A Management Plan for

Box-R

Wildlife Management Area

2016 - 2026

Franklin and Gulf counties, 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: Box R Wildlife Management Area - Lease #4454

Dear Mr. Houston:

On **February 17, 2017**, the Acquisition and Restoration Council recommended approval of the **Box R Wildlife Management 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 **Box R Wildlife Management 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,

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

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A Management Plan
for
Box-R Wildlife Management Area

Franklin and Gulf counties, Florida

Owned by the Board of Trustees of the Internal Improvement Trust Fund

Managed by the Florida Fish and Wildlife Conservation Commission

September 2016

Approved _____

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

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LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)
Common Name of Property: Box-R Wildlife Management Area
Location: Gulf and Franklin counties, Florida
Acreage Total: 11,216 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Basin marsh	6.7	0.1%
Basin swamp	57.3	0.5%
Dome swamp	123.3	1.1%
Floodplain marsh	1,499.0	13.4%
Floodplain swamp	2,043.6	18.2%
Hydric hammock	200.9	1.8%
Mesic flatwoods	380.3	3.4%
Mesic hammock	71.0	0.6%
Pine plantation	3,750.8	33.5%
Restoration dome swamp	7.1	0.1%
Restoration mesic flatwoods	224.7	2.0%
Restoration scrubby flatwoods	6.5	0.1%
Restoration wet flatwoods	273.0	2.4%
Restoration wet prairie	487.7	4.4%
Ruderal	89.9	0.8%
Sandhill	7.6	0.1%
Scrubby flatwoods	47.5	0.4%
Shrub bog	1,698.1	15.1%
Wet flatwoods	234.6	2.1%
Xeric hammock	6.0	0.1%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.
Lease/Management Agreement No.: 4454 (Appendix 13.1)
Use: Single _____ Multiple X
Management Responsibilities: Agency FWC
Responsibilities LEAD, (Wildlife Management Area, Resource Protection, Public Use, Law Enforcement)
Designated Land Use: Wildlife Management Area
Sublease (s): Sublease #05072 (to Franklin County for Boat Launch Facility)
Encumbrances: Progress Energy power line easement
Type Acquisition: DEP Florida Forever and FWC Florida Forever Inholdings and Additions Acquisition Programs
Unique Features: Natural: Lake Wimico, Jackson River, Huckleberry Creek, Pine Log Creek, floodplain swamps, freshwater marshes and wet prairie.
Archaeological/Historical: Huckleberry Landing, Box-R Ranch Shed, Shell Mound plus 16 additional sites identified (Appendix 13.7).
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: Several parcels, totaling 30,597.89 acres, are listed in the FWC Additions and Inholdings list.
Surplus Lands/Acreage: None
Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 13.2)

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

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

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

Section A: Acquisition Information Items			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1	The common name of the property.	18-2.018 & 18-2.021	ii, 1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	ii, 3, 5
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	ii, 6
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	ii, 6, 11, 136
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	10, 109
6	An **assessment** as to whether the property, or any portion, should be declared surplus. *Provide Information regarding **assessment and analysis** in the plan, and provide **corresponding map**.*	18-2.021	60
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. *Please clearly indicate parcels on a map.*	18-2.021	87-88
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	8-9, 60
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)	1, 3-6
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	6-8, 12

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	57-60
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	53-56
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	57-60
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	5-6, 90-91
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	52-53

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	132
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)	58-60, 79
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	133
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	605-607
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	60
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	57-58
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	83-84, 459-518
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	60

*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	9, 186-300
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)	229-275
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032(10)	9, 187-288
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	187-288
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	9, 276-279
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	409-458
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	409-458
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	N/A

Section D: Natural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. *Use brief descriptions and include USDA maps when available.*	18-2.021	15-17, 301-312
33	Insert FNAI based natural community maps when available.	ARC consensus	37
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	16, 46-53

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	ii, 51-53
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	52
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	52
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	38-50
39	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	38-50
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	48-50, 313-314
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)	68-96
42	Habitat Restoration and Improvement	259.032(10) & 253.034(5)	70-74, 96-97
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.	↓	84, 96-97
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.		96-127
42-C.	The associated measurable objectives to achieve the goals.		96-127
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. *Include fire management plans - they can be in plan body or an appendix.*		459-569
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.		129-131, 358-367
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	459-569
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	83-84
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		102-103

44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		102-103, 120
44-C.	Measurable objectives (see requirement for #42-C).		102-103, 120
44-D.	Related activities (see requirement for #42-D).		102-103, 120
44-E.	Budgets (see requirement for #42-E).		129-131, 358-367
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	75-78
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	97-98, 113
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		97-98, 113
45-C.	Measurable objectives (see requirement for #42-C).		97-98, 113
45-D.	Related activities (see requirement for #42-D).		97-98, 113
45-E.	Budgets (see requirement for #42-E).		129-131, 358-367
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	25
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	368-372
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5)	25, 78-79
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	99-100, 115
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		99-100, 115
48-C.	Measurable objectives (see requirement for #42-C).		99-100, 115
48-D.	Related activities (see requirement for #42-D).		99-100, 115
48-E.	Budgets (see requirement for #42-E).		129-131, 358-367

Section E: Water Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. *If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.*	18-2.018 & 18-2.021	51

50	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	51-52
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	51-52
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	51-52
53	Hydrological Preservation and Restoration	259.032(10) & 253.034(5)	82-83
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	102, 119
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		102, 119
53-C.	Measurable objectives (see requirement for #42-C).		102, 119
53-D.	Related activities (see requirement for #42-D).		102, 119
53-E.	Budgets (see requirement for #42-E).		129-131, 358-367

Section F: Historical, Archeological and Cultural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	52-53, 84, 350-357
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	52-53, 84, 350-357
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	52-53, 84, 350-357
57	Cultural and Historical Resources	259.032(10) & 253.034(5)	52-53, 84, 350-357
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	104-105, 122
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		104-105, 122
57-C.	Measurable objectives (see requirement for #42-C).		104-105, 122
57-D.	Related activities (see requirement for #42-D).		104-105, 122
57-E.	Budgets (see requirement for #42-E).		129-131, 358-367

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

Section G: Facilities (Infrastructure, Access, Recreation)			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. *See footnote.*	253.034(5)	85
59	Capital Facilities and Infrastructure	259.032(10) & 253.034(5)	84-85
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	103-104, 121
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		103-104, 121
59-C.	Measurable objectives (see requirement for #42-C).		103-104, 121
59-D.	Related activities (see requirement for #42-D).		103-104, 121
59-E.	Budgets (see requirement for #42-E).		129-131, 358-367
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	84-85
61	Public Access and Recreational Opportunities	259.032(10) & 253.034(5)	79-82
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	100-101, 117
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		100-101, 117
61-C.	Measurable objectives (see requirement for #42-C).		100-101, 117
61-D.	Related activities (see requirement for #42-D).		100-101, 117
61-E.	Budgets (see requirement for #42-E).		129-131, 358-367

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	iiii-xiii
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	ii
64	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	60-68
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	68-73

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)	129-131, 358-367
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)	129-131, 358-367
68	A statement of gross income generated, net income and expenses.	18-2.018	57-58, 129-131, 358-367

*** = 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
ANR	Apalachicola Northern Railroad
ARC	Acquisition and Restoration Council
ARSA	Apalachicola River Stewardship Alliance
ARWEA	Apalachicola Wildlife and Environmental Area
BRWMA	Box-R Wildlife Management Area
CAS	Conservation Action Strategy
CISMA	Cooperative Invasive Species Management Area
CWD	Chronic Wasting Disease
DACS	Department of Agriculture and Consumer Services
DEO	Department of Economic Opportunity
DEP	Department of Environmental Protection
DOD	Department of Defense
DOT	Department of Transportation
DSL	Division of State Lands
EDRR	Early Detection and Rapid Response
F	Fahrenheit
FAC	Florida Administrative Code
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
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
GPS	Geographic Positioning System
GRASI	Gulf Regional Airspace Initiative
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
IWHRS	Integrated Wildlife Habitat Ranking System
LAP	Landowner Assistance Program
LMR	Land Management Review
LMUAC	Land Management Uniform Accounting Council Biennial Land Management Operational Report
MAG	Management Advisory Group
MOA	Memo of Agreement
MSL	Mean Sea Level
NFWF	The National Fish and Wildlife Foundation
NPS	National Park Service
NRDA	Natural Resource Damage Assessment
NWFWMD	Northwest Florida Water Management District
OBVM	Objective-Based Vegetation Management
OCPB	Optimal Conservation Planning Boundary
OFW	Outstanding Florida Waters

ORB	Optimal Resource Boundary
ORV	Off-Road Vehicle
RESTORE Act	Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act
SHCA	Strategic Habitat Conservation Area
SJC	St. Joe Company
TNC	The Nature Conservancy
USAF	United States Air Force
USFS	United States Forest Service
WCPR	Wildlife Conservation Prioritization and Recovery
WMA	Wildlife Management Area

1 Introduction and General Information

Located just inland along Florida's "Forgotten" northwest Gulf coast in Franklin and Gulf Counties 2.5 miles west of historic town of Apalachicola, the Box-R Wildlife Management Area (BRWMA) fulfills an important function within a renowned and complex ecological system that includes Lake Wimico, the Apalachicola and Jackson rivers and Apalachicola Bay. The Apalachicola Bay Ecosystem has been designated as a United Nations International Biosphere site for its' vital role in sustaining ecological diversity. Conservation of the BRWMA aids in protecting the watershed and water quality of the Apalachicola River and Bay ecosystem and is an important element of sustaining this ecosystem which produces over 90 percent of Florida's oysters and is a major nursery for blue crabs and marine fishes.

Encompassing 11,216 acres in Franklin and Gulf counties, the BRWMA's diverse wildlife habitats, includes floodplain swamp, floodplain marsh, bottomland forest, and pine flatwoods that support significant populations of imperiled, rare and more prevalent wildlife species. Among others, these wildlife include the Florida black bear, wood stork, bobwhite quail, fat threeridge, Barbour's map turtle, gulf moccasinshell, oval pigtoe, purple bankclimber, osprey and southern bald eagle. Conserving the area's unique assemblage of tidal marshes, creeks, floodplain swamps, hammocks and pine uplands provides vital habitat for these and many other wildlife species.

Observant visitors to the area may catch a glimpse of the rails and wading birds in the floodplain marshes, while surrounding pine uplands host brown-headed nuthatches, eastern towhees, pine warblers, red-bellied, downy and pileated woodpeckers, and Bachman's sparrows. An abundance of resident and migratory birds frequent the area. Swallow-tailed and Mississippi kites, red-shoulder hawks, and wood ducks can all be observed in the area. Boaters may spot alligators, otters and a variety of turtle species. BRWMA's uplands are home to white-tailed deer, wild turkey, feral hog, raccoon, opossum, bobcats, and Eastern gray squirrels.

