burning and is implementing an automated email notification system to enhance communication with surrounding landowners.</i></p>	100%
Goal 21: Attempt to minimize the negative effects of wildfire at PBMP (PBWEA).	
<p><u>Objective 1:</u> Ensure local DOF (FFS) personnel are familiar with PBMP (PBWEA) and its purpose, and know how to access the site. <i>Comment: The FWC continues to coordinate and cooperate with local FFS staff on the management of the area.</i></p>	100%
<p><u>Objective 2:</u> Maintain a network of cleared firebreaks within PBMP (PBWEA) and along the property boundary to prevent off-site fire spread. <i>Comment: The FWC has established fire breaks throughout the area as needed and they continue to be effective.</i></p>	100%

<p><u>Objective 3:</u> Maintain drivable roads to access all areas of the park. <i>Comment: Roads are maintained and improved as necessary.</i></p>	100%
<p><u>Objective 4:</u> Provide a mosaic of burned areas within the park as fuel breaks. <i>Comment: Burn mosaics are maintained to aid in wildlife introduction and reduce wildfire production.</i></p>	100%
<p><u>Objective 5:</u> Reduce fuels around active RCW trees by ring burning, and visibly mark RCW cavity tree so they are distinguishable during a suppression event. <i>Comment: All RCW cavity trees are marked. Ring burning prior to the burn is no longer practiced, but ignition beneath trees is done as the burn is conducted.</i></p>	100%

5 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve, or otherwise use fragile natural resources and nonrenewable historic resources on the PBWEA. In general, the FWC management intent for the PBWEA is to promote habitat conditions critical to meeting the life history requirements of the gopher tortoise and associated upland wildlife species, as well as to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity and the fish and wildlife resources of the area. In conjunction with this emphasis, it is the FWC’s intent to provide quality fish and wildlife-based public outdoor recreational opportunities on the PBWEA. The FWC will utilize the best available data, guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

5.1 Land Management Review

Pursuant to Chapter 259.036, F.S., 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 s. 259.032.”

Due to the fact that the Board of Trustees’ titled addition (~260 acres) to PBWEA is less than the normal acreage threshold (1,000 acres) necessary to trigger an LMR, a LMR has not been conducted on the area. If a LMR for the PBWEA is conducted in the future, the FWC will incorporate it into the PBWEA Management Plan.

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 PBWEA.

5.2.1 Monitoring

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

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

For natural communities, monitoring protocols are established through FWC's Objective-Based Vegetation Management (OBVM, Section 5.3.1) program, which monitors how specific vegetative attributes are responding to FWC management. For imperiled and focal fish and wildlife species, monitoring protocols are established through FWC's Wildlife Conservation Prioritization and Recovery (WCPR, Section 5.4.2) program. FWC staff may monitor additional fish and wildlife species when deemed appropriate. Exotic and invasive plant and animal species (Section 5.5) are also monitored as needed and appropriate.

Recreational uses are monitored through FWC's Public Access and Wildlife Viewing program, and work in conjunction with the establishment and adjustment of public access carrying capacities (Section 5.6.3). Historical resources (Section 5.9) are monitored with guidance from the Florida Department of State's Division of Historical Resources (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 PBWEA 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 PBWEA, 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 PBWEA, 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. PBWEA has high-quality native communities including baygall, depression marsh, floodplain swamp, mesic flatwoods, mesic hammock, scrub, scrubby flatwoods, and wet flatwoods 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 PBWEA. 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, the FWC land manager will identify the 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 on portions 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 or thinning, and restoration of natural water regimes are actions that could possibly be utilized to restore the area to historic natural communities.

During the previous planning period, 100% of the area's fire adapted communities have been treated with prescribed fire. Approximately 100% of the fire-adapted communities have are within are within the recommended fire return intervals. As detailed in the goals and objectives in Section 6 below. FWC plans to conduct prescribed burning on 100% of the area's fire adapted communities resulting in 100% of the area being maintained within the recommended fire return intervals during this planning period. Potential projected challenges with continuing to successfully implement prescribed fire on the area are described further in Section 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 PBWEA are discussed in more detail below.

As guided by vegetative management objectives, the FWC employs a fire management regime to increase both species and habitat diversity and will continue a prescribed burning program on the PBWEA. 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. 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 corresponds with each natural communities established fire return interval, preferably during the spring and early summer months, also known as the growing season.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Fire Plan will be developed for the PBWEA. 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. Upon completion, the PBWEA Prescribed Fire Plan will be incorporated into this Management Plan and implemented to facilitate habitat improvement on the area.

To date, all fire maintained acreage on the PBWEA has been treated with prescribed fire at least once. All management units on the area that are in maintenance condition are kept on established fire return intervals for each natural community type that predominantly employs growing season fires.

5.3.3 Habitat Restoration

Significant habitat management activities have taken place within many of the natural communities of PBWEA over the course of the previous management period beginning in

1996. Since 1996 almost all management units with fire-adapted natural communities have been treated with prescribed fires, most on a repeated basis as established within the management plan. This has aided in the restoration of native ground cover and improved wildlife habitat throughout PBWEA. In addition to conducting prescribed burning, roller chopping has been conducted on 829 acres, and mowing has been conducted on 522 acres have been mowed to further improve the habitat value of the natural communities at PBWEA and specifically encourage better habitat conditions for listed wildlife such as the gopher tortoise. Within the scrubs and scrubby flatwoods, 151 acres of mature oaks and sand pines were cut to set back the successional stage of the habitat, allow for increased sunlight, promote grassy ground cover species and encourage habitat conditions for the Florida scrub-jays. Timber harvesting has been conducted on 129 acres of wet flatwoods to improve conditions for cutthroat grass and natural community structure and habitat value for wildlife such as the red-cockaded woodpeckers.

In addition to the prescribed burning activities described above, the FWC has established OBVM management prescriptions and associated monitoring and has implemented resource management regimes, including prescribed burning, exotic species treatment, and mechanical treatments, etc. which includes all the xeric hammock communities on the area. Continuing habitat management activities on the area 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. Chemical removal is also planned to be implemented on some selected hardwoods in the xeric oak habitat in order to restore to sandhill habitat. Exotic species control is more extensively discussed in Section 5.5, below. Further habitat management and improvement objectives planned for the area are delineated 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 present on the area, a diversity of associated wildlife, including imperiled, rare, and more prevalent game and non-game wildlife species, can be found on the PBWEA. In managing for wildlife species, an emphasis will be placed on conservation, protection, and management of natural communities. On the PBWEA, natural communities important to wildlife include mesic flatwoods, wet flatwoods, and depression marsh as well as natural communities that are less represented on the PBWEA, but which are still important to wildlife, including floodplain swamp, scrub, and scrubby flatwoods.

The size and natural community composition of the PBWEA creates a habitat mosaic for a wide variety of wildlife species. Native plant communities will be managed to maintain and enhance richness and diversity of native wildlife species. In addition to resident wildlife, the PBWEA provides resources critical to many migratory birds including waterfowl, passerines, raptors, and others. Habitats important to migratory species will be protected, maintained or enhanced.

Wildlife management activities include 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.

Management practices will be implemented in order to restore, enhance, or maintain habitat for rare and imperiled species. 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.

Additionally, a comprehensive wildlife species list has been developed for the area, which will be updated and modified as appropriate over time. The species list is included within Section 2.3 of this Management Plan and will continue to be updated to enhance the knowledge and management of the area.

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 Wildlife Conservation Prioritization and Recovery (WCPR) program to ensure that management of the area's natural communities is having the desired effect on wildlife.

The goal of the WCPR program is to provide assessment, recovery, and planning support for the FWC-managed areas to enhance management of focal species and the recovery of

imperiled species. WCPR program objectives include prioritizing what the FWC does for imperiled and focal species on FWC-managed areas; ensuring the actions taken on these areas are part of statewide conservation programs and priorities; and informing others about the work accomplished on lands the FWC manages.

The WCPR program helps the FWC take a proactive, science-based approach to species management on FWC-managed lands. This approach assesses information from statewide potential habitat models and Population Viability Analysis and, in conjunction with input from species experts and people with knowledge of the area, creates site-specific wildlife assessments for imperiled wildlife species and a select suite of focal species. Staff combines these assessments with area-specific management considerations to develop a Species Management Strategy for the area. Each Strategy contains area-specific measurable objectives for managing priority species and their habitat, prescribes management actions to achieve these objectives, and 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 such as the PBWEA and others, the WCPR program helps assess imperiled and focal wildlife species needs and opportunities, prioritize what the 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, the FWC will facilitate fulfilling the needs of focal and imperiled wildlife species on the PBWEA. In the long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, the FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining wildlife species.

The FWC held a WCPR workshop for the PBWEA in June 2015. After incorporating input from a review by experts, subsequently the WCPR Strategy was reviewed and approved by FWC in 2016. Using statewide landcover-based habitat models, the PBWEA WCPR Strategy identifies 27 focal species as having potential habitat on the area. Of the focal species identified as having habitat on the area, the PBWEA WCPR Strategy provides measurable objectives or recommends some level of monitoring for gopher frog, Florida pine snake,



Cooper's hawk, crested caracara, Florida mottled duck, Florida sandhill crane, Florida scrub-jay, red-cockaded woodpecker, short-tailed hawk, swallow-tailed kite, wading bird, gopher tortoise, Bachman's sparrow, brown-headed nuthatch, northern bobwhite, southeastern American kestrel, Florida mouse, Florida panther, Sherman's fox squirrel, southern bald eagle, wading birds, and Florida black bear. The bluetail mole skink, sand skink, burrowing owl, limpkin, and snail kite were identified as limited opportunity species, because the PBWEA contains very limited habitat and little opportunity to manage for those species.

As described earlier in Section 1.3 of this Management Plan, the PBWEA was acquired to provide mitigation to offset the impacts of specific transportation projects on a suite of imperiled species including, among others because the area contains a functional, viable and sustainable habitat for each species and some level of support for sustaining populations of each species listed in the PBWEA MOU. FWC continues to manage habitat for these species, and conducts survey and monitoring efforts to track population size and ensure management is continuing to support each species on the area. While, the area does provide some level of habitat for all of the species listed in the PBWEA MOU, it provides the largest amount of habitat and support for populations of the gopher tortoise, red-cockaded woodpecker, and Florida scrub-jay. Following are expanded habitat and population profiles for those species on PBWEA.

Gopher Tortoise

Gopher tortoise habitat is normally characterized by well-drained sites with abundant herbaceous ground cover in the form of herbs and grasses. Habitat assessments for gopher tortoise are conducted periodically on PBWEA. Population estimates on PBWEA have remained relatively stable since acquisition, ranging from 2.02 tortoises/acre to 2.1 tortoises/acre as recently as 2008. This state-Threatened species is also a candidate for federal listing by the USFWS, making it a high priority species.

WCPR habitat models indicate 1,195 acres of potential gopher tortoise habitat within natural communities on PBWEA, with no significant changes in acres with restoration. Habitat for gopher tortoises is in excellent condition and likely supports a viable population. Objectives for monitoring the gopher tortoise can be found in Section 6.2 of this plan.

Red-cockaded Woodpecker

The federal-Endangered red-cockaded woodpecker has been actively managed and monitored on PBWEA since 1997. The red-cockaded woodpecker requires open, mature pine woodlands that have a diversity of grass, forbs, and shrubs. This species is management responsive and can be an indicator of properly managed pine forests. WCPR

habitat models indicate 1,387 acres of potential habitat within current natural communities on PBWEA. Of the modeled potential habitat on PBWEA, approximately 1,151 acres are actively managed to support red-cockaded woodpeckers.

Currently, the red-cockaded woodpecker metapopulation, that includes PBWEA, contains 6 primary breeding groups (5 on PBWEA and 1 adjacent to the WEA) and 7 active clusters. PBWEA also has 1 solitary group and 3 recruitment clusters, with plans to add one more recruitment cluster in the future. The nearest red-cockaded woodpecker population to PBWEA is located on Babcock Ranch Preserve (BRP), approximately 11 miles southwest of PBWEA. The landscape between PBWEA and BRP consists primarily of ranchlands interspersed with a few native areas, and is not conducive to dispersal. PBWEA is part of the South/Central Florida Recovery Unit, described in the USFWS Recovery Plan, the population within this recovery unit is important in maintaining the regional diversity of red-cockaded woodpeckers and PBWEA is designated as an important support area within this recovery unit. Objectives for monitoring this species can also be found in Section 6.2 of this plan.

Florida Scrub-Jays

Florida scrub-jays are found in both coastal and ancient scrub-type habitats in peninsular Florida. Currently, PBWEA supports 6 scrub-jay family groups. Scrub-jays have been monitored on PBWEA since the original acquisition of the area, at which time there were 8 family groups. The population has fluctuated slightly over time, but has remained steady at 6 family groups since 2005.