The BRWMA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) to conserve and restore natural habitat for imperiled, rare and more prevalent wildlife, and to provide high-quality opportunities for hunting, fishing, wildlife viewing, and other fish

and wildlife-based public outdoor recreation opportunities including horseback-riding, boating and hiking.

The FWC is responsible for the operation of the BRWMA as a wildlife management area (WMA), as a provision of the lease agreement with the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees). Therefore, the FWC has lead management authority for all of the resources within the established boundary of the BRWMA.

1.1 Management Plan Purpose

This Management Plan serves as the basic statement of policy and direction for the management of BRWMA. It provides information including the past usage, conservation acquisition history, and descriptions of the natural and historical resources found on BRWMA. 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 BRWMA's management for the next ten years.

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the Board of Trustees of the Internal Improvement through the Florida Department of Environmental Protection's Division of State Lands (DEP)(DSL), in compliance with paragraph seven of Lease No. 4454 (Appendix 13.1) and pursuant to Chapters 253 and 259, 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 13.8) 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 (LMUAC).

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 (MAG) and solicits additional input from user groups and the general public at a public hearing (Appendix 13.2). The FWC also engages area, district, and regional agency staff, as well as other FWC staff expertise, in developing this Management Plan, thereby facilitating area biologist and manager "ownership" of the Management Plan, and thus the development of meaningful management intent language, goals with associated measurable objectives, timelines for completion, and the identification of challenges and solution strategies for inclusion in the BRWMA Management Plan (Sections 5 – 8).

Further management planning input is received through Land Management Reviews (LMR) conducted every five years, which includes a review of the previous Management Plan, as well as a field review of BRWMA. The LMR report (Section 5.1, Appendix 13.11) provides FWC staff with important information and guidance provided by a diverse team of land management auditors, and communicates the recommendations of the LMR team to FWC so they may be adequately addressed in this Management Plan, and thus guide the implementation of the LMR team recommendations on BRWMA.

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, BRWMA is located approximately 2.5 miles northwest of Apalachicola, 9.5 miles southeast of Port St. Joe, and 37 miles southeast of Panama City. The BRWMA occupies 11,216 total acres and is located in western Franklin and extreme eastern Gulf counties. Lake Wimico and the Jackson River bound much of the area's northern boundary. US Highway 98 is on the area's southern boundary (Figure 1).

The BRWMA is located within Sections 21, 28, 29, and 31, in Township 8 South, Range 8 West and Section 6, in Township 9 South, Range 8 West; Sections 24, 25, 26, 33, 34 and 35, Township 8 South, Range 9 West Section, of Section in, forms the western boundary of the BRWMA which is adjacent to the St. Vincent Sound to Lake Wimico Unit of the St. Joe Timberland Florida Forever Project (Figure 2). There are a number of privately-owned inholdings located in Sections 6, 16, 21 and 31.

1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

The BRWMA was acquired as part of the Lake Wimico Unit of the larger St. Joe Timberland Florida Forever Project. The principal purposes of the St. Joe Timberland Florida Forever Project are:

1) To conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of Florida or a larger geographic area;

2) To conserve and protect native species habitat or state and federally listed species;

3) To conserve, protect, manage, or restore important ecosystems, landscapes, and forests, if the protection and conservation of such lands are necessary to enhance or protect significant surface water, ground water, coastal, recreational, timber, or fish or wildlife resources which cannot otherwise be accomplished through local and state regulatory programs; and

4) To provide areas, including recreational trails, for natural resource based recreation and other outdoor recreation on any part of any site compatible with conservation purposes.

More specifically, the purposes also include to help preserve large undeveloped tracts of land for native plants and animals, and to give the public an opportunity to experience large natural areas throughout northern Florida. Also, the purposes for acquisition of the BRWMA include protecting and promoting old growth conditions in floodplain forests, enhancement of water quality by restoring natural hydroperiods, and promotion of a diversity of wildlife habitats. Other original purposes of acquisition of BRWMA include restoration of disturbed areas to native vegetative communities, and to provide quality natural resource-based public outdoor recreational opportunities.

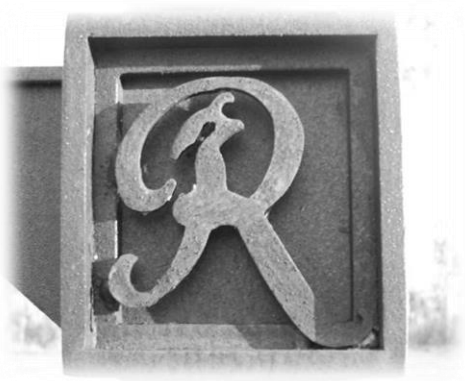
Additionally, the BRWMA and surrounding Florida Forever project lands is designated by the FWC as a Strategic Habitat Conservation Area (SHCA) for the Florida black bear and swallow tailed kite, as a biodiversity hotspot, and therefore, FWC determined its acquisition was critical to the conservation of numerous imperiled, rare and more prevalent wildlife species. The BRWMA was also the first parcel acquired within the proposed Northwest Florida Greenway. Accordingly, the FWC manages the area in conformance with these original acquisition purposes.

The 50-year Board of Trustees' lease agreement with FWC directs the agency 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 18-2.004(1) (d), FAC, which have been selected, developed, or approved for the protection and enhancement of the leased premises."

1.3.2 Acquisition History

As noted above, the BRWMA encompasses 11,216 acres in Franklin and Gulf counties. The initial acquisition of lands within what is now the BRWMA was obtained when The Nature Conservancy (TNC), acting as an acquisition intermediary for the State, acquired 7,597 acres from the St. Joe Timber Company (SJC) in April, 2003. Subsequently, in December of 2003, the FWC and DEP jointly acquired the original 7,597 acres of the BRWMA from TNC through the FWC's Florida Forever Additions and Inholdings Acquisition Program and the DEP's Florida Forever Program, respectively, as part of the Lake Wimico Unit of the St. Joe Timberland Florida Forever Project. This acquisition comprised the initial establishment boundary of the area in April of 2004, after receiving a lease for the area from the DEP. In April 2005, an 800 acre tract of the Apalachicola River Wildlife and Environmental Area (ARWEA), contiguous to BRWMA was added to the established BRWMA boundary. In January 2009, the most recent addition to the area occurred when the DEP acquired an additional 2,819 acres of land within the Lake Wimico Preserve Unit of the St. Joe Timberland Florida Forever Project from the SJC.



1.4 Management Authority

The FWC is the designated lead managing agency for BRWMA under the authority granted by Lease Number 4454 from the Board of Trustees agent, DSL. Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870 and of the FS. 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 4454 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 state-owned conservation lands within the BRWMA is vested in the Board of Trustees. In June of 2004, DSL, as staff to the Board of Trustees, entered into Lease Agreement Number 4454, a 50 year lease agreement, granting FWC management authority for BRWMA. Subsequent additions the area have been leased to FWC as amendments to Lease Number 4454 by the DSL.

Florida Power Corporation, a Florida corporation, now called Duke Energy Florida, Inc., holds a 100-foot wide power line easement on BRWMA. The easement is located in Sections 5 and 6, Township 9 South, Range 8 West, lying 50-feet each side of an existing power transmission line and contains approximately 9 acres. A railroad right-of-way and tracks owned by Apalachicola Northern Railroad Company (ANR), an affiliate of SJC, bisects the property in an east to west direction. The ANR has leased control of the right-of-way and facilities to operate the railroad. The acquisition agreement requires that the Board of Trustees be granted easements necessary to insure perpetual legal and practical vehicular and pedestrian ingress and egress over the railroad track at each existing grade crossing. The acquisition agreement also provides that, new owners, Deseret Ranches of North Florida, LLC, formally SJC ,will reserve to itself and grant to the Board of Trustees a road easement that allows both parties use of the dirt road along the western boundary.

Additionally, FWC has entered into a sublease with Franklin County for establishment and operation of the Henry Abercrombie Jr., Public Boat Ramp. Additionally, there is a flowage easement in favor of the City of Apalachicola that covers approximately 35 acres of BRWMA near the headwaters of Huckleberry Creek. The FWC has determined that the existing encumbrances and associated easements do not impose any impediments to managing the property within BRWMA.

1.7 Proximity to Other Public Conservation Lands

As noted above, the BRWMA is part of an extensive network of conservation lands, including lands managed by the Federal government, the NWFWMD, FWC, FFS, DEP, Franklin and Gulf counties, and the City of Apalachicola. Federally owned properties in the vicinity include St. Vincent National Wildlife Refuge lands that are south of the BRWMA. Additionally, a number of Florida Forever projects (Figure 3), are also located in the vicinity of the area.

Tables 1 lists conservation lands within a 15-mile radius of the BRWMA, including lands managed by public and private entities, that conserve historical and natural resources. Table 2 lists the Florida Forever projects within the vicinity of the area.

Most of the conservation lands listed in Table 1 are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned and being managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land.

Table 1. Conservation Lands within 15 miles of BRWMA

Federal Government	**Managing Agency**
Apalachicola National Forest	USFS
Eglin Air Force Base Cape San Blas Satellite Property	USDOD
St. Vincent National Wildlife Refuge	USFWS
State of Florida	**Managing Agency**
Tate's Hell State Forest	FFS
Constitution Convention Museum State Park	FDEP-RP
Dr. Julian G. Bruce St. George Island State Park	FDEP-RP
John Gorrie Museum State Park	FDEP-RP
Orman House Historic State Park	FDEP-RP
T.H. Stone Memorial St. Joseph Peninsula State Park	FDEP-RP
Apalachicola National Estuarine Research Reserve	FDEP-FCO
Cape St. George State Reserve	FDEP-FCO
St. Joseph Bay State Buffer Preserve	FDEP-FCO
Apalachicola River Wildlife and Environmental Area	FWC
Tate's Hell Wildlife Management Area	FWC
County/City	**Managing Agency**
Salinas Park	Gulf County
Water Management District	**Managing Agency**
Apalachicola River Water Management Area	NWFWMD
Private/Public Conservation Organization	**Managing Agency**
Eastpoint Preserve	TNC

Acronym Key	**Agency Name**
USFS	US Dept. of Agriculture, Forest Service
USDOD	US Dept. of Defense, Air Force
USFWS	US Dept. of the Interior, Fish and Wildlife Service
FFS	FL Dept. of Agriculture and Consumer Services, Florida Forest Service
FDEP-RP	FL Dept. of Environmental Protection, Div. of Recreation and Parks
FDEP-FCO	FL Dept. of Environmental Protection, Florida Coastal Office
FWC	FL Fish and Wildlife Conservation Commission
NWFWMD	Northwest Florida Water Management District
TNC	The Nature Conservancy

Table 2. Florida Forever Projects within 15 miles of BRWMA

Site Name	GIS Acres
St. Joe Timberland Florida Forever Project - St. Vincent Sound-to-Lake Wimico	49,822.4
St. Joe Timberland Florida Forever Project - St. Joseph Bay Buffer	3,030.1
St. Joe Timberland Florida Forever Project - Lake Wimico	25,188.3
Pierce Mound Complex Florida Forever Project	649.5

1.8 Adjacent Land Uses

As noted above, the BRWMA is located in the rural counties of Franklin and Gulf that have relatively low population levels with similar population levels found in the surrounding counties. The U.S. Census Bureau estimated the population of Franklin County to be 11,554 in 2013. According to the Bureau of Economic and Business Research's (BEBR). According to BEBR's medium-range population projections for the year 2025, Franklin County will have a population of 11,700 people. The BEBR's population projections for the counties surrounding Franklin County for the year 2025 are as follows: Gulf County-16,500; Liberty County-9,700; Wakulla County-36,400.