The Florida scrub-jay is listed as Threatened at the federal level and is a high statewide priority. WCPR habitat models indicate 200 acres of potential habitat within current natural communities on PBWEA. PBWEA is currently supporting scrub-jays across much of the current potential habitat, and habitat is in good condition for continued use. Given the amount of habitat on PBWEA, and considering factors such as current population size, territory size, and suitability, PBWEA has the realistic potential to support >10 scrub-jay family groups. Populations of 10 or more family groups can provide moderate population stability on the area, and PBWEA has the ability to support the regional persistence of the Florida scrub-jay. Objectives for monitoring this species can also be found in Section 6.2 of this plan.

More comprehensive species descriptions and habitat profiles on all of the species listed in Table 14 below are provided in the PBWEA WCPR Strategy located in Appendix 13.10. The WCPR Strategy provides detailed descriptions of wildlife monitoring approaches. Objectives for monitoring focal species can also be found in Section 6.2 of this management plan. The WCPR Strategy also provide wildlife population statistics, land management strategies for specific species and inter/intra-agency coordination for monitoring and protecting of imperiled and focal species.

The FWC will continue to implement the PBWEA WCPR Strategy. The FWC will also continue to review and revise the WCPR Strategy as appropriate.

Table 14. Focal Species Occurring on or Near the PBWEA

Common Name	Scientific Name
American kestrel	<i>Falco sparverius</i>
Bachman's sparrow	<i>Peucaea aestivalis</i>
Brown-headed nuthatch	<i>Sitta pusilla</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Crested caracara	<i>Caracara cheriway</i>
Florida black bear	<i>Ursus americanus floridanus</i>
Florida mottled duck	<i>Anas fulvigula</i>
Florida mouse	<i>Podomys floridanus</i>
Florida panther	<i>Puma concolor coryi</i>
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>
Florida sandhill crane	<i>Grus canadensis</i>
Florida scrub jay	<i>Aphelocoma coerulescens</i>
Gopher frog	<i>Lithobates capito</i>
Gopher tortoise	<i>Gopherus polyphemus</i>
Great egret	<i>Ardea alba</i>
Little blue heron	<i>Egretta caerulea</i>
Northern bobwhite quail	<i>Colinus virginianus</i>
Red-cockaded woodpecker	<i>Picoides borealis</i>
Reddish egret	<i>Egretta rufescens</i>
Sherman's fox squirrel	<i>Sciurus niger shermani</i>
Short-tailed hawk	<i>Buteo brachyurus</i>
Snowy egret	<i>Egretta thula</i>
Southern bald eagle	<i>Haliaeetus leucocephalus</i>
Swallow tailed kite	<i>Elanoides forficatus</i>
Tricolored heron	<i>Egretta tricolor</i>
White ibis	<i>Eudocimus albus</i>
Wood stork	<i>Mycteria americana</i>

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 the PBWEA. Control techniques 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 that have been documented on the PBWEA are air potato, Asian sword fern, Australian pine, bahiagrass, Brazilian pepper, Caesar's weed, centipedegrass, cogon grass, Natal grass, Old World climbing fern, strawberry guava, tropical soda apple, and zarzabacoa comun. 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.

An aggressive exotics treatment plan was implemented on the area over the previous planning period. During that time period, FWC chemically treated approximately 220 acres for exotic plant species such as the Old World climbing fern, cogon grass, and air potato. Mechanical treatment of noxious native plants such as wax myrtles have been conducted mechanically in over 200 acres of semi-improved pasture to maintain the value of these areas for wildlife. Feral hog control was conducted on the area through trapping to limit impacts to native plant communities.

Currently, treatment and control of old world climbing fern continues to be the predominant exotic invasive plant species management challenge at PBWEA. PBWEA is currently in the second year of aggressively treating climbing fern. Additionally, FWC has scheduled initial treatment on 196 acres of found to have old world climbing fern, and re-treatment on an additional 100 acres previously treated. 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 PBWEA 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, the FWC implements a proactive approach to controlling the introduction of exotic pests and pathogens to the area.



An exotic animal species of concern on the PBWEA 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 and digging). Though feral hogs are not considered to be a significant problem on the area, some signs of feral hog damage to natural communities at the PBWEA have been documented and the FWC will continue to monitor for signs of additional resource damage. The FWC will consult with other regional natural resource managing agencies and private landowners to coordinate feral hog control measures as necessary. Also, hog populations may be controlled by trapping. Trapping of hogs may be used as a control measure, as necessary, to aid in minimizing the impacts resulting from hog populations on the area.

Other exotic animal species that are found or have the potential to be found on the area include nine-banded armadillo, Burmese python, and Nile monitor. The FWC will continue to conduct measures to control and monitor exotics species on the area as outlined in Section 6.4 of this management plan. Ongoing exotic plant species challenges are further detailed in Section 8 below.

5.6 Public Access and Recreational Opportunities

The PBWEA will be managed under a low intensity, multiple-use concept that includes providing opportunities for fish- and wildlife-based public outdoor recreation. The recreational activities offered on the PBWEA include hiking and wildlife viewing.

Authorized recreational uses are managed consistent with the purposes for acquiring the PBWEA, including promoting habitat conditions critical to meeting the life history requirements of the gopher tortoise, Florida scrub jay and red-cockaded woodpecker, and ensuring the conservation and ecological integrity of the area while managing for low intensity, multiple-uses, thus providing fish and wildlife based public outdoor recreational opportunities for Florida's citizens and visitors.

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 ADA⁴ 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 at the PBWEA. To accomplish this, the FWC has developed a Recreation Master Plan for the PBWEA that will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. This Recreation Master Plan includes planning for parking, trail design, and area resource interpretation, and can be found in Appendix 13.9.

5.6.3 Recreation 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, the FWC has determined that the PBWEA can currently support 98 visitors per day. However, visitation to PBWEA is currently minimal, which provides excellent opportunities for quiet and solitude while viewing the area’s wildlife.

Importantly, public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area in order to protect the natural and historical resources on the PBWEA 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 implementation process.

5.6.4 Wildlife Viewing

The PBWEA is home to a variety of resident wildlife found within its flatwoods, scrub, and other natural communities. The PBWEA's size and variety of habitat types, along with its location within the Fisheating Creek drainage basin, create outstanding wildlife viewing opportunities. Additionally, wildlife viewing opportunities are projected to increase upon the completion of planned improvements for public access and wildlife viewing outlined in Section 6.5 of this plan.

5.6.5 Hunting

Hunting is prohibited on the PBWEA, as per the MOU with FDOT and USFWS. However, hunting opportunities are offered on nearby public lands.

5.6.6 Fishing

Fishing is authorized year-round at the PBWEA. However, fishing opportunities on the PBWEA are limited.

5.6.7 Trails

Currently, the PBWEA offers nearly five miles of designated trails and nearly nine miles of undesignated trails.

5.6.8 Bicycling

Bicycling is prohibited on the PBWEA. However, bicycling opportunities are offered on nearby public lands.

5.6.9 Equestrian

Equestrian use is prohibited on the PBWEA. However, horseback riding opportunities are offered on nearby public lands.

5.6.10 Camping

Camping is prohibited on the PBWEA. However, camping opportunities are offered on nearby public lands.

5.6.11 Geocaching

Geocaching, also known as Stash Hunt or Geo-stash, is a contemporary combination of orienteering and scavenger hunting generally utilizing a Geographic Positioning System 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.

For these reasons, 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 allowed only through issuance of an FWC permit that is governed by specific permitting guidelines. These guidelines may be found on the following FWC website: http://myfwc.com/media/1074886/FWC_Geocache_Guidelines.pdf.

5.7 Hydrological Preservation and Restoration

5.7.1 Hydrological Assessment

The FWC will conduct or obtain an onsite hydrological and risk assessment to identify potential hydrology restoration needs on the PBWEA. To date, no hydrological impacts have been detected on the area. However, if the hydrology assessment recommends hydrological restoration work, it will be conducted as determined appropriate by the FWC and the SFWMD.

5.8 Forest Resource Management

Pursuant to OBVM management goals (see Section 5.3.1, above), 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, however it has been determined that PBWEA does not have any off-site pine species that require these reforestation management techniques. 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, overstory structure, and species diversity. However, the current density of pine forests on the PBWEA 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.

The FWC will continue to cooperate with the FFS to produce a PBWEA Timber Assessment, and will be included in the Appendices once completed. Also, the FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

5.8.1 Forest Management Plan

As discussed above, the FFS will conduct a Timber Assessment on PBWEA. The FWC will manage timber resources on the PBWEA in accordance with the recommendations of the OBVM, the PBWEA WCPR Strategy and the Timber Assessment.

However, given the limited amount of timber resources currently present on the area, a formal forest management plan is not necessary for management of the timber resources on the PBWEA. Since the FWC only develops area-specific forest management plans on those areas where the extent and type of timber resources warrant the development of a forest management plan.

5.9 Historical Resources

Procedures outlined by the Florida Department of State's Division of Historical Resources (DHR) will be followed to preserve archaeological and historical resources. The FWC will continue to consult with the DHR in an attempt to locate and preserve any historical or archaeological features on the area. As necessary, the FWC will also contact professionals from the DHR for assistance prior to any ground-disturbing activity on the area.

As indicated in Section 2.8, the DHR Master Site File indicates that there are no recorded archaeological sites within the boundaries of the PBWEA. However, the FWC will continue to coordinate with DHR to assess the need for conducting a cultural resource survey.

As a part of this management plan, the FWC will ensure that management staff receive Archaeological Resource Management (ARM) training. Furthermore, the FWC will ensure all known sites are recorded in the DHR Master Site File.

5.10 Capital Facilities and Infrastructure

When public facilities are developed on FWC-managed areas, the FWC complies with the ADA (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where handicap access is structurally impractical or where providing such access would change the fundamental character of the facility being provided). Planned capital facilities and infrastructure improvements are listed in Section 6.8 of this management plan.

Current capital facilities and infrastructure on PBWEA include two observation decks, an office and facilities complex, two kiosks, approximately 4.6 miles of designated trails and 8.7 miles of undesignated trails, and approximately 15 miles of service roads.

Currently, as described in Section 6.8 of this Management Plan, the FWC plans on constructing one new pole barn and a new entrance package (parking area, signage, covered picnic table, etc.) during this planning period.

As described in Section 5.6.1 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 PBWEA. 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 no parcels included on the FWC Florida Forever Additions and Inholdings list for the PBWEA. Upon completion of the CAS, additions to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended for the area.

5.12 Research Opportunities

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

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of PBWEA as set forth in the lease agreement with the Board of Trustees and laid out in the MOU between FWC, FDOT, and FWS. In keeping with the lease agreement, 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 13.11) are followed with regard to any ground-disturbing activities. The FWC is responsible for the overall management and operation of the PBWEA. The FFS assists the FWC by providing technical assistance on forest resource management. In addition, the FWC cooperates and consults with the DEP and the SFWMD for the monitoring and management of both ground and surface water resources of the PBWEA.

5.13.2 First Responder and Military Training

Given the area's characteristics and requirements of the PBWEA MOU, first-responder (public governmental police department or agency, fire and emergency medical service personnel) training and military training are not allowed on PBWEA.

5.13.1 Apiaries

Currently, there are no apiaries operating on PBWEA. However, use of apiaries is conditionally approved for PBWEA, 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 13.7). Location, management, and administration of apiaries on PBWEA will be guided by the FWC Apiary Policy (Appendix 13.14). The FWC Apiary Policy will be followed with regards to site location, management, and administration of apiaries.

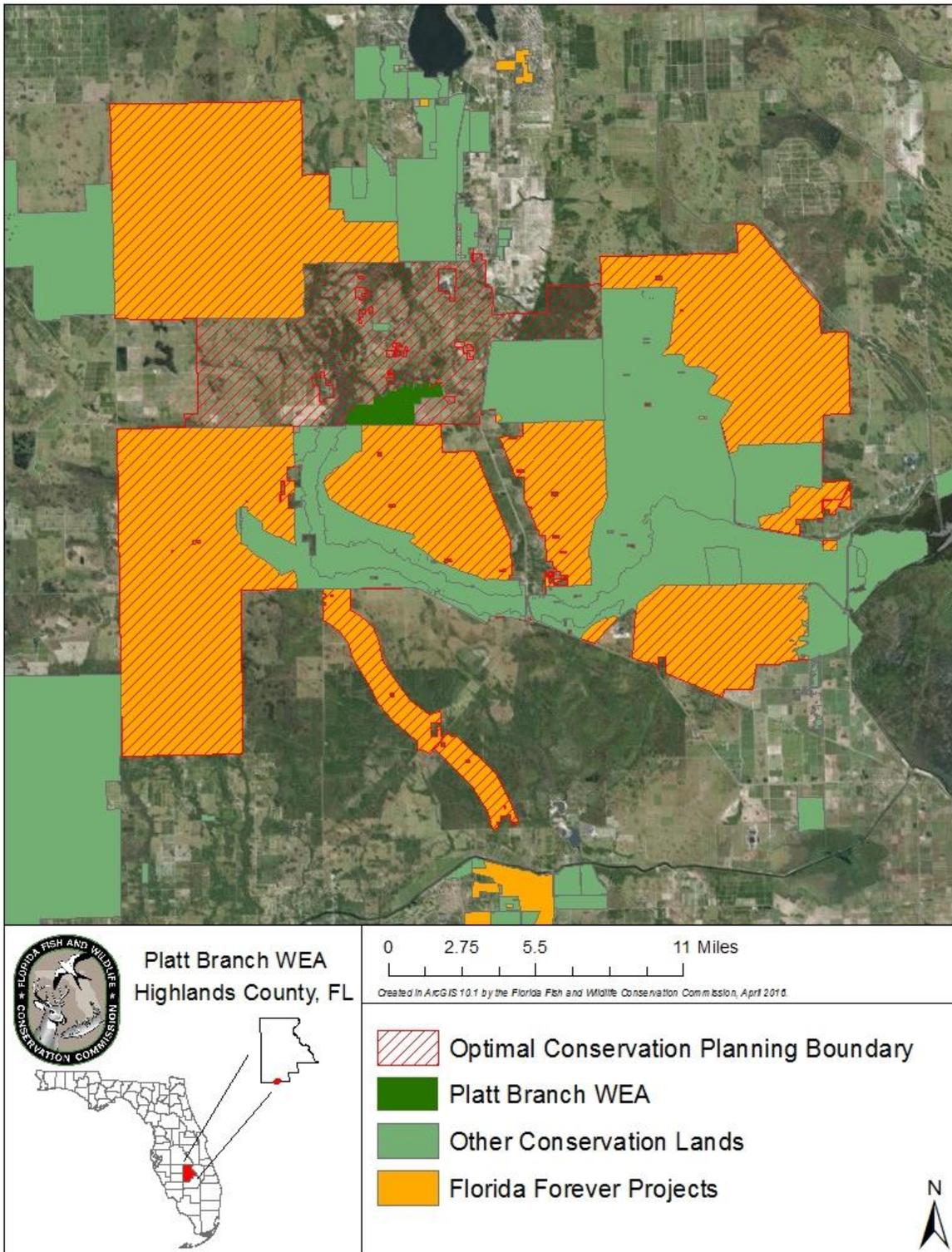


Figure 11. PBWEA Optimal Conservation Planning Boundary

5.14 Climate Change

Because of the unique ecology and topography of Florida, 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 century³.

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

Potential impacts that may be occurring as a result of climate change include: change in the timing of biological processes, such as flowering, breeding, hibernation, and migration^{4, 5, 6}; more frequent invasions and outbreaks of exotic invasive species⁷; and loss of habitat in coastal areas due to sea level rise⁸. 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° F⁹. A number of ecosystems are projected to be affected at temperature increases well below these levels.

At this time, the potential effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. For example, the FWC has begun

a process for currently developing climate change adaptation strategies for monitoring, evaluating, and determining what specific actions, if any, may be recommended to ameliorate the projected impacts of climate change on fish and wildlife resources, native vegetation, and the possible spread of exotic and invasive species. Currently, the FWC is continuing its work on the development of these potential adaptation strategies. However, as noted above, the effects of climate change may become more frequent and severe within the time period covered by this plan.

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

The low-lying coastal habitats, such as the salt marsh and hardwood swamp natural communities are projected to face the most direct and dramatic impacts of climate change, particularly from a projected rising sea level and from the projected increased frequency and intensity of coastal storms^{10, 11, 12, 13}. Although sea level rise is not directly projected to affect this area, due to the location, indirect sea level rise may have potential impacts on the area. The potential loss of habitat may result in the loss of species using that habitat, including migrating and nesting birds. Storm events also cause considerable physical damage to native vegetation along vulnerable shorelines, impacting nesting habitat for sea life and shorebirds. The projected rise in sea levels may decrease the availability and abundance of prey for wading birds that forage in shallow waters on the expansive tidal flats of the Gulf Coast. Climate change may amplify and hasten these effects, potentially at rates that exceed the normal resiliency of plant communities to recover, shift or adapt accordingly^{14, 15}. 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 coastal ecosystems and freshwater marshes, possibly resulting in more salt-tolerant aquatic plant communities.

Elements of climate change that may potentially affect the PBWEA include more frequent and more potent storm events, alteration of vegetation reproductive cycles, the spread of exotic species, and changes in the fire regime. To address the potential impacts of climate change on the PBWEA, goals and objectives have been developed as a component of this Management Plan. 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 PBWEA 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. Water conservation is accomplished through hydrological restoration, management, and monitoring as described in Section 5.7 above.

6 Resource Management Goals and Objectives

The management goals described in this section are considered broad, enduring statements designed to guide the general direction of management actions to be conducted in order to achieve an overall desired future outcome for the PBWEA. The objectives listed within each management goal offer more specific management guidance and measures and are considered the necessary steps to be completed to attain the management goal. All of the objectives listed below are classified as having either **short-term** (2017 – 2019) or **long-term** (2019 – 2027) timelines for completion. Some have specific end-of-the-calendar-year target dates for completion.

6.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term (TWO YEARS)

- 6.1.1** Conduct prescribed burning on 400 acres of fire-adapted communities per year.

- 6.1.2** Maintain 800 acres (70% of the area's fire adapted communities) within established fire return intervals for the area's fire adapted communities. (basin marsh 5 years, depression marsh 5 years, dry prairie 3 years, flood plain marsh 5 years, mesic flatwoods 4 years, pine plantation 4 years, sandhill 3 years, scrub 20 years, scrubby flatwoods 10 years, seepage slope 5 years, slough 5 years, swale 5 years, upland mixed woodland 3 years, upland pine 3 years, wet flatwoods 4 years, and wet prairie 4 years.)
- 6.1.3** Develop and implement an updated prescribed burning plan.
- 6.1.4** Conduct habitat/natural community improvement on 25 acres per year including mechanical treatments in Management Units (MU) 1,2,15 (Figure 12).
- 6.1.5** Conduct habitat/natural community restoration activities including mechanical reduction of mature oaks on 25 acres per year in MUs 3, 8, and 7 (Figure 12).
- 6.1.6** Continue to implement OBVM.
- 6.1.7** As described in the WCPR Strategy, determine and implement the appropriate management actions to optimize scrub-jay habitat in OBVM MUs 1, 3, and 15 by 2017 (Figure 12).
- 6.1.8** As described in the WCPR Strategy, plant site appropriate pines in OBVM MUs 15 and 8 by 2018 (Figure 12).
- 6.1.9** Continue to use mechanical treatments to improve wildlife habitat.

Long-term (UP TO 10 YEARS)

- 6.1.10** Continue to conduct prescribe burning on 400 acres of fire adapted communities per year.
- 6.1.11** Maintain 1,200 acres (100% of the area's fire adapted communities) within established fire return intervals for the area's fire adapted communities. (basin marsh 5 years, depression marsh 5 years, dry prairie 3 years, flood plain marsh 5 years, mesic flatwoods 4 years, pine plantation 4 years, sandhill 3 years, scrub 20 years, scrubby Flatwoods 10 years, seepage slope 5 years, slough 5 years, swale 5 years, upland mixed woodland 3 years, upland pine 3 years, wet flatwoods 4 years, and wet prairie 4 years.)
- 6.1.12** Implement an updated prescribed burning plan.

- 6.1.13 Continue to conduct habitat/natural community improvement on 25 acres per year including mechanical treatments in MUs 1,2,15 (Figure 12).
- 6.1.14 Continue to implement OBVM.
- 6.1.15 Continue to conduct habitat/natural community restoration activities on other acreage as appropriate.
- 6.1.16 Continue to use mechanical treatments to improve wildlife habitat.

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

Goal: Monitor, maintain, improve, or restore imperiled and focal species populations and habitats.

Short-term

- 6.2.1 Implement the WCPR Strategy by managing identified habitats and monitoring identified species.
- 6.2.2 As described in the WCPR Strategy, conduct a gopher tortoise survey.
- 6.2.3 As described in the WCPR Strategy, continue annual monitoring of Florida scrub-jays.
- 6.2.4 As described in the WCPR Strategy, continue conducting species management and monitoring activities for red-cockaded woodpeckers.
- 6.2.5 Continue to cooperate and work with Lykes Brothers Inc., in coordinating management of RCWs and their habitat.
- 6.2.6 As described in the WCPR Strategy, develop a red-cockaded woodpecker guidance document.
- 6.2.7 As described in the WCPR Strategy, continue to monitor 5 southeastern American kestrel nest boxes.
- 6.2.8 As described in the WCPR Strategy, annually assess habitat conditions around southeastern American kestrel nest boxes to ensure suitability for kestrels.
- 6.2.9 Continue to monitor for panther presence.

6.2.10 Continue to collect opportunistic wildlife species occurrence data.

Long-term

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

6.2.12 Continue to work with Lykes Brothers Inc., in coordinating management of RCWs and their habitat.

6.2.13 As described in the WCPR Strategy, conduct a baseline survey for Bachman's sparrow and brown-headed nuthatch.

6.2.14 As described in the WCPR Strategy, conduct a gopher frog call count.

6.2.15 As described in the WCPR Strategy, conduct a herpetological drift fence survey.

6.2.16 As described in the WCPR Strategy, conduct a bat species inventory.

6.2.17 As described in the WCPR Strategy, conduct a Florida mouse survey by 2027.

6.2.18 As described in the WCPR Strategy, repeat gopher tortoise surveys every 5 years.

6.2.19 As described in the WCPR Strategy, continue annual monitoring of Florida scrub-jays.

6.2.20 As described in the WCPR Strategy, continue conducting species management and monitoring activities for red-cockaded woodpeckers.

6.2.21 As described in the WCPR Strategy, continue to develop a red-cockaded woodpecker guidance document.

6.2.22 As described in the WCPR Strategy, continue to monitor 5 southeastern American kestrel nest boxes.

6.2.23 As described in the WCPR Strategy, annually assess habitat conditions around southeastern American kestrel nest boxes to ensure suitability for kestrels.

6.2.24 As described in the WCPR Strategy, assess need for additional southeastern American kestrel nest boxes.

- 6.2.25 As described in the WCPR Strategy, repeat Bachman’s sparrow and brown-headed nuthatch surveys and gopher frog call counts.
- 6.2.26 Continue to monitor for panther presence.
- 6.2.27 As described in the WCPR Strategy, conduct a rare plant survey by 2027.
- 6.2.28 Update the WCPR Strategy.
- 6.2.29 Continue to collect 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 opportunistic wildlife species occurrence data.

Long-term

- 6.3.2 Continue to collect opportunistic wildlife species occurrence data.
- 6.3.3 Install and monitor a bat house.
- 6.3.4 Conduct surveys for game populations.

6.4 Exotic and Invasive Species Maintenance and Control

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

Short-term

- 6.4.1 Annually treat at least 50 acres of EPPC Category I and Category II invasive exotic plant species (centipedegrass, natal grass, Old World climbing fern, strawberry guava, zarzabacoa comun, cogon grass, air potato, Asian sword fern, Australian pine, bahiagrass, Brazilian pepper, Caesar weed, tropical soda apple)

- 6.4.2 Implement control measures including trapping as deemed necessary on 1 species (feral hogs), of nuisance animal and exotic species.
- 6.4.3 Continue opportunistic monitoring on the following exotic animal species (Nile monitor and Burmese pythons).

Long-term

- 6.4.4 Continue to annually treat at least 50 acres (or as needed) of EPPC Category I and Category II invasive exotic plant species.
- 6.4.5 Contract to conduct survey and mapping of invasive exotic plant species.
- 6.4.6 Continue to implement control measures on one species (feral hogs), and nuisance animal and exotic species.
- 6.4.7 Continue opportunistic monitoring on the following exotic animal species (Nile monitor, Burmese pythons).

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 (98 opportunities) visitors per day.
- 6.5.2 Continue to provide 2 kiosks on site, a website page, trail brochure, and bird list for interpretation and education.
- 6.5.3 Continue to work with schools, universities and wildlife viewing groups to provide educational/recreational opportunities as appropriate.
- 6.5.4 Maintain 4.6 miles of designated trails and 8.7 miles of unmarked trails.
- 6.5.5 Update and continue to implement the Recreation Master Plan.
- 6.5.6 Monitor trails annually for visitor impacts.
- 6.5.7 Monitor visitation to determine the need for a toilet facility.