Consequently, the BEBR does not project a steep population growth for Franklin and Gulf counties or in the surrounding area. The BRWMA is primarily surrounded by conservation lands, agricultural lands, vacant residential parcels and a lake. The closest metropolitan area, Panama City is located approximately 54 miles northwest from the BRWMA, so minimal impacts from future developments near the area are projected.

The BRWMA is located outside of the incorporated Planning Area of Gulf and Franklin counties. Both Gulf and Franklin counties have lands within BRWMA in the respective counties currently zoned as Conservation in the current Zoning and Future Land Use component of the each county's comprehensive plan. Conservation lands refers to areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water, floodplain management, fisheries management, or protection of vegetative communities or wildlife habitats.

In Franklin County, the BRWMA is bordered by rural residential lots approximately 2.5 acres in size or larger and agricultural lots. The City of Apalachicola water treatment spray field is also within close proximity. Much of the surrounding property to the north, south and southeast are conservation land including the ARWEA to the north, St. Vincent National Wildlife Refuge to the south and Apalachicola National Estuarine Research Reserve to the southeast.

In Gulf County, the area surrounding the BRWMA is currently zoned Agricultural. Agricultural land use designation refers to lands that support and allow activities which are predominately used for the cultivation of crops and livestock including cropland, pastureland, orchards, vineyards, nurseries, ornamental horticulture areas, groves, confined feeding operations, specialty farms, and silviculture (commercial forest).

1.9 Public Involvement

The FWC conducted the BRWMA Management Advisory Group (MAG) meeting in Eastpoint, Florida, on September 30, 2015, to obtain input from both public and private stakeholders regarding management of BRWMA. 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 BRWMA MAG, as well as a listing of participants, is included as Appendix 13.2.1. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Franklin County, on November 15th, 2015. The report of that hearing is also contained in Appendix 13.2.4. 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.