Long-term

- 6.5.8** Maintain public access and recreational opportunities to allow for a recreational carrying capacity of (98 opportunities) visitors per day.
- 6.5.9** Continue to provide 2 kiosks on-site, a website page, trail brochure, and bird list for interpretation and education.
- 6.5.10** Continue to work with universities and wildlife viewing groups to provide educational/recreational opportunities as appropriate.
- 6.5.11** Maintain 4.6 miles of designated trails and 8.7 miles of unmarked trails.
- 6.5.12** Continue to implement the Recreation Master Plan.
- 6.5.13** Monitor trails annually for visitor impacts.
- 6.5.14** Monitor visitation to determine the need for a toilet facility.
- 6.5.15** 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.
- 6.5.16** 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** Maintain and enhance natural hydrological functions, install and maintain low-water crossings and culverts as appropriate.
- 6.6.2** Cooperate with DEP and the SFWMD on hydrological restoration and water quality monitoring and assessment.

Long-term

- 6.6.3** Enhance natural hydrological functions, continue to install and maintain low-water crossings and culverts as appropriate.

- 6.6.4 Conduct or obtain a site hydrological assessment to identify potential hydrology restoration needs.
- 6.6.5 Restore natural hydrologic condition and functions to portions of the area as recommended in the hydrological assessment, and as is appropriate with established habitat management guidelines/conditions for the area's imperiled species.
- 6.6.6 Continue to cooperate with DEP and the SFWMD on hydrological restoration and water quality monitoring and assessment.

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

6.8 Capital Facilities and Infrastructure

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

Short-term

- 6.8.1 Monitor trails and infrastructure biannually.
- 6.8.2 Continue to maintain five facilities: office/work center, entrance and trail head, mitigation park kiosk, and 2 observation platform facilities (Figure 12).
- 6.8.3 Maintain 0.9 miles of roads.

- 6.8.4 Maintain 4.6 miles of designated trails and 8.7 miles of unmarked trails (firebreaks and service roads) existing on site (as applicable).
- 6.8.5 Improve or repair 1 facility existing on site (as applicable) (Figure 12).
- 6.8.6 Improve 3 miles of fire breaks.

Long-term

- 6.8.7 Monitor trails and infrastructure biannually.
- 6.8.8 Continue to maintain 5 facilities: office/work center, entrance and trail head, mitigation park kiosk, and 2 observation platform facilities (Figure 12).
- 6.8.9 Continue to maintain 0.9 miles of roads.
- 6.8.10 Continue to maintain 5 miles of trails existing on site.
- 6.8.11 Construct, improve or repair three facilities, including constructing 1 new pole barn, and constructing a new entrance package (parking area, signage, covered picnic table, etc.) and 5 miles of trails existing on site (as applicable) (Figure 12).
- 6.8.12 Construct a toilet at the entrance and trail head, if warranted by visitation.

6.9 Historical Resources

Goal: Monitor, protect, preserve, and maintain the historical resources of the PBWEA.

Short-term

- 6.9.1 Ensure all known sites are recorded in the Florida Division of Historical Resources Master Site file.

Long-term

- 6.9.2 Cooperate with DHR, or trained FWC staff in designing site plans for development of infrastructure.
- 6.9.3 Coordinate with DHR to assess the need for conducting a cultural resource survey

- 6.9.4 Coordinate with DHR for cultural resource management guideline ARM staff training.

6.10 Research Opportunities

Goal: Explore and pursue cooperative research opportunities.

Long-term

- 6.10.1 Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, etc.
- 6.10.2 Continue to cooperate with researchers, universities, and others as appropriate.
- 6.10.3 Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.

6.11 Land Conservation and Stewardship Partnerships

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

Short-term

- 6.11.1 Identify potential important wildlife resources, habitat, landscape-scale linkages, and wildlife corridors for operational/resource management that may be important to the continued viability of fish and wildlife populations in the region.
- 6.11.2 Develop a Conservation Action Strategy.
- 6.11.3 Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship, partnerships, and potential conservation easements.
- 6.11.4 Identify and recommend parcels for addition to the FWC acquisition list.
- 6.11.5 Identify potential non-governmental organization partnerships and grant program opportunities.
- 6.11.6 Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.

Long-term

- 6.11.7 To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed optimal conservation planning boundary for PBWEA as deemed necessary.
- 6.11.8 Continue to identify and recommend parcels for addition to the FWC acquisition list.
- 6.11.9 Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.
- 6.11.10 Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate.
- 6.11.11 Periodically (at least every three to five years) continue to contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy. Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate.

6.12 Climate Change Adaptation

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 PBWEA.

Long-term

- 6.12.1 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 PBWEA.
- 6.12.2 Incorporate appropriate climate change adaptation strategies into the WCPR for the PBWEA.
- 6.12.3 As appropriate, update the PBWEA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of PBWEA's fire-adapted habitats.

- 6.12.4 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 PBWEA Recreation Master Plan.

6.13 Cooperative Management and Special Uses

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

Short-term

- 6.13.1 Continue to cooperate and work with FDOT and USFWS, regarding the management of the area and the consideration of additional requests from FDOT for the issuance of mitigation credits to offset specific transportation project impacts under the PBWEA MOU.
- 6.13.2 Continue to cooperate with the Lykes Brothers, Inc., regarding management of RCWs and adjoining RCW habitat.
- 6.13.3 Continue to cooperate with adjacent landowners regarding land management activities on the area.

Long-term

- 6.13.4 Continue to cooperate and work with FDOT and USFWS, regarding the management of the area and the consideration of additional requests from FDOT for the issuance of mitigation credits to offset specific transportation project impacts under the PBWEA MOU.
- 6.13.5 Continue to cooperate with the Lykes Brothers, Inc., regarding management of RCWs and adjoining RCW habitat.
- 6.13.6 Continue to cooperate with adjacent landowners regarding land management activities on the area.

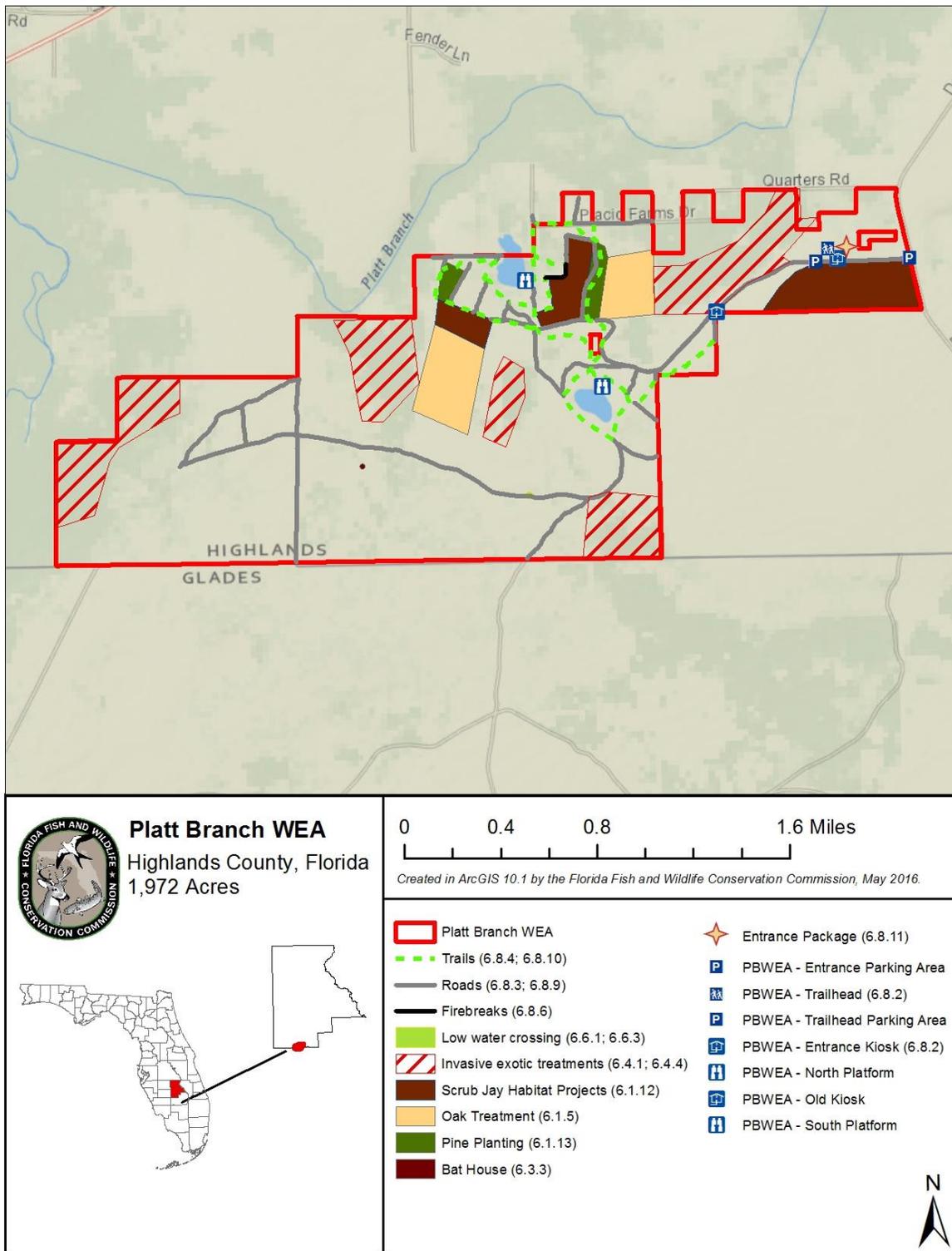


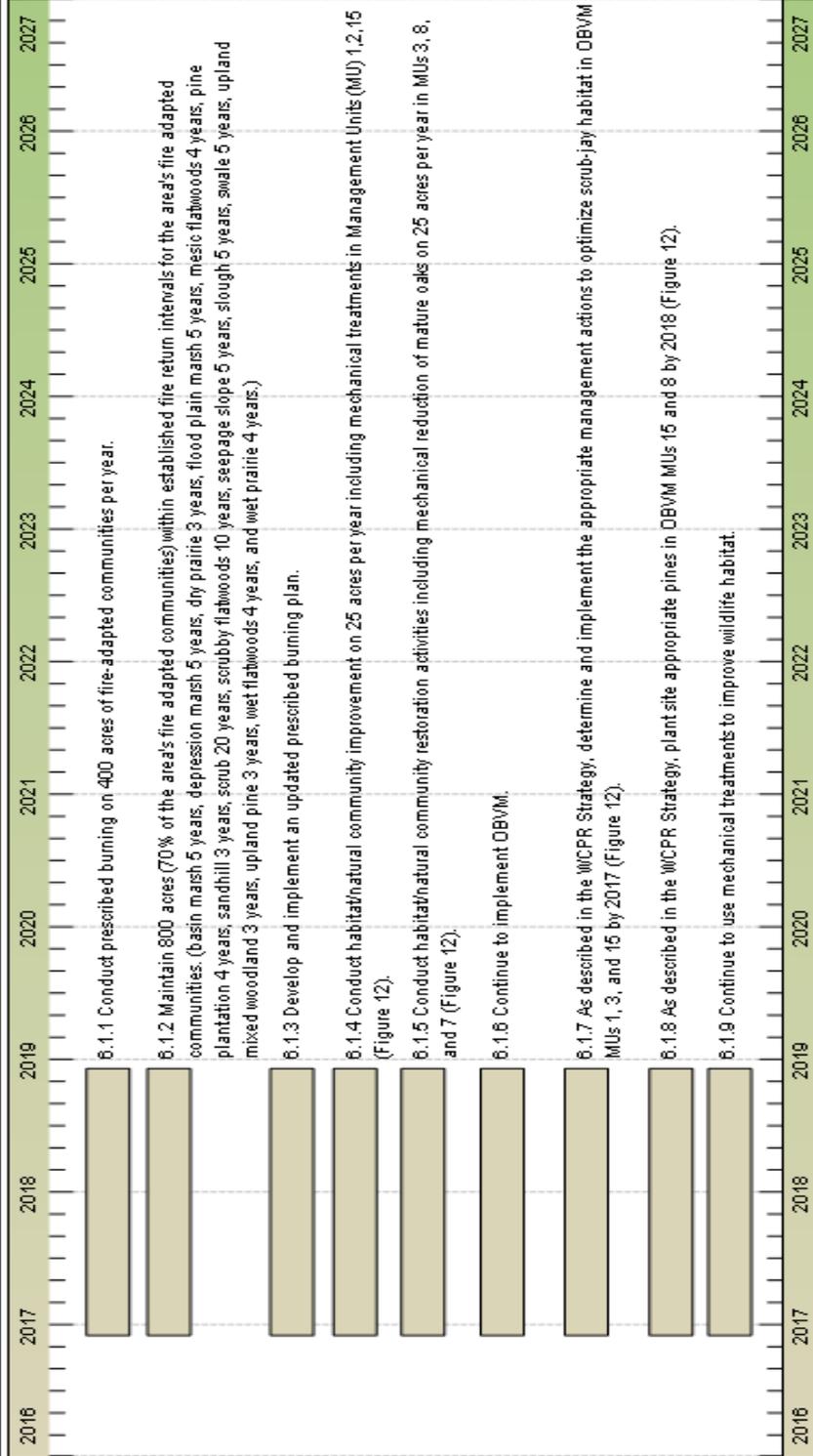
Figure 12. PBWEA Project Location

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

The following section presents the short- and long-term goals and objectives for the management of PBWEA graphically in a timeline format. These timelines directly reflect the short- and long-term goals and objectives presented above in Section 6.