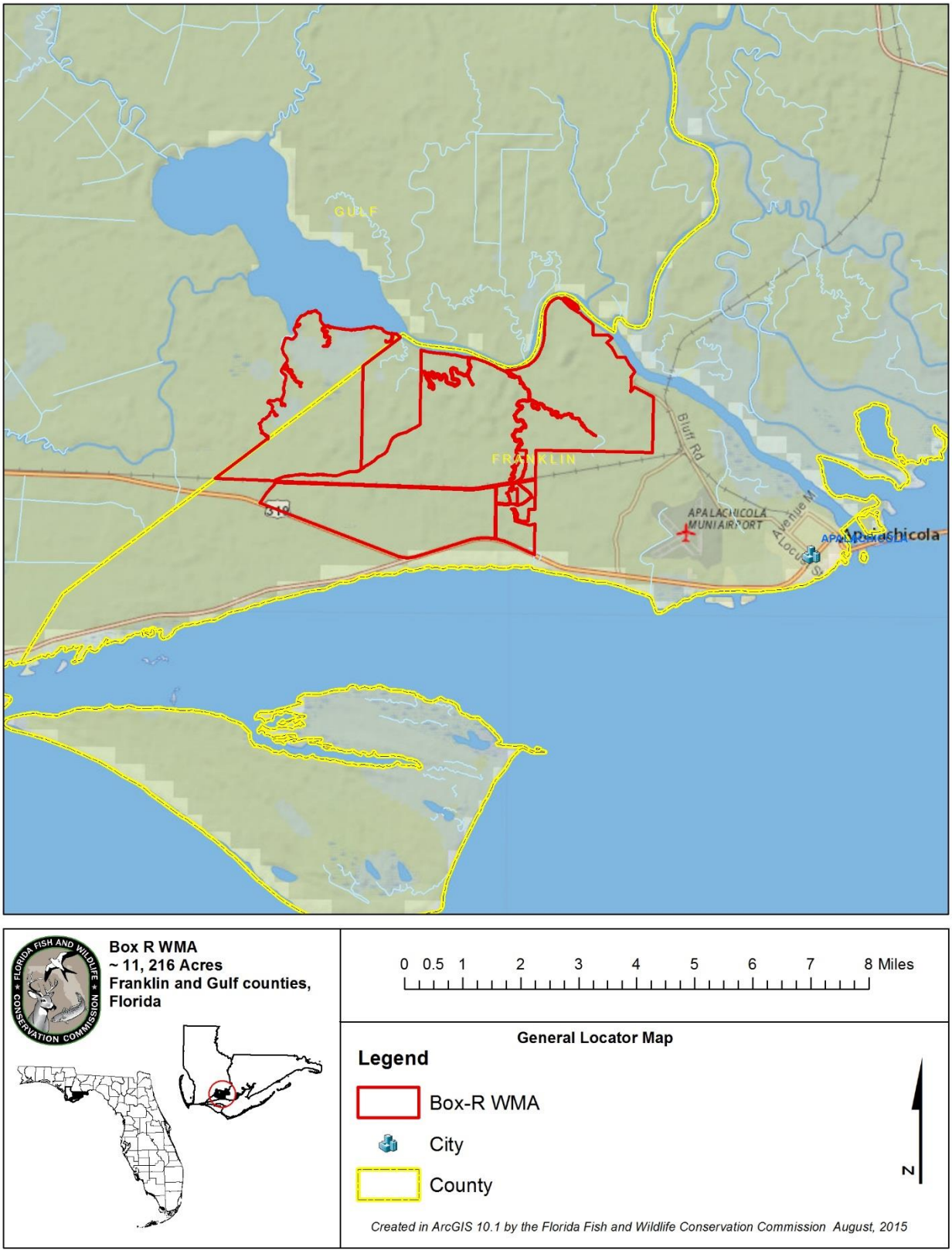


Figure 1. BRWMA Location Map

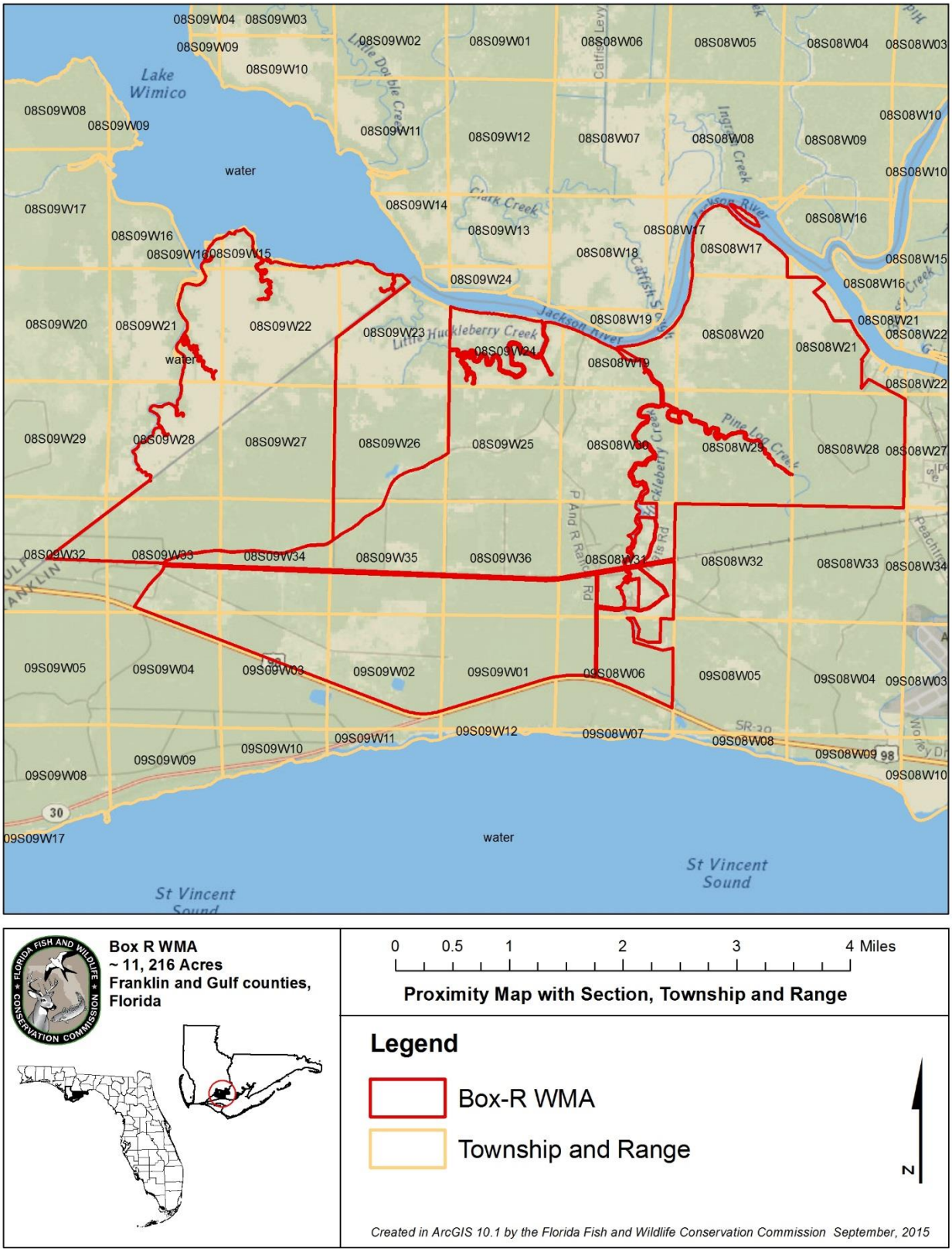


Figure 2. BRWMA Proximity Map with Township and Range

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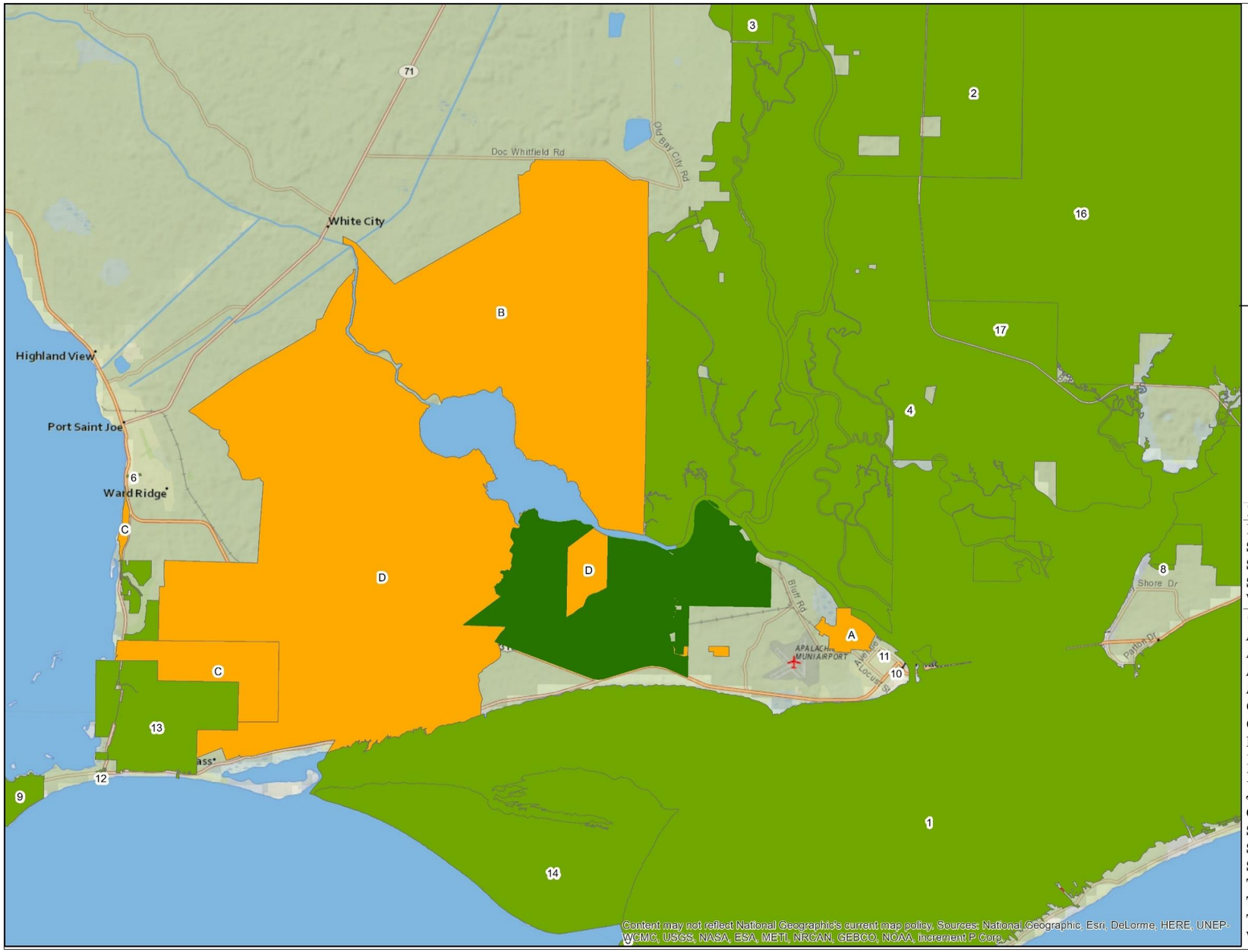

Florida Forever Project Name	Label
Pierce Mound Complex FFP	A
St. Joe Timberland FFP - Lake Wimico	B
St. Joe Timberland FFP - St. Joseph Bay Buffer	C
St. Joe Timberland FFP - St. Vincent Sound-to-Lake Wimico Ecosystem	D

Conservation Land	Label
Apalachicola National Estuarine Research Reserve	1
Apalachicola National Forest	2
Apalachicola River Water Management Area	3
Apalachicola River Wildlife and Environmental Area	4
Cape St. George State Reserve	5
Constitution Convention Museum State Park	6
Dr. Julian G. Bruce St. George Island State Park	7
Eastpoint Preserve	8
Eglin Air Force Base Cape San Blas Satellite Property	9
John Gorrie Museum State Park	10
Orman House Historic State Park	11
Salinas Park	12
St. Joseph Bay State Buffer Preserve	13
St. Vincent National Wildlife Refuge	14
T. H. Stone Memorial St. Joseph Peninsula State Park	15
Tate's Hell State Forest	16
Tate's Hell Wildlife Management Area	17
William J. Rish Recreational Park	18

Figure 3. Conservation Lands and Florida Forever Projects Near BRWMA

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2 Natural and Historical Resources

2.1 Physiography

The area of southwestern Franklin County and eastern Gulf County where BRWMA is located in the physiographic area known as the Gulf Coast Plain. It falls within the Apalachicola Embayment, which is principally fed by the Apalachicola River. The general Apalachicola River area is made up of floodplain forest, sawgrass marshes, and pine flatwoods, which are habitat to various plant and animal species. This area supports the highest diversity of amphibians and reptiles in North America as well as the greatest number of freshwater fish species in Florida The topography of the BRWMA is dictated by the extensive flat floodplain of the Apalachicola and Jackson rivers. Elevations range from six feet above mean sea level (MSL) in the uplands adjacent to the floodplain to sea level at the mouth of the Apalachicola River. Slopes are gradual where the floodplain intergrades into the adjacent uplands.

2.1.1 Climate

Gulf and Franklin counties have a moderate climate with long, warm, and humid summers and mild winters[2,3]. The Gulf of Mexico moderates temperatures year round, with greater influence in the coastal areas than inland. The average daily winter temperature is 55 degrees Fahrenheit (F), with an average minimum temperature of approximately 46 degrees F. The average daily summer temperature is 81 degrees F with an average maximum temperature of approximately 88 degrees F.

Average annual rainfall for Gulf and Franklin counties is approximately 61 inches. The majority of rainfall occurs during the summer rainy season, from June to September, averaging between 20-24 inches for both counties. In Franklin County, about 16 inches of rain, or 30 percent, falls in the winter rainy season, from late December through April. May, October and November are generally the driest months. In Gulf County, about 16 inches of rain, or 24 percent, falls January through March. October, November, and April are generally the driest months in Gulf County. Frequent thunderstorms occur during summer in both counties. These showers are occasionally heavy, but rarely last throughout the day. Thunderstorms occur on approximately 70 days each year and average between 2-4 days per week during the summer. Winter and spring rains are generally associated with continental weather developments and are of longer duration but less intensity than

summer rains. Heavy rain and high winds can accompany tropical disturbances and hurricanes that pass over the area.

2.1.2 Topography

The topography of the BRWMA is dictated by the extensive flat floodplain of Lake Wimico, the Apalachicola and Jackson rivers and Apalachicola Bay. Elevations range from six feet above MSL in the uplands adjacent to the floodplain, to sea level at the mouth of the river. Slopes are gradual where the floodplain intergrades into the adjacent uplands. Maximum elevation is 13 feet above MSL. There are levees, terraces, and flats contained in the bottomlands, although they occupy only a small fraction of the floodplain. Levee topography usually has a local relief of five to ten feet above MSL.

2.1.3 Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) data were used to identify the BRWMA's soil series and soil depth to water table (Figures 4 and 5). Twenty-six soil map units described in the soil survey of the BRWMA are distributed as shown in Figure 4. Analyses of depth to water table for map units occurring within the BRWMA are also provided in Figure 5. The NRCS defines a soil map unit as: "a collection of soil areas or non-soil areas (miscellaneous areas) delineated in a soil survey." Soil map units may contain multiple soil components, which are given names that are unique identifiers. Figure 4 provides aggregation data for BRWMA map units. Soils series descriptions may be found in Appendix 13.3.

The low-lying, poorly drained soils are underlain by a surficial aquifer system, an intermediate system, and the Floridan aquifer system, which is the main source of water for public supplies in the area. The surficial aquifer, approximately 40 feet in thickness, is composed of sand and clay. It is unconfined and recharged locally. Most of the soils of the area are poorly drained muck or extremely sandy. More specifically, it is either Rutlege fine sands or Scranton fine sand that are frequently flooded. Other large soil percentages include Aquents and Maurepas. Figure 4, the soils map, depicts the location of these soils within the area.

2.1.4 Geologic Conditions

The surface sediments at BRWMA are primarily Pleistocene/Holocene Alluvium sediments, described below. The geology of Franklin and Gulf counties, as reflected on the U.S. Department of Interior, United States Geological Survey's website (http://mrdata.usgs.gov/geology/state/fips-unit.php?code=f12037) is as follows:

Pleistocene/Holocene Formation

Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. In the Pleistocene/Holocene formation undifferentiated sediments at the surface covers 49% of Franklin County and 55% of Gulf County. 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. 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. Lithology: clay or mud; beach sand; silt; gravel; peat; sand.

Pleistocene/Holocene Formation-Beach ridge and dune

This formation covers 18% of Franklin County and 19% of Gulf County respectively. The composition of this formation mirrors the above described Pleistocene/Holocene formation in every respect with one primary exception; the lithology is composed of beach sand; clay or mud; and silt.