Habitat Restoration and Improvement

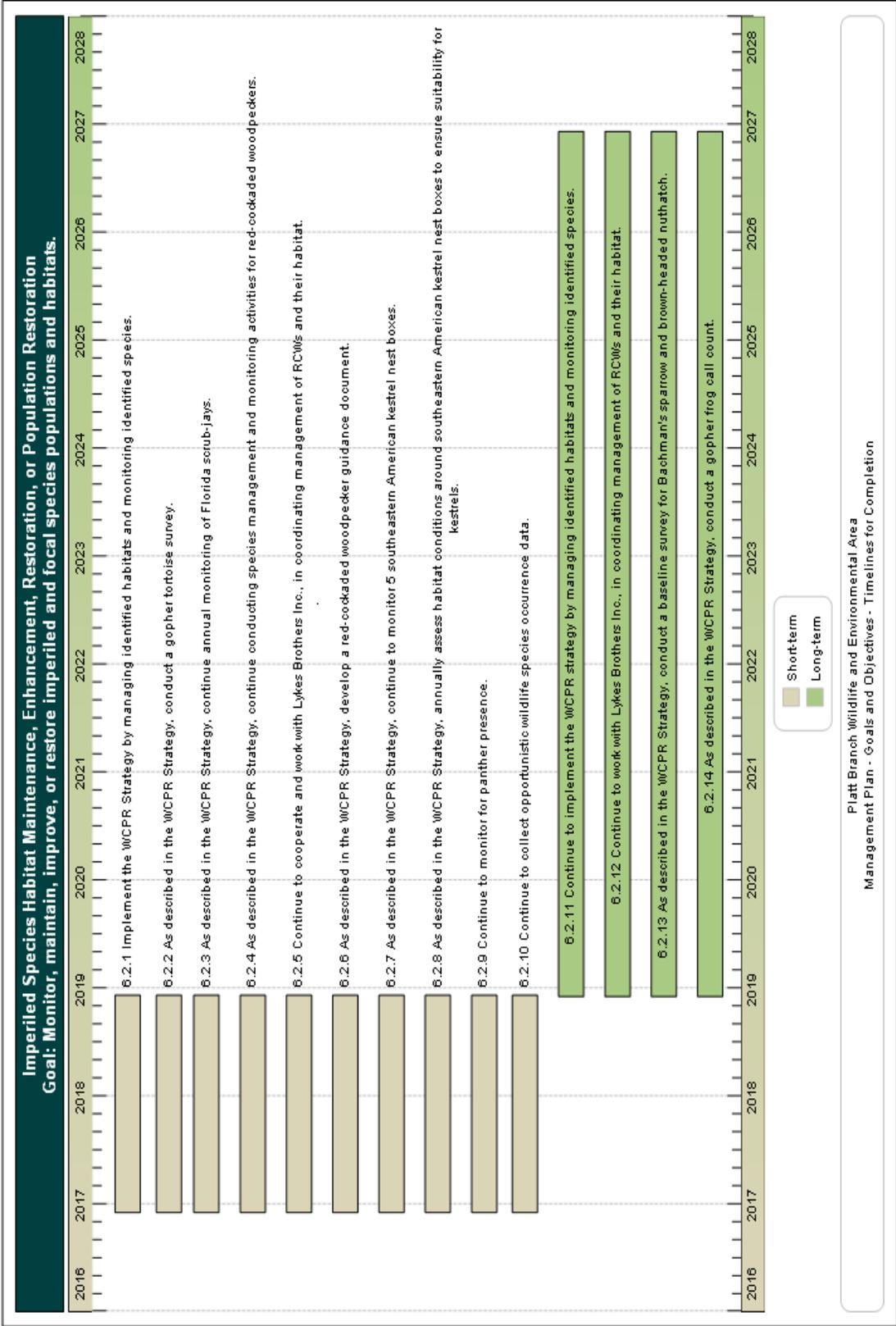
Goal: Improve extant habitat and restore disturbed areas.



Short-term

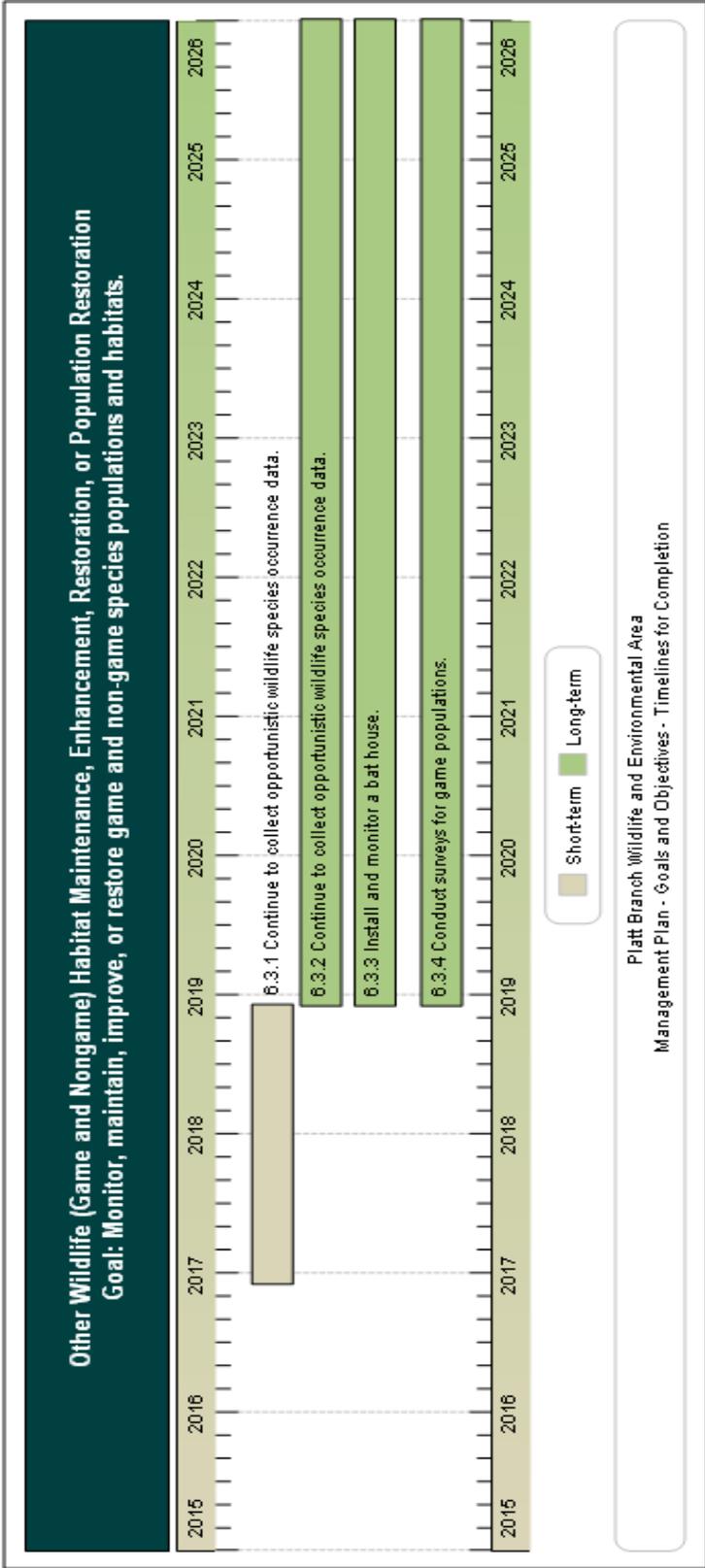
Platt Branch Wildlife and Environmental Area
Management Plan - Goals and Objectives - Timelines for Completion