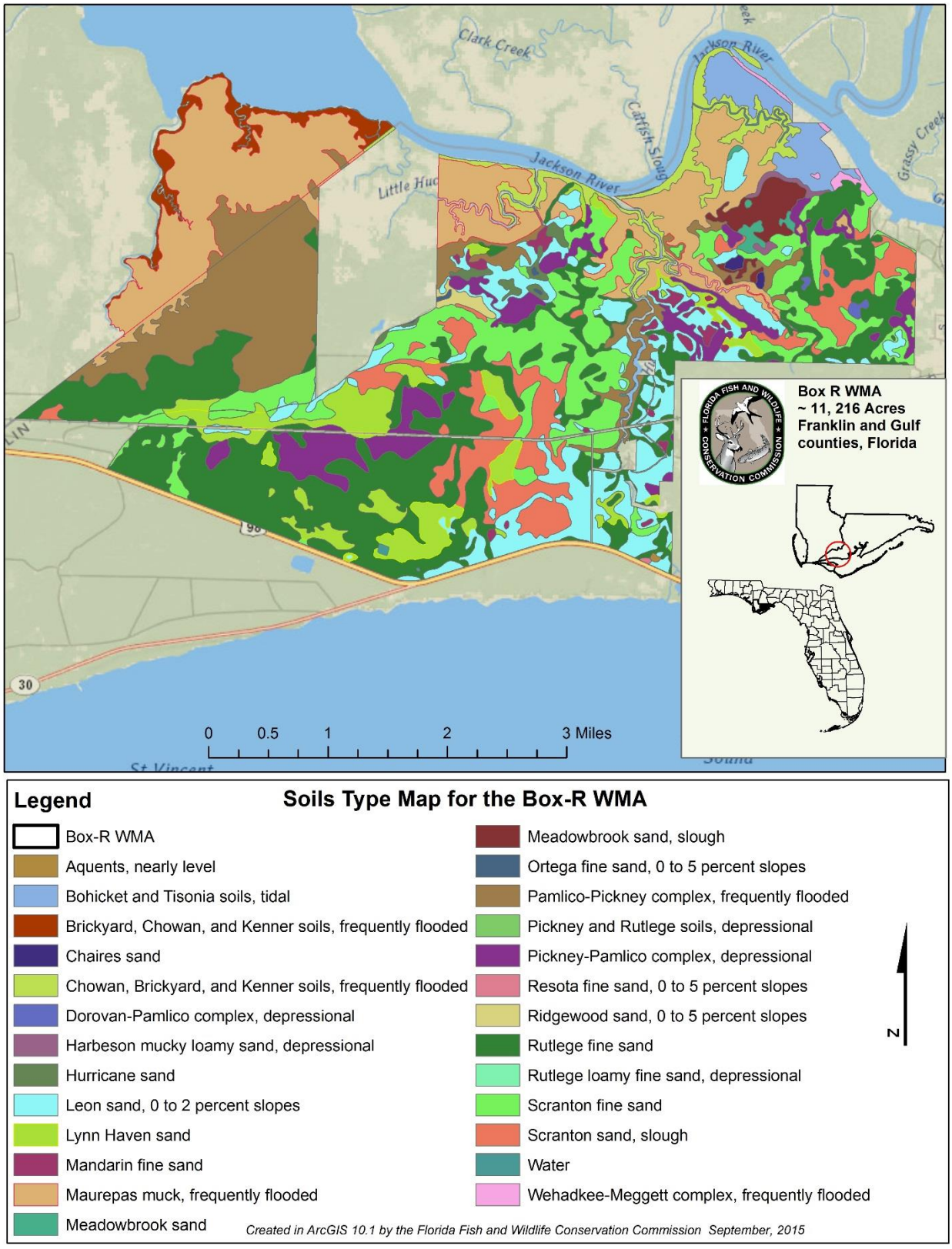

Figure 4. Soil types found at the BRWMA

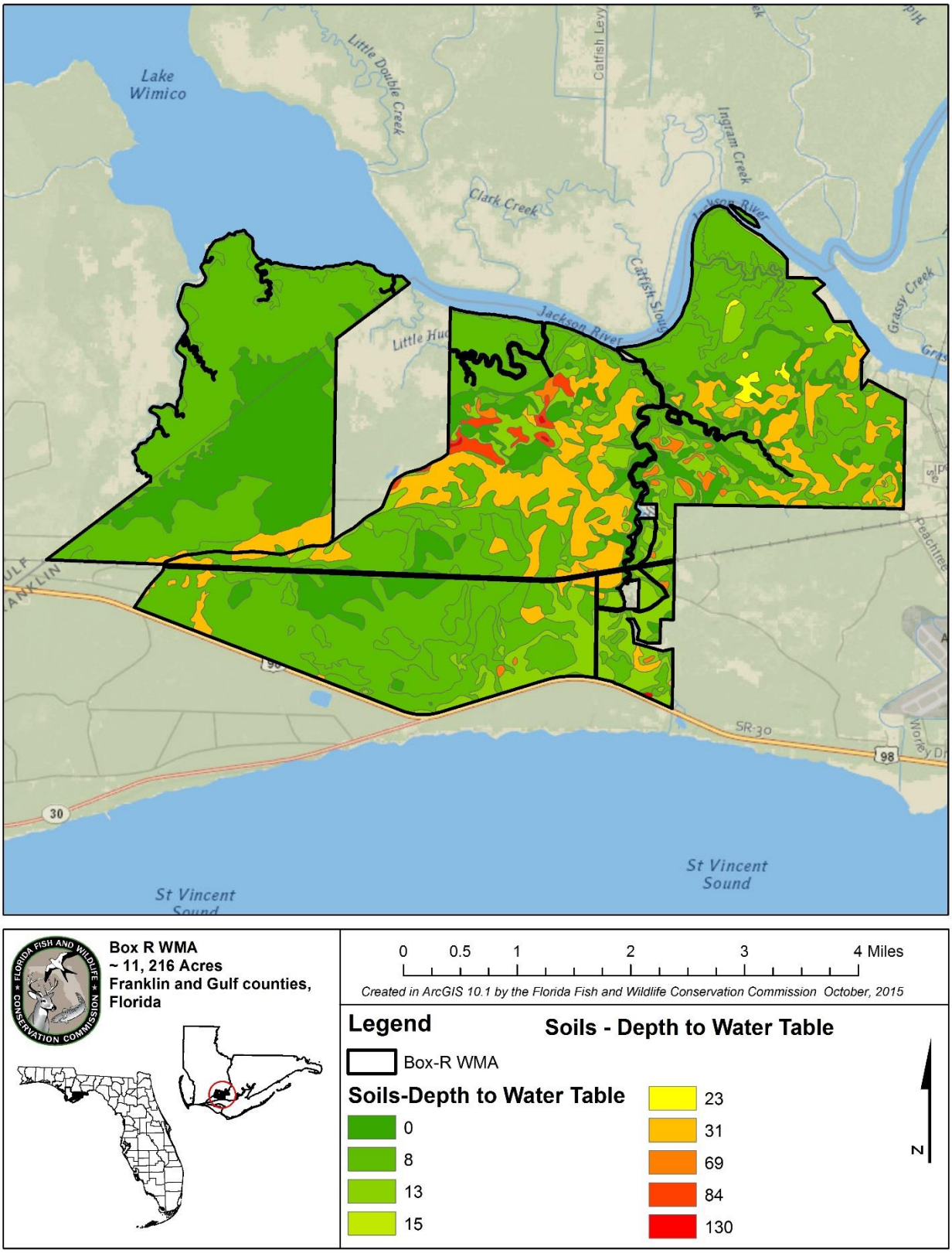

Figure 5. Soil Depths to Water Table (in cm) at the BRWMA

2.2 Vegetation

An array of natural communities provide habitat for the rich diversity of plants, fish and wildlife found at BRWMA. The area's estuarine and freshwater marshes, creeks, floodplain swamps, hammocks and pine uplands are part of a complex ecological system that includes the Apalachicola and Jackson rivers and Apalachicola Bay to the south. BRWMA habitats attract diverse wildlife and help to ensure a supply of clean water for Apalachicola Bay; which, as previously mentioned, produces over 90 percent of Florida's oysters and is a major nursery for blue crabs and marine fishes. Slash and longleaf pine characterize small areas of natural pinewoods but the majority of uplands were planted in slash and loblolly pines anywhere from 10 to 38 years ago. Ditches built to drain wet areas and create drier conditions more suitable for timber production have altered the natural flow of water on the property. Extensive marshes border portions of the two rivers. Through the services of the Florida Natural Areas Inventory (FNAI), FWC has mapped the natural and anthropogenic communities of BRWMA which describes 21 natural and anthropogenic community types existing on BRWMA, (Table 3 and Figure 6). Descriptions of each of the natural communities found on the area follow after Table 6. Additionally, FWC biologists, along with contracted surveys through FNAI, have documented the known native, rare and invasive exotic plant species (Tables 4, 5 and 6 respectively) occurring on the BRWMA.

Table 3. Natural and Altered Community Types of the BRWMA

Community Types	GIS Acres	Percent of Area*
Basin marsh	6.7	0.1%
Basin swamp	57.3	0.5%
Dome swamp	123.3	1.1%
Floodplain marsh	1,499.0	13.4%
Floodplain swamp	2,043.6	18.2%
Hydric hammock	200.9	1.8%
Mesic flatwoods	380.3	3.4%
Mesic hammock	71.0	0.6%
Pine plantation	3,750.8	33.5%
Restoration dome swamp	7.1	0.1%
Restoration mesic flatwoods	224.7	2.0%
Restoration scrubby flatwoods	6.5	0.1%
Restoration wet flatwoods	273.0	2.4%

Restoration wet prairie	487.7	4.4%
Ruderal	89.9	0.8%
Sandhill	7.6	0.1%
Scrubby flatwoods	47.5	0.4%
Shrub bog	1,698.1	15.1%
Wet flatwoods	234.6	2.1%
Wet prairie	1.4	0.0%
Xeric hammock	6.0	0.1%

*Percentage based on total FNAI mapped acres.

Table 4. Common Plant Species Observed or Expected to Occur at BRWMA

Common Name	Scientific Name
American elm	*Ulmus americana*
American holly	*Ilex opaca*
American snowbell	*Styrax americanus*
Apalachicola St. John's wort	*Hypericum chapmanii*
Bald cypress	*Taxodium distichum*
Beaksedge	*Rhynchospora* sp.
Black titi	*Cliftonia monophylla*
Blackgum	*Nyssa sylvatica*
Blackroot	*Pterocaulon pycnostachyum*
Bladderwort	*Utricularia sp.*
Blue huckleberry	*Gaylussacia frondosa var. tomentosa*
Bluejack oak	*Quercus incana*
Bog white violet	*Viola lanceolata*
Bottlebrush threeawn	*Aristida spiciformis*
Boxelder	*Acer negundo*
Bracken fern	*Pteridium aquilinum*
Broomsedge	*Andropogon sp.*
Broomsedge bluestem	*Andropogon virginicus*
Bulltongue arrowhead	*Sagittaria lancifolia*
Bushy bluestem	*Andropogon glomeratus*
Buttonbush	*Cephalanthus occidentalis*
Cabbage palm	*Sabal palmetto*
Camphor tree	*Cinnamomum camphora*
Candyroot	*Polygala nana*
Carolina ash	*Fraxinus caroliniana*
Carolina redroot	*Lachnanthes caroliana*
Carolina willow	*Salix caroliniana*
Cat greenbrier	*Smilax glauca*

Chalky bluestem	*Andropogon virginicus var. glaucus*
Chapman's oak	*Quercus chapmanii*
Cinnamon fern	*Osmunda cinnamomea*
Clematis	*Clematis sp.*
Climbing fetterbush	*Pieris phyllyreifolia*
Climbing hydrangea	*Decumaria barbara*
Clustered sedge	*Carex glaucescens*
Coastal sweetpepperbush	*Clethra alnifolia*
Coral greenbrier	*Smilax walteri*
Crossvine	*Bignonia capreolata*
Dahoon	*Ilex cassine*
Darrow's blueberry	*Vaccinium darrowii*
Deerberry	*Vaccinium stamineum*
Dwarf huckleberry	*Gaylussacia dumosa*
Dwarf live oak	*Quercus minima*
Dwarf palmetto	*Sabal minor*
Earleaf greenbrier	*Smilax auriculata*
Elliot's blueberry	*Vaccinium elliottii*
Elliott's yellow-eyed grass	*Xyris elliottii*
Eryngo	*Eryngium sp.*
Evans' reindeer lichen	*Cladina evansii*
Fetterbush	*Lyonia lucida*
Flattened pipewort	*Eriocaulon compressum*
Flatwoods St. John's wort	*Hypericum microsepalum*
Florida corkwood	*Leitneria floridana*
Florida dropseed	*Sporobolus floridanus*
Foxtail club-moss	*Lycopodiella alopecuroides*
Gallberry	*Ilex glabra*
Giant cutgrass	*Zizaniopsis miliacea*
Golden polypody	*Phlebodium aureum*
Gopher apple	Licania michauxii
Green ash	*Fraxinus pennsylvanica*
Gulf Coast spikerush	*Eleocharis cellulosa*
Gum bully	*Sideroxylon lanuginosum*
Hairy laurel	*Kalmia hirsuta*
Herb-of-grace	*Bacopa monnieri*
Hibiscus	*Hibiscus sp.*
Highbush blueberry	*Vaccinium corymbosum*
Iris	*Iris sp.*

Lanceleaf greenbrier	*Smilax smallii*
Large gallberry	*Ilex coriacea*
Laurel greenbrier	*Smilax laurifolia*
Laurel oak	*Quercus laurifolia*
Lichen	*Usnea sp.*
Live oak	*Quercus virginiana*
Lizard's tail	*Saururus cernuus*
Longleaf woodoats	*Chasmanthium laxum var. sessiliflorum*
Lopsided indiangrass	*Sorghastrum secundum*
Maidencane	*Panicum hemitomon*
Maleberry	*Lyonia ligustrina var. foliosiflora*
Millet beaksedge	*Rhynchospora miliacea*
Mountain azalea	*Rhododendron canescens*
Muscadine	*Vitis rotundifolia*
Myrtle oak	*Quercus myrtifolia*
Myrtle-leaved holly	*Ilex cassine var. myrtifolia*
Narrowfruit horned beaksedge	*Rhynchospora inundata*
Narrowleaf silkgrass	*Pityopsis graminifolia*
Needle rush	*Juncus roemerianus*
Netted chain fern	*Woodwardia areolata*
Odorless bayberry	*Myrica inodora*
Ogeechee tupelo	*Nyssa ogeche*
Orange milkwort	*Polygala lutea*
Overcup oak	*Quercus lyrata*
Parrot pitcherplant	*Sarracenia psittacina*
Pawpaw	*Asimina sp.*
Peelbark St. John's wort	*Hypericum fasciculatum*
Perfumed spiderlily	*Hymenocallis latifolia*
Pickerelweed	*Pontederia cordata*
Piedmont pinweed	*Lechea torreyi*
Pignut hickory	*Carya glabra*
Pineland wild indigo	*Baptisia lecontei*
Pink sundew	*Drosera capillaris*
Poison ivy	*Toxicodendron radicans*
Pond cypress	*Taxodium ascendens*
Prairie iris	*Iris hexagona*
Purple bluestem	*Andropogon glomeratus var. glaucopsis*
Queen’s delight	*Stillingia aquatica*
Red buckeye	*Aesculus pavia*

Red cedar	*Juniperus virginiana*
Red chokeberry	*Photinia pyrifolia*
Red maple	*Acer rubrum*
Resurrection fern	*Pleopeltis polypodioides var. michauxiana*
Rough hedgehyssop	*Gratiola hispida*
Royal fern	*Osmunda regalis var. spectabilis*
Running oak	*Quercus pumila*
Rush	*Juncus sp.*
Rusty staggerbush	*Lyonia ferruginea*
Saltbush	*Baccharis halimifolia*
Sand live oak	*Quercus geminata*
Sandyfield beaksedge	*Rhynchospora megalocarpa*
Savannah meadowbeauty	*Rhexia alifanus*
Savannah panicum	*Phanopyrum gymnocarpon*
Saw palmetto	*Serenoa repens*
Sawgrass	*Cladium jamaicense*
Sawtooth blackberry	*Rubus argutus*
Sedge	*Carex sp.*
Shiny blueberry	*Vaccinium myrsinites*
Shrubby primrosewillow	*Ludwigia suffruticosa*
Silky dogwood	*Cornus amomum*
Slash pine	*Pinus elliottii*
Smallflower pawpaw	*Asimina parviflora*
Southern magnolia	*Magnolia grandiflora*
Spanish moss	*Tillandsia usneoides*
Sparkleberry	*Vaccinium arboreum*
Sphagnum moss	*Sphagnum sp.*
Spiderlily	*Hymenocallis sp.*
St. Andrew's cross	*Hypericum hypericoides*
String lily	*Crinum americanum*
Swamp bay	*Persea palustris*
Swamp dock	*Rumex verticillatus*
Swamp doghobble	*Eubotrys racemosa*
Swamp jessamine	*Gelsemium rankinii*
Swamp laurel oak	*Quercus laurifolia*
Swamp tupelo	*Nyssa sylvatica var. biflora*
Sweetbay	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Tall jointweed	*Polygonella gracilis*

Tenangle pipewort	*Eriocaulon decangulare*
Thick-leaved water-willow	*Justicia crassifolia*
Threeway sedge	*Dulichium arundinaceum*
Titi	*Cyrilla racemiflora*
Turkey oak	*Quercus laevis*
Twoleaf watermilfoil	*Myriophyllum heterophyllum*
Vanillaleaf	*Carphephorus odoratissimus*
Virginia chain fern	*Woodwardia virginica*
Virginia creeper	*Parthenocissus quinquefolia*
Virginia iris	*Iris virginica*
Virginia willow	*Itea virginica*
Water lily	*Nymphaea sp.*
Water oak	*Quercus nigra*
Water tupelo	*Nyssa aquatica*
Wax myrtle	*Myrica cerifera*
Whitehead bogbutton	*Lachnocaulon anceps*
Whitetop pitcherplant	*Sarracenia leucophylla*
Wild olive	*Osmanthus americanus*
Wiregrass	*Aristida stricta var. beyrichiana*
Witchgrass	*Dichanthelium sp.*
Woodoats	*Chasmanthium sp.*
Woolly huckleberry	*Gaylussacia mosieri*
Yaupon	*Ilex vomitoria*
Yellow hatpins	*Syngonanthus flavidulus*
Yellow stargrass	*Hypoxis sp.*
Yellow-eyed grass	*Xyris sp.*

Table 5. Rare and Imperiled Plant Species of BRWMA

Common Name	Scientific Name
Chapman's crownbeard	*Verbesina chapmanii*
False rosemary	*Conradina canescnes*
Fernald's pogonia	*Pogonia bifaria*
Florida corkwood	*Leitneria floridana*
Florida skullcap	*Scutellaria floridana*
Florida waxweed	*Cuphea aspera*
Godfrey's butterwort	*Pinguicula ionantha*
Many-flowered grass-pink	*Calopogon multiflorus*
Narrow-leaved phoebanthus	*Phoebanthus tenuifolius*
Parrot pitcherplant	*Sarracenia psittacina*
Pine lilylily	*Lilium catesbaei*

Pineland false sunflower	*Phoebanthus tenuifolius*
Pinewoods aster	*Aster spinulosus*
Pinewoods bluestem	*Andropogon arctatus*
Rose pogonia	*Pogonia ophioglossoides*
Southern milkweed	*Asclepias viridula*
Southern milkweed	*Asclepias viridula Chapmanii*
Thick-leaved water-willow	*Justicia crassifolia*
White birds in a nest	*Macbridea alba*
White-top pitcherplant	*Sarracenia leucophylla*
Wiregrass gentian	*Gentiana pennelliana*
Yellow-flowered butterwort	*Pinguicula lutea*

Table 6. Exotic Plant Species of BRWMA

Common Name	Scientific Name
Alligator weed	*Alternanthera philoxeriodes*
Bull thistle	*Cirsium vulgare*
Camphor-tree	*Cinnamomum camphora*
Chinese tallow	*Triadica sebifera*
Chinese wisteria	*Wisteria sinensis*
Cuban bulrush	*Oxycaryum cubense*
Japanese climbing fern	*Lygodium japonicum*
Mimosa	*Albizia julibrissin*
Purple sesban	*Sesbania punicea*
Sesbania	*Sesbania grandiflora*
Torpedo grass	*Panicum repens*
Water hyacinth	*Eichhornia crassipes*
Water spangles	*Salvinia minima*

2.2.1 FNAI Natural Community Descriptions

Basin Marsh (~6.7 Acres)

Basin marsh is an herbaceous or occasionally shrub-dominated community that occurs in large, often irregularly shaped depressions. Basin marshes are regularly inundated freshwater herbaceous wetlands that may occur in a variety of situations, but in contrast to depression marshes, are not small or shallow inclusions within a fire-maintained natural community. Plant species composition is heterogeneous, both within and between marshes, but can generally be divided into submersed, floating-leaved, emergent, and grassy zones from deepest to shallowest portions; shrub patches may be present within any of these zones.

At BRWMA, only a few small areas of basin marsh occur within the large hydric hammock matrix. Sawgrass is the dominant species with scattered trees of sweetbay, red maple, and pond cypress and scattered shrubs of myrtle-leaved holly and buttonbush.

Basin Swamp (~57.3 Acres)

Basin swamps are forested wetlands of primarily deciduous trees occurring in large and/or irregularly shaped depressions. Basin swamp is vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamps are highly variable in size, shape, and species composition. Mixed species tree canopies are common, often including both evergreen and deciduous tree species. This natural community typically occurs in any type of large landscape depression such as old lake beds, river basins, and ancient coastal swales and lagoons that existed during higher sea levels.

On BRWMA, this community is relatively rare where it typically consists of a closed canopy layer of deciduous trees, with evergreen species more frequent in the subcanopy and shrub layers. The subcanopy is usually sparse and shrub layers may be either open or dense; in deeper swamps the shrubs are often found on hummocks around the bases of trees. The herb layer is usually sparse.

The closed canopy layer is composed primarily of swamp tupelo and pond cypress, with lesser amounts of slash pine and sweetbay. The subcanopy layer consists of scattered trees of the canopy species, plus red maple, dahoon, and myrtle-leaved holly. The tall shrub layer is composed of the latter trees plus wax myrtle and titi. The short shrub layer is often sparse and consists of fetterbush and sweet pepperbush, along with younger members of the tall shrub layer. Less common shrubs in both the tall and short shrub layer are Virginia willow, swamp doghobble, and swamp bay. The herb layer is generally sparse and usually consists of patches of netted chain fern, Virginia chain fern, and Sphagnum moss. Spanish moss is a common epiphyte on the cypress trees. Laurel greenbrier, lanceleaf greenbrier and vine-wicky are vines occasionally seen climbing on the trees.