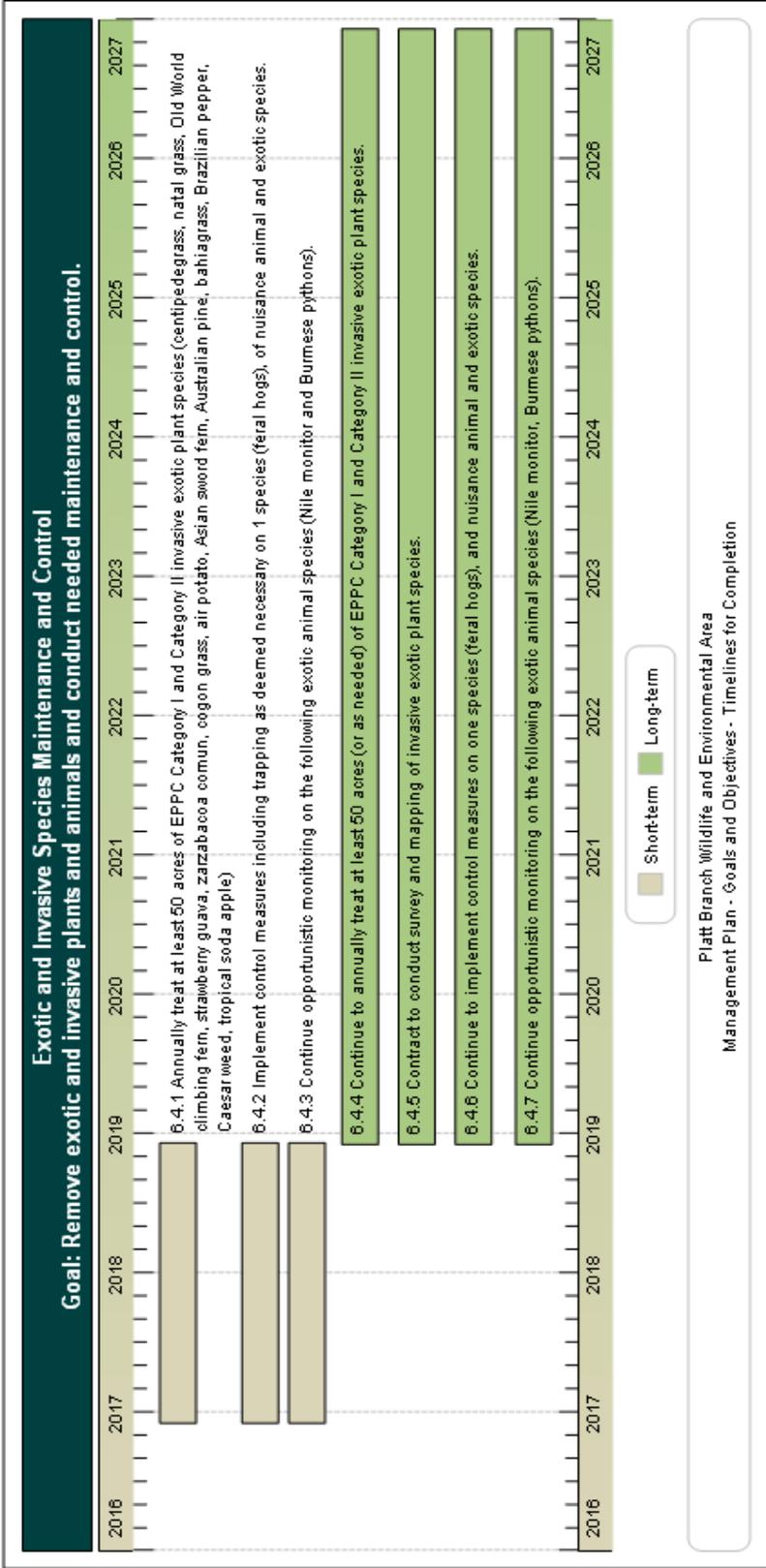


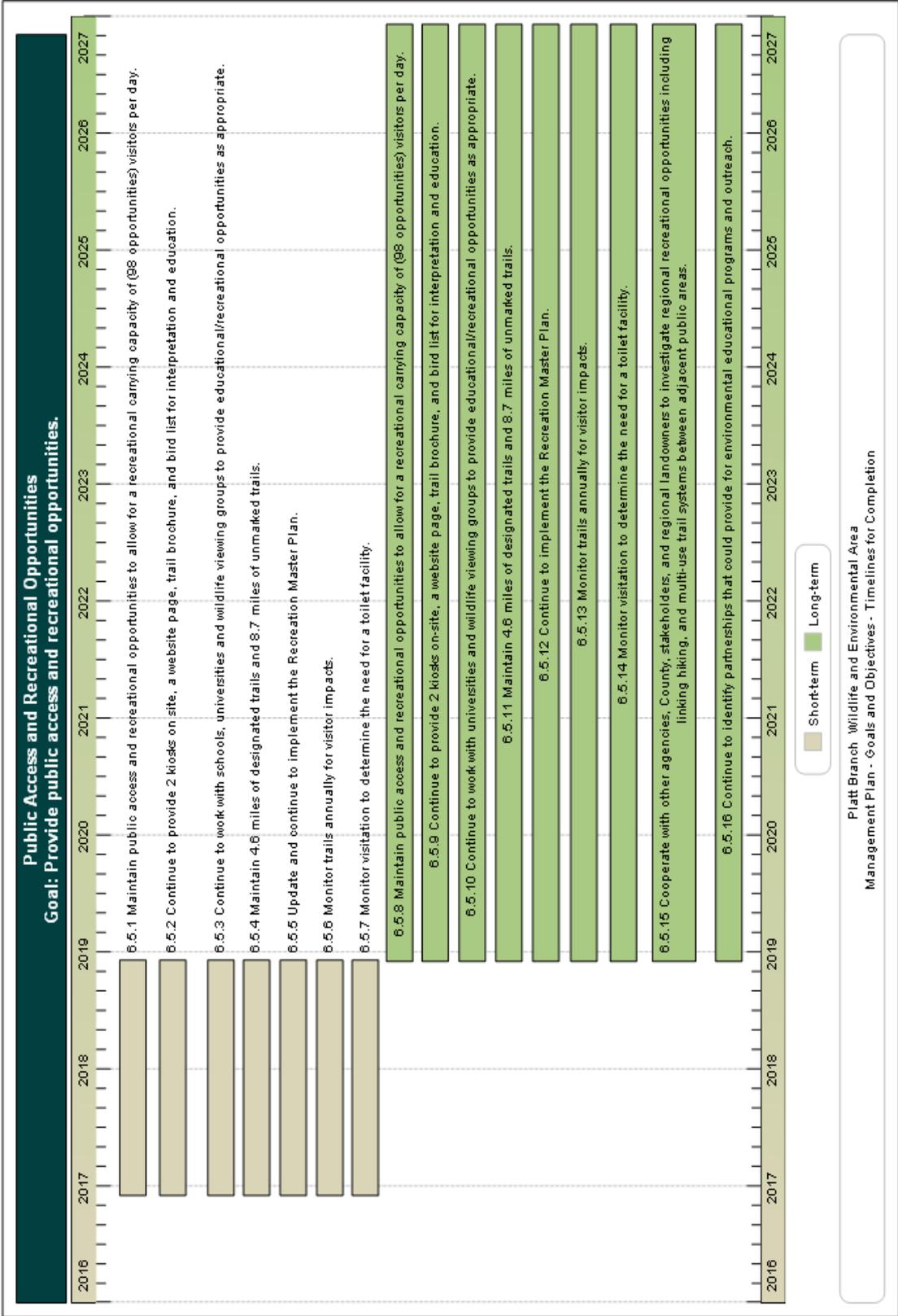


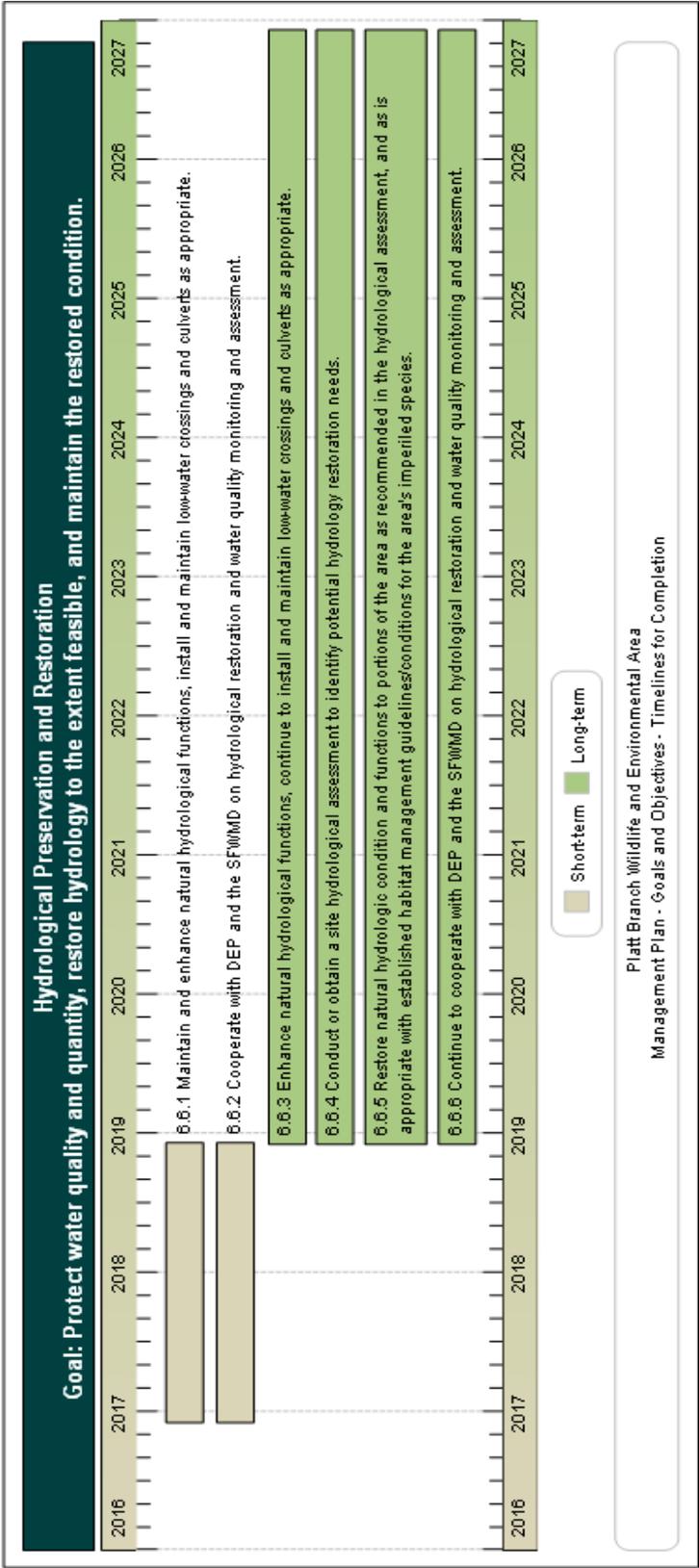
Platt Branch Wildlife and Environmental Area
 Management Plan - Goals and Objectives - Timelines for Completion