Logging disturbance in some cases has opened up the canopy, permitting a dense growth of herbaceous species in the openings, including sawgrass, narrowfruit horned beaksedge, and Walter's sedge; shrubs on the disturbed edges of basin swamps include coastplain willow, odorless bayberry, and black titi. However, most basin swamps on BRWMA appear to be relatively undisturbed, as indicated by their closed canopies, well-developed hummock structure, and large diameter titi shrubs on their edges. Their dominant canopy species, swamp tupelo and cypress, are also the dominant species given in the description of swamps in the1916 soil survey of Franklin County (Mooney and Patrick 1916).

Dome Swamp (~123.3 Acres)

Dome swamp is an isolated, forested, depression wetland occurring within a fire-maintained community such as mesic flatwoods. The characteristic dome shape is created by smaller trees that grow in the shallower waters of the outer edge, while taller trees grow in the deeper water in the interior of the swamp. These swamps are generally small, but may also be large and shallow. Dome swamps are most often found on flat terraces, where they develop when the overlying sand has slumped into a depression in the underlying

limestone, creating a rounded depression connected to a shallow water table. In uplands with clay soils, dome swamps may occupy depressions over a perched water table. Soils in dome swamps are variable, but are most often composed of a layer of peat, which may be thin or absent at the periphery, becoming thicker toward the center of the dome.

On BRWMA, this community is quite variable in structure and species composition. In the most typical case, the canopy is a moderately dense mixture of pond cypress and swamp tupelo, with sweetbay and dahoon in the sparse subcanopy, and wax myrtle and myrtle-leaved holly forming a sparse to moderately dense tall shrub layer. In most cases sweet pepperbush and fetterbush were present in the sparse short shrub layer. The sparse herb layer is highly variable in species composition, often including sphagnum moss, Virginia chain fern and sedge. Vines and epiphytes are infrequent, consisting primarily of laurel greenbriar and Spanish moss respectively. A less frequent variant is a dome swamp in which a sparse layer of pond cypress forms the canopy over a dense tall shrub layer of titi, which in two cases was made up of unusually large diameter, tree-like titi; finally, a third variant of dome swamp community on BRWMA is represented by two mature dome swamps both of which had a closed canopy composed almost exclusively of large trees of ogeechee tupelo over a sparse tall shrub layer of myrtle-leaved holly or swamp doghobble. Most dome swamps were fairly intact; in one case the canopy trees had been completely logged and the dense herb layer was dominated by shrubby primrose willow, a weedy herb that often dominates recently cutover swamps.

Floodplain Marsh (~1,499 Acres)

Floodplain marsh is an herbaceous wetland of any size in a river floodplain. These are simple communities typically composed of sawgrass and often grade into floodplain forest.

At BRWMA, the most extensive floodplain marshes are found just inland from the higher levees along the Jackson River, embedded in a floodplain swamp matrix. Smaller marshes are found in embedded in wet flatwoods east of Pinelog Creek at the inland edge of the floodplain swamp community. The soil is extremely soft saturated muck that is difficult to walk across. At BRWMA floodplain marshes are dominated by a nearly monospecific stand of sawgrass with scattered patches of trees and shrubs. Other herbs include Gulf coast spikerush and Virginia chainfern. Shrubs are principally wax myrtle and buttonbush, with myrtle-leaved holly and black titi less frequently encountered. Trees, scattered individually or in clumps through the marsh, are primarily pond cypress and red maple, with cabbage palm and Carolina willow occurring less frequently.

Floodplain Swamp (~2,043.6 Acres)

Floodplain swamps are forested wetlands of mainly deciduous trees that line rivers and streams and are normally inundated. Floodplain swamps are generally riverine forested wetlands inundated or saturated for large portions of the year.

At BRWMA, this community is found along the Jackson River and Huckleberry and Pinelog creeks. Near the Jackson River, the closed canopy is composed of pond cypress, and swamp tupelo, with lesser amounts of green ash, red maple, overcup oak, water oak, American elm, and swamp laurel oak.

Further from the river, slash pine and sweetbay are also found in the canopy. The subcanopy is generally sparse and composed of red maple, swamp bay, Carolina ash, dahoon, sweetbay and cabbage palm. The tall shrub layer is sparse and primarily composed of wax myrtle and cabbage palm; Florida corkwood is also occasionally present, often near the border with open marsh. Short shrub cover varies from dense to sparse and is composed of dwarf palmetto, cabbage palm, wax myrtle, and saw palmetto. Titi and black titi are in the tall and short shrub layer in swamps further from the Jackson River. Herb cover may also be sparse to dense and may consist primarily of sawgrass or a diverse cover of herbs with much bare ground between them. Common herbs in this layer are herb-of-grace, string lily, spiderlily, iris, royal fern, Virginia chain fern, and lizard's tail. Epiphytes are generally uncommon and include Spanish moss, lichen and golden polypody. The latter, found on cabbage palms at two places, along the Jackson River and along Huckleberry Creek, is at its northern range limit. Vines are usually infrequent in this community, with laurel greenbrier being the most frequent species.

Most floodplain swamps at BRWMA appear to be relatively undisturbed except for past logging of large cypress; in one case, a swamp near the old sawmill seems to have become drier due to hydrologic disturbance and has an unusually dense shrub layer that is not confined to hummocks and which includes gallberry, with poison ivy as a frequent climber on the pond cypress.

Hydric Hammock (~200.9 Acres)

Hydric hammock is a forested wetland community with a canopy of broadleaved evergreen species, usually including oaks and cabbage palms, along with other wetland species, and often occurring in the ecotone between wetter swamps and drier uplands. Hydric hammock has a variable understory typically dominated by palms and ferns occurring on moist soils, often with limestone very near the surface. While species composition varies, the community generally has a closed canopy of oaks and palms, an open understory, and a sparse to a moderate groundcover of grasses and ferns. Hydric hammock occurs on low, flat, wet sites where limestone may be near the surface, and soil moisture is kept high mainly by rainfall accumulation on poorly drained soils. Periodic flooding from rivers, seepage, and spring discharge may also contribute to hydric conditions.

At BRWMA, hydric hammock is concentrated near the boat landing in the northeast corner of the property. The canopy layer is sparse to moderately dense and composed of slash pine, sweetbay, pond cypress, with live oak and swamp laurel oak being less frequent. The subcanopy is moderately dense and composed in many cases of young trees of the canopy species, plus cabbage palm, red maple, swamp bay, myrtle-leaved holly, and water oak.

The tall shrub layer is also moderately dense and includes the subcanopy species plus wax myrtle, sweet pepperbush and large gallberry. The patchy short shrub layer includes yaupon, wax myrtle, swamp bay, and saw palmetto. The sparse herb layer includes Virginia chain fern, sphagnum moss, and longleaf woodoats. Epiphytes are absent and vines may be dense, made up primarily of laurel greenbrier and muscadine. The prevalence of pines and the dense stands of small trees in the subcanopy and tall shrub layers are indications that the hydric hammock on the BRWMA is recovering from disturbance.

Mesic Flatwoods (~380.3 Acres)

Mesic flatwoods was the most widespread natural community in Florida prior to European settlement and development, covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods is characterized by an open canopy of tall pines and a dense, low ground layer of shrubs, grasses, and forbs. Longleaf pine is the principal canopy tree in northern and central Florida, transitioning to predominately slash pine in south Florida. 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.

On BRWMA, mesic flatwoods is concentrated in the northeastern portion of the property in three main areas: north and south of the house; south of the railroad tracks, both west of the main road and east of Huckleberry Creek; and on islands surrounded by floodplain swamp northeast of Pinelog Creek.

At BRWMA, the mesic flatwoods canopy is generally formed by slash pine alone or a mixture of slash and longleaf pine. The subcanopy, if present, consists of widely scattered trees of cabbage palm, sweetbay, laurel oak, or young slash pines. The tall shrub layer may be sparse to moderately dense, with rusty staggerbush, wax myrtle, black titi, and large gallberry being the most common components. The short shrub layer is usually dense and dominated by saw palmetto, with gallberry, fetterbush, and rusty staggerbush, also frequently present. Where there are grassy openings present, such as east of Huckleberry Creek south of the railroad tracks, many dwarf shrubs are found among the grasses, including dwarf live oak, Darrow's blueberry, shiny blueberry, hairy laurel, flatwoods St. John's wort, and running oak. Common grasses in these openings are wiregrass, Florida dropseed, bushy bluestem, broomsedge bluestem, and lopsided indiangrass. Vines are often absent in this community, but when present include laurel greenbrier and muscadine.

Growing season burns especially in areas with open, grassy mesic flatwoods would likely stimulate many herbs to flower, including such rare species as pine-woods aster, southern milkweed, white birds-in-a-nest, and Telephus' spurge previously documented on BRWMA in this habitat. North of the house, southern magnolia and live oak from the mesic hammocks along the Jackson River enter the understory of mesic flatwoods. This also appears to have been the case on the 1953 aerial, since the signature of the mesic flatwoods

is darker in this area. The river may be acting as a firebreak allowing hardwoods to colonize the understory of the mesic flatwoods in this area.

Mesic Hammock (~71 Acres)

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.

At BRWMA, mesic hammock makes up less than one percent of the total acreage and is found primarily in the vicinity of the house in the north-central portion of the property. The canopy layer covers about fifty percent of the area and is composed of live oak, southern magnolia, laurel oak, water oak, and slash pine. Cabbage palm is prominent in the open subcanopy layer, along with American holly and wild olive. Wax myrtle, sparkleberry, deerberry and yaupon are commonly found in the patchy tall shrub layer, with these species plus young cabbage palm and saw palmetto scattered in the short shrub layer. Patches of bracken fern and scattered clumps of sandyfield beaksedge are found in the sparse herb layer. Spanish moss is found on the live oaks especially near swamps and muscadine and poison ivy are frequently encountered vines.

The exotic camphor tree was found to be invading a mesic hammock near the eastern boat landing. The community showed signs of having been partially cleared on the 1953 aerial. Mesic hammock usually develops in the fire shadow of water bodies and thus experiences less frequent fires than the surrounding mesic flatwoods.