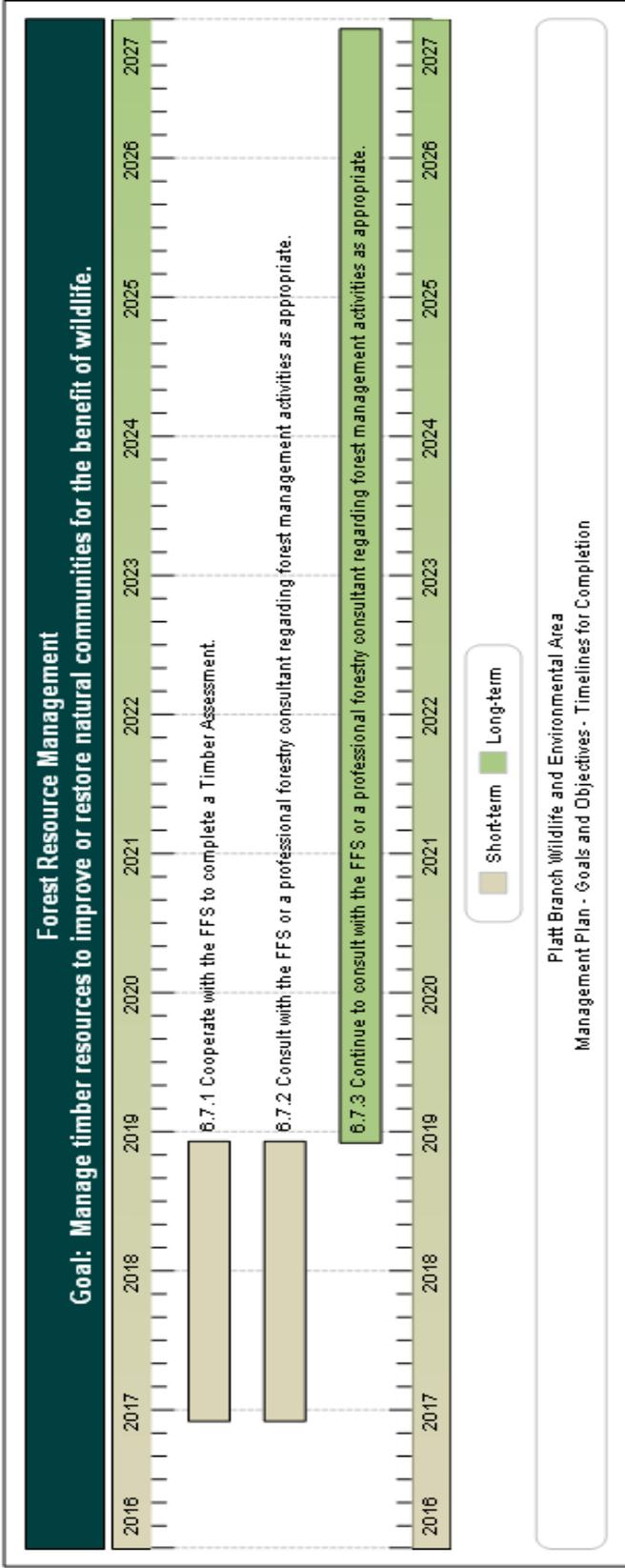


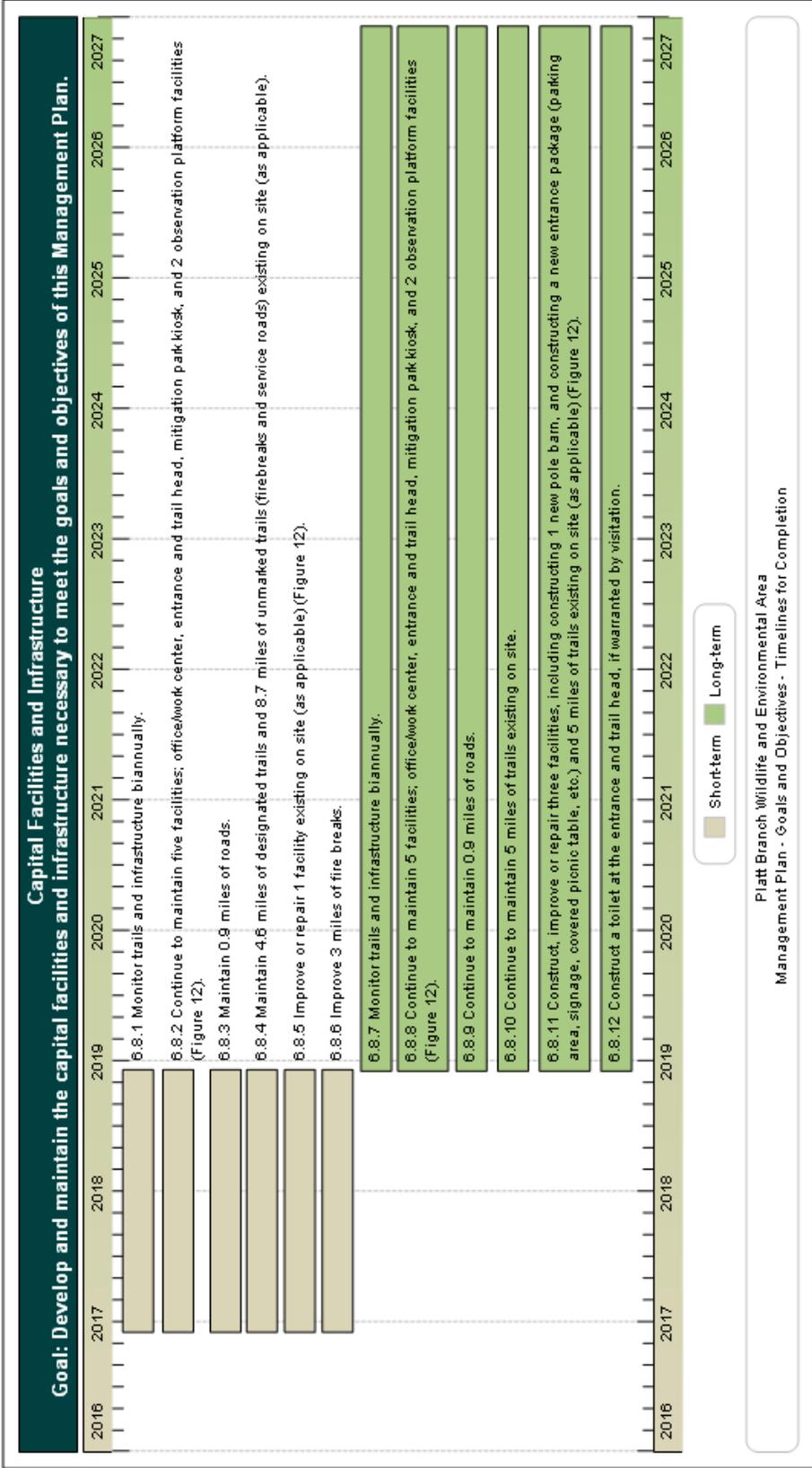


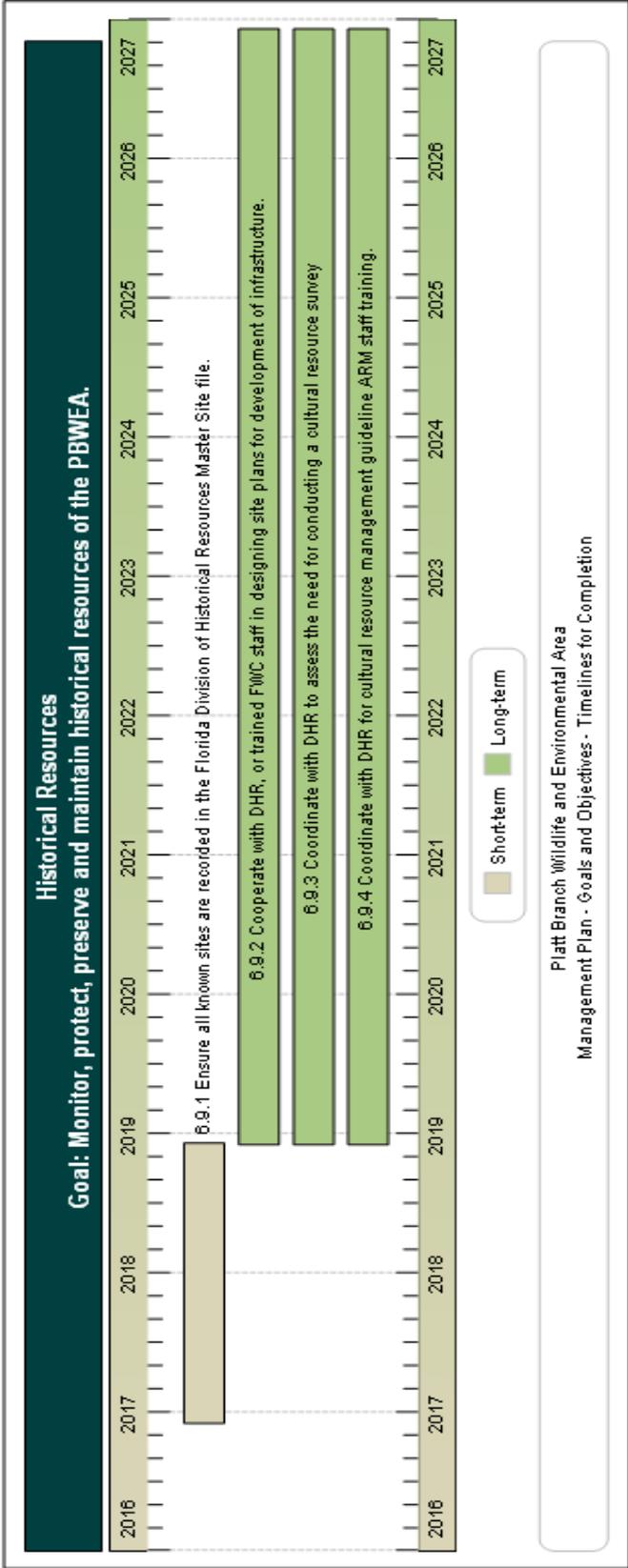


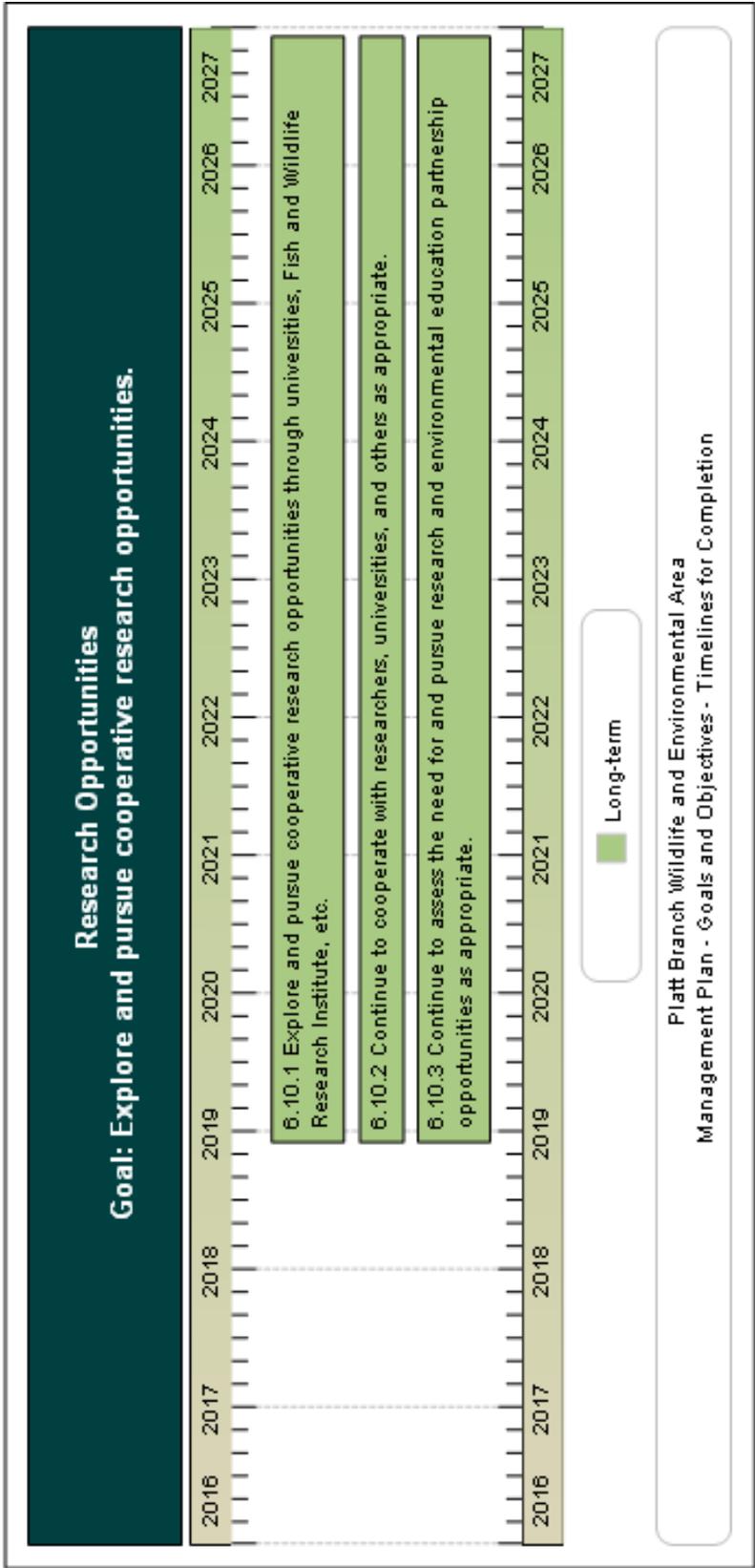


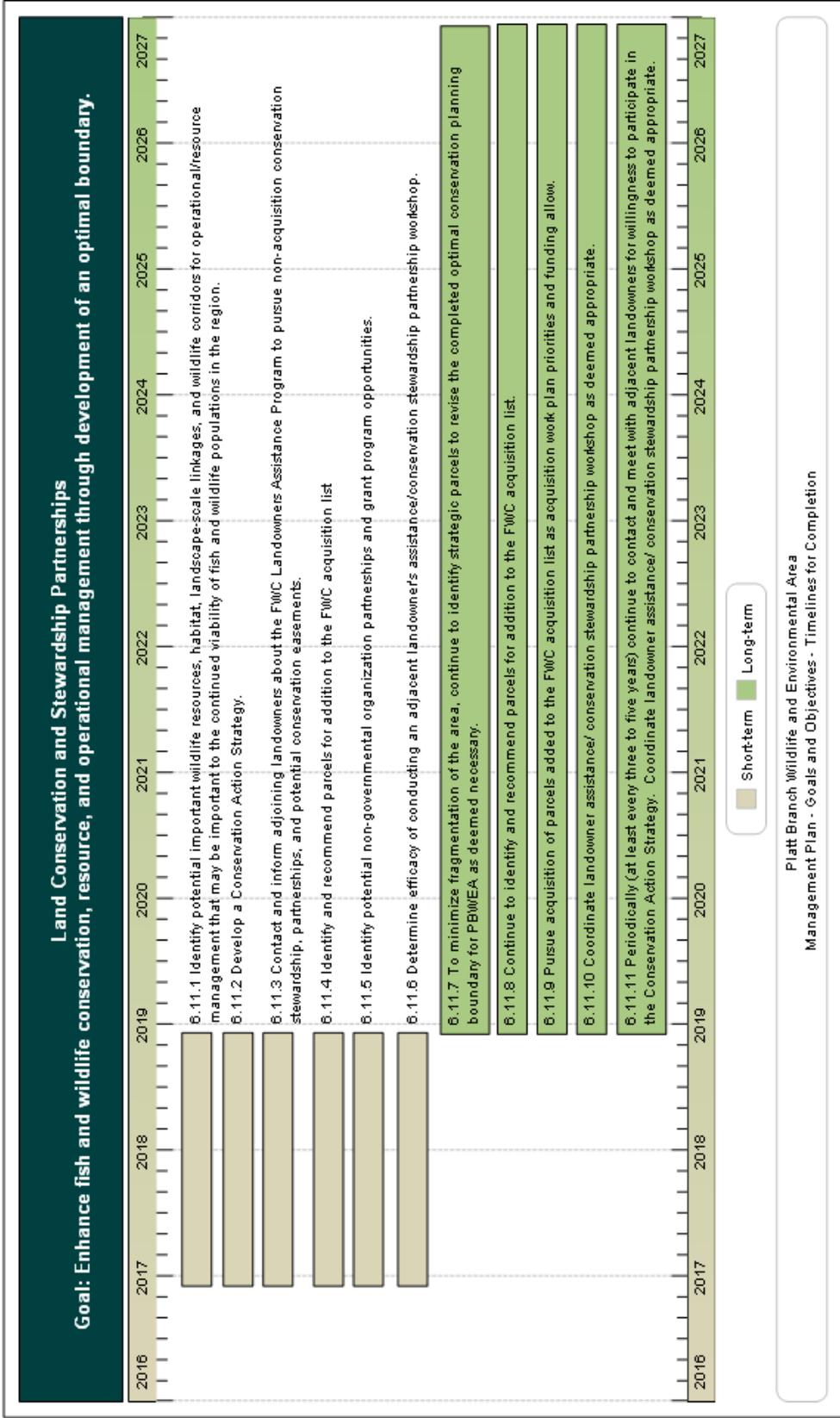


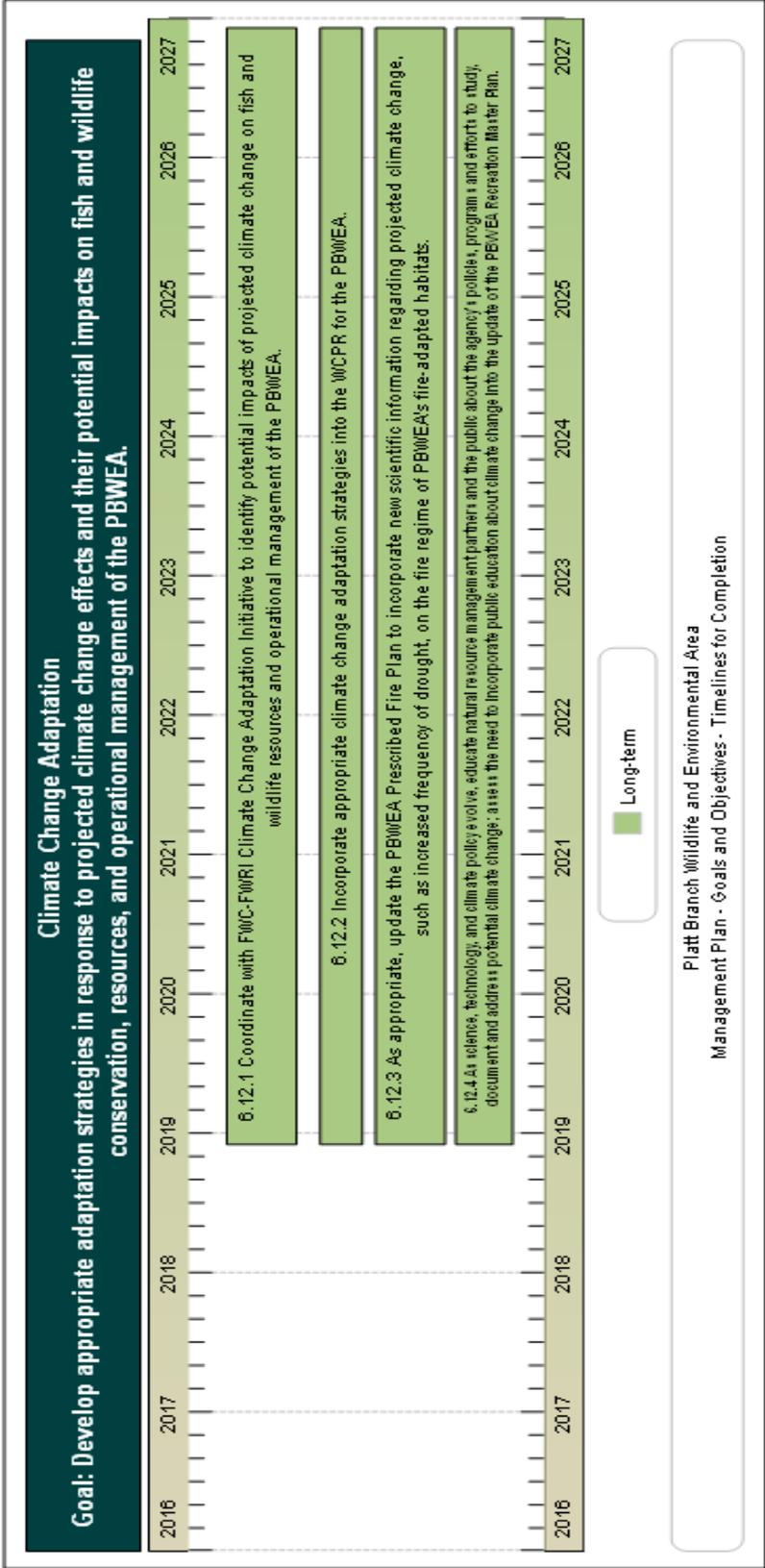


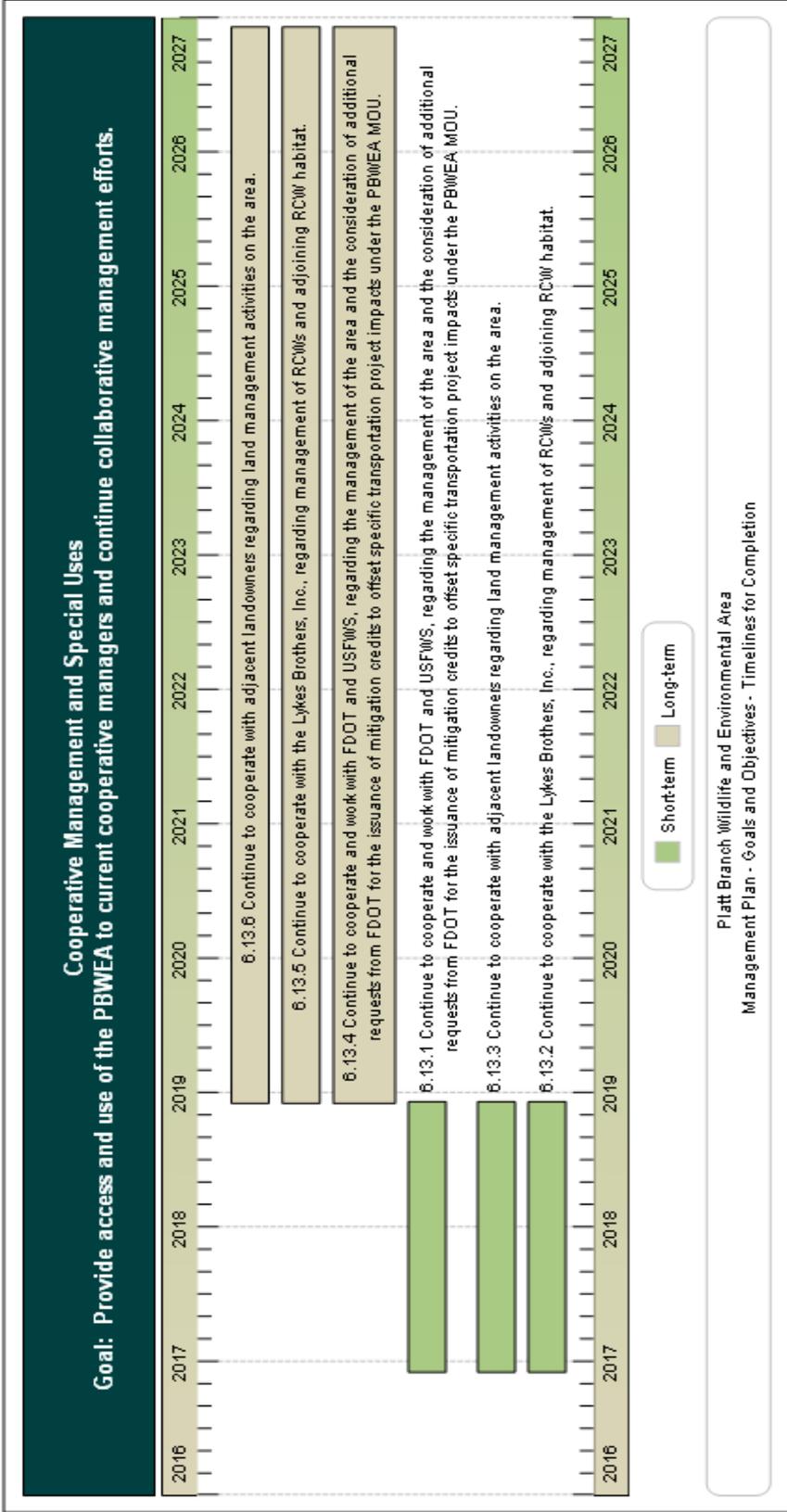












8 Resource Management Challenges and Strategies

The following section identifies problems, further describes management needs and challenges associated with the PBWEA, and provides solution strategies that will address these issues. These specific challenges are provided to supplement the broader management intent and goals and objectives sections of this management plan found above (Section 6 and 7).

8.1 Challenge: Currently PBWEA has insufficient habitat to sustain certain imperiled species and preclude biological isolation, such as the Florida scrub jay, Red-cockaded woodpecker, and Eastern indigo snake.

8.1.1 Strategy: Pursue conservation efforts to increase potential viable habitat on surrounding lands for these species.

8.1.2 Strategy: Utilize translocation for species such as RCWs to maintain viability.

8.1.3 Strategy: Cooperate and coordinate with surrounding landowners to assist with the resource management activities.

8.2 Challenge: Certain management units are difficult to access due to wet conditions.

8.2.1 Strategy: Utilize stabilization material to improve access.

8.2.2 Strategy: Request funding for obtaining a Swamp Buggy to assist with management actions.

8.3 Challenge: Currently there are high densities of exotic species on adjacent lands including but not limited to old world climbing fern and aquatic soda apple providing an extensive source of seed that disperses onto the PBWEA.

- 8.3.1 Strategy: Coordinate with the local Cooperative Invasive Species Management Area (CISMA), FWC's Uplands Invasive Plant Species Section, and FWC's Landowner Assistance Program to work with adjacent landowners to control and manage exotic invasive plants on adjacent properties.
- 8.3.2 Strategy: Work with neighboring land owners through FWC private lands personnel to treat Lygodium.
- 8.3.3 Strategy: Coordinate with other governmental and private organizations to obtain resources to control and manage exotic invasive species on adjacent properties.

8.4 Challenge: PBWEA is not a widely known recreational destination.

- 8.4.1 Strategy: Work with Highlands County Tourism Development Council to promote PBWEA.
- 8.4.2 Strategy: Cross promote PBWEA with other regional conservation lands.

8.5 Challenge: The irregular management boundary on the NE portion of the area, proposes management challenges.

- 8.5.1 Strategy: Utilize mechanical treatments to reduce fuels and improve habitat as preparation for burning and sometimes in place of burning.
- 8.5.2 Strategy: Request funding to acquire adjacent lands to establish a more manageable boundary.
- 8.5.3 Strategy: Designate some areas as buffer which will be managed on an altered regime, such as longer burn intervals.
- 8.5.4 Strategy: Maintain a good working relationship with neighbors to plan for and explain management actions.

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

- 8.6.1 Strategy: Cooperate and work with Highlands County to ensure land use and zoning designations adjacent to PBWEA will continue to be compatible with the management of the area.

8.7 Challenge: There is a two-acre inholding within PBWEA that contains a cemetery of which ownership is known.

8.7.1 Strategy: Encourage owners to list the cemetery in the Florida Master Site File.

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

8.7.3 Strategy: Maintain inholding within the OCPB.

8.8 Challenge: Currently there is insufficient staffing for PBWEA to maintain optimal resource and operational management of the area.

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

8.8.2 Strategy: Request additional funding for an additional position.

8.8.3 Strategy: Use contractual services for appropriate activities.

8.9 Challenge: Currently, FWC has insufficient resources to perform water quality monitoring, on PBWEA, therefore it cannot be determined if water quality is improving over time.

8.9.1 Strategy: Pursue funding for water quality assessment and ongoing monitoring.

9 Cost Estimates and Funding Sources

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

The cost estimate below, although exceeding what 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 PBWEA. 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 13.12.

Platt Branch WEA Management Plan Cost Estimate

Maximum expected one year expenditure

<u>Resource Management</u>	<u>Expenditure</u>	<u>Priority</u>	Priority schedule:
Exotic Species Control	\$141,165	(1)	(1) Immediate (annual)
Prescribed Burning	\$107,354	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	\$3,909	(1)	(3) Other (5+ years)
Timber Management	\$3,909	(1)	
Hydrological Management	\$5,543	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	\$119,753	(1)	
Subtotal	\$381,633		
<u>Administration</u>			
General administration	\$32,175	(1)	
<u>Support</u>			
Land Management Planning	\$8,089	(1)	
Land Management Reviews	\$4,312	(3)	
Training/Staff Development	\$0	(1)	
Vehicle Purchase	\$241,707	(2)	
Vehicle Operation and Maintenance	\$16,283	(1)	
Other (Technical Reports, Data Management, etc.)	\$1,425	(1)	
Subtotal	\$271,816		
<u>Capital Improvements</u>			
New Facility Construction	\$82,117	(2)	
Facility Maintenance	\$125,101	(1)	
Subtotal	\$207,217		
<u>Visitor Services/Recreation</u>			
Info./Education/Operations	\$5,258	(1)	
<u>Law Enforcement</u>			
Resource protection	\$0	(1)	
<u>Total</u>	\$898,099	*	

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

Platt Branch WEA Management Plan Cost Estimate

Ten-year projection

<u>Resource Management</u>	<u>Expenditure</u>	<u>Priority</u>	Priority schedule:
Exotic Species Control	\$1,240,293	(1)	(1) Immediate (annual)
Prescribed Burning	\$943,223	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	\$34,345	(1)	(3) Other (5+ years)
Timber Management	\$34,345	(1)	
Hydrological Management	\$48,698	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	\$1,052,164	(1)	
Subtotal	\$3,353,070		
<u>Administration</u>			
General administration	\$282,689	(1)	
<u>Support</u>			
Land Management Planning	\$71,070	(1)	
Land Management Reviews	\$12,344	(3)	
Training/Staff Development	\$0	(1)	
Vehicle Purchase	\$850,576	(2)	
Vehicle Operation and Maintenance	\$143,067	(1)	
Other (Technical Reports, Data Management, etc.)	\$12,518	(1)	
Subtotal	\$1,089,575		
<u>Capital Improvements</u>			
New Facility Construction	\$237,193	(2)	
Facility Maintenance	\$1,099,149	(1)	
Subtotal	\$1,336,342		
<u>Visitor Services/Recreation</u>			
Info./Education/Operations	\$46,197	(1)	
<u>Law Enforcement</u>			
Resource protection	\$0	(1)	
<u>Total</u>	\$6,107,872	*	

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

10 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			✓

11 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 PBWEA 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 13.7). Such uses also comply with the authorities of the FWC as derived from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters, 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 PBWEA in compliance with Chapter 388.4111 F.S. (Appendix 13.13). This plan was developed in cooperation with the local Highlands County arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Highlands County, Florida, (Appendix 13.15).

12 Endnotes

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