Pine Plantation (~3,750.8 Acres)

Slash pine plantation comprises a large percent of the acreage of BRWMA. Overlaying the 1953 aerial photography with the current vegetation map shows that plantations were planted primarily in the mesic flatwoods, wet flatwoods, wet prairie, scrubby flatwoods, and shrub bog communities. (Inferences as to the natural communities shown on the 1953 aerial were made from aerial photo interpretation alone – there were no nineteenth century surveyors' notes on the area because it was part of the Forbes Purchase.) The western

portion of the property south of the railroad tracks appears to have been converted relatively recently; the 1991 Department of Transportation (DOT) black and white aerial shows it in natural vegetation; the1995 and 1998 DOQQ's show timber harvest in progress, and the 2004 DOQQs show the area covered in uniform pine plantation. As the long species list shows, many native species can survive pine planting but wiregrass, the dominant species in the mesic flatwoods and wet prairie communities, typically cannot, due the ground disturbance from raking, bedding etc. that is done on most sites converted to industrial pine pulp production. Two areas of plantation, one between Huckleberry and Pinelog creeks and one in the southeast corner of the property, still have substantial cover of wiregrass; these areas were in natural vegetation on the 1970 Mark Hurd aerial and appear to have been cleared for pine planting on the 1991 DOT aerial. Growing season burns would be useful in maintaining a healthy stand of wiregrass in these areas.

Restoration Natural Communities (~999.1 Acres combined)

Areas labeled as "restoration" communities are former altered landcover or successional natural community types (pine plantation, xeric hammock, etc.) where active restoration is ongoing to return the community to its historic state. Examples of restoration activities include pine thinning, longleaf pine planting, groundcover restoration, hydrology restoration, and removal of exotics and other undesirable vegetation. In historically pyrogenic restoration natural communities, restoration activities are accompanied by the application of prescribed fire. As identified in Table 3, Figure 6, at BRWMA, restoration activities are in the process of returning areas of pine plantation to a more natural state of dome swamp (7.1 acres), mesic flatwoods (224.7 acres), scrubby flatwoods (6.5 acres), wet flatwoods (273.0 acres), and wet prairie (487.7).

Ruderal (~89.9 Acres)

Ruderal areas at BRWMA include the following altered landcover types: artificial pond, clearing/regeneration (wildlife food plots, recent or historic clearings), developed (residential area), roads and utility corridor.

Sandhill (~7.6 Acres)

Sandhill is open forest of longleaf pine on upland sandy soils with an understory of scattered deciduous oaks and a groundcover dominated by wiry grasses. Sandhill occurs on rolling hills with deep, often yellowish, well-drained sands. These are open, xeric communities dominated by widely spaced longleaf pine trees with a sparse midstory of deciduous oaks and a moderate to dense groundcover of grasses, herbs, and low shrubs. The midstory trees and low shrubs can be sparse to dense, depending on fire history, and typically include turkey oak, bluejack oak, sand live oak, sand post oak, sparkleberry, dwarf huckleberry, pricklypear, and gopher apple. The diverse herbaceous groundcover is often dominated by wiregrass, with other grasses and herbs including pineywoods dropseed, lopsided indiangrass, and a variety of forbs with many species of legumes and asters.

At BRWMA, sandhill occurs on two small patches along the western boundary of the property. Longleaf has been largely logged out and sand pine has invaded a portion of the community. The canopy is open and includes longleaf pine, slash pine, and sand pine. The moderately dense subcanopy is composed primarily of turkey oak with scattered live oaks. There is little tall shrub layer and the sparse short shrub layer contains saw palmetto, running oak, and deerberry. The herb layer is sparse with only a few patches of wiregrass plus narrowleaf silkgrass and bracken fern. Earleaf greenbrier is a common vine.

Scrubby Flatwoods (~47.5 Acres)

Scrubby flatwoods is an open-canopied upland forest of widely spaced longleaf pine or slash pine, with a shrub layer with scrub oaks and saw palmetto, and a ground cover of diverse herbs and dwarf shrubs, 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 BRWMA, scrubby flatwoods is rare, occurring on isolated rises within the mesic flatwoods matrix community. The canopy layer is composed of longleaf and slash pines with sand live oak, myrtle oak, and Chapman's oak, and rusty staggerbush in the tall and short shrub layers. Also in the short shrub layer are saw palmetto, dwarf huckleberry, dwarf live oak, and flatwoods St. John's wort. Wiregrass and Florida dropseed are patchy in the herb layer.

Shrub Bog (~1,698.1 Acres)

Shrub bogs are dense stands of broadleaved evergreen shrubs, vines, and trees. This community can be found with or without an overstory of scattered pine or bay trees and grows in mucky soil where water is usually less than a foot deep. Shrub bog is found on the border of swamps, in stream-head drainages, and in flat, poorly drained areas adjacent rivers and their associated floodplain communities. It often forms the border between pyrogenic upland communities and swamp or hydric hammock communities.

In the 2007 BRWMA natural community mapping effort, this habitat was documented as baygall. However, since that time shrub bog has been differentiated from baygall by having a shorter fire return interval and lacking a closed canopy of bay trees (FNAI, 2010).

At BRWMA, shrub bog is found in the northwestern most portion of the area and consists of a generally sparse canopy of slash pine, loblolly bay, sweetbay, and pond cypress. In shrub bog areas that have been long excluded from fire, by either natural or anthropogenic causes, canopy trees are often of an older-mature to old growth age class. Shrub cover is commonly very dense and tall, generally 15 to 30 feet in height. Characteristic shrub

species include titi, black titi, fetterbush, large gallberry, and sweet pepperbush, often entangled with laurel greenbrier. Herbs are very sparse and are common only on the more open ecotone of the natural community. Virginia chain fern is the only commonly encountered herb in the shrub bog community on BRWMA. The majority of the ground cover in these saturated and well shaded habitats is composed of sphagnum moss.

Some shrub bogs appear to be stable, appearing in the same areas on the 2004 aerials as they do on the 1953 aerials, whereas others appear to have invaded areas that were open wet prairies in 1953, especially along the ecotones between streams or swamps and mesic flatwoods or in the understory of pine plantations. Dead or dying clumps of wiregrass, dead patches of Apalachicola St. John's wort on the edge of the dense stands of black titi shrubs indicate areas of former wet prairie where black titi has invaded in the absence of spring and summer fires and shaded out these light-loving species to form a new shrub bog community.

Wet Flatwoods (~234.6 Acres)

Wet flatwoods are dense to open pine canopy forests with an understory of hydrophytic herbs and shrubs. 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.

At BRWMA, wet flatwoods occur as two types: a more common type with a dense understory of titi shrubs found throughout the property and a more restricted type with an open understory of sawgrass and scattered shrubs found in one area east of Pinelog Creek, in the ecotone between floodplain swamp and former mesic flatwoods now in pine plantation. The canopy layer of the wet flatwoods community is dominated by slash pine, with scattered trees of longleaf pine, sweetbay, laurel oak, water oak, and pond cypress.

The sub-canopy layer of the common type of wet flatwoods is lacking and the tall shrub layer is dominated by a dense stand of black titi and titi, with patches of large gallberry. The herb layer is sparse and confined to openings between the shrubs. Species in this layer include flattened pipewort, tenangle pipewort, lesser creeping rush, and Carolina redroot.

The sub-canopy of the restricted type of wet flatwoods is sparse with scattered trees of swamp bay, red maple, swamp tupelo, and cabbage palm. The tall and short shrub layers

are patchy. In addition to the titi and black titi, the tall shrub layer contains myrtle-leaved holly, wax myrtle, swamp bay, peelbark St. John's wort, and dahoon. The herb layer is patchy and consists of sawgrass, tenangle pipewort, and millet beaksedge. Vines are occasional and consist primarily of laurel greenbrier with lesser amounts of swamp jessamine, cat greenbrier, and muscadine.

Wet Prairie (~1.4 Acres)

Wet prairies are nearly treeless flatlands dominated by wiregrass or wiry beaksedges with a diverse assemblage of hydrophytic herbs, grasses, and dwarf shrubs. Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils of gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps, and slightly higher wet or mesic flatwoods, or dry prairie. Wet prairies are grass- and sedge-dominated wetlands maintained by a high or perched ground water table and frequent fires. They also occur in narrow seepage zones of saturated soil at the base of gentle slopes of stream drainages and in flat lowlands. Wet prairie usually occurs on acidic, nutrient-deficient, saturated soils.

At BRWMA, wet prairies once occupied larger areas, but following pine planting have been reduced to remnant patches, the largest of which is less than one acre. They were formerly concentrated in the area west of the main road and east of the large shrub bog in the west section. The remnant area of wet prairie is dominated by wiregrass, which is being invaded by black titi. Rare species formerly documented at BRWMA that occur in this community include white-topped pitcherplant, Godfrey's butterwort, Florida waxweed, and thick-leaved water-willow.

Xeric Hammock (~6 Acres)

Xeric hammocks are upland forests of oaks on dry sandy sites. Xeric hammock is an evergreen forest found on well-drained sandy soils. The low canopy is typically closed and usually dominated by sand live oak. An emergent canopy of pine may be present. Xeric hammock typically develops where fire-exclusion allows for the establishment of the oak canopy. This may occur naturally when the area has significant barriers to fire, or more commonly, as the result of human intervention. In these areas, xeric hammock can form extensive stands or can occur as small patches within or near sandhill or scrub. Xeric hammock can also occur on high islands within flatwoods, or on a high, well-drained ridge within a floodplain. Xeric hammock also can occur on barrier islands and in other coastal environs as an advanced successional stage of scrub.

At BRWMA, xeric hammock occurs only in a small area near the house, but is a well-developed distinctive community consisting essentially of overgrown scrubby flatwoods which developed in the fire shadow of the river. The patchy canopy consists of tree-sized sand live oak with scattered slash pine, and longleaf pine. The tall shrub layer includes American holly, rusty staggerbush, fetterbush, southern magnolia, wild olive, sand live oak,

sparkleberry, and deerberry. The dense short shrub layer includes myrtle oak, Chapman's oak, fetterbush, saw palmetto, and deerberry with lesser amounts of blue huckleberry. Bracken fern is found in the sparse herb layer.

2.2.2 Forest Resources

In 2009, a complete timber inventory was conducted on the BRWMA. The information gathered in the inventory was used to create a Comprehensive Forest Management Plan for BRWMA that was completed in 2010. The BRWMA Comprehensive Forest Management Plan provides FWC with a comprehensive and prescriptive silvicultural plan that will guide decisions regarding timber management on the area.

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 longleaf containerized longleaf pine seedlings. Another often used technique is to conduct a series of thinning operations gradually to reduce the pine basal area to 30-70 sq. ft./acre, dependent on vegetation type and desired future outcome, and then under-plant sites with containerized longleaf pine to increase the uneven-aged character of the stands, overstory structure, and species diversity. On the BRWMA area staff are conducting 3rd row thinning on unthinned stands. Staff will thin basel area to 30 sq. ft./acre and underplant longleaf about 6 yrs later. Previously thinned stands are thinned to 30 basal area sq. ft./acre and underplanted with longleaf pines. Underplanting density is 444 trees/acre.

The BRWMA has small areas of natural stands of slash and longleaf pine, but the majority of uplands were clearcut and planted in slash and loblolly pines anywhere from 6 to 34 years ago. Ditches built to drain wet areas and create drier conditions more suitable for timber production have altered the natural flow of water on the property.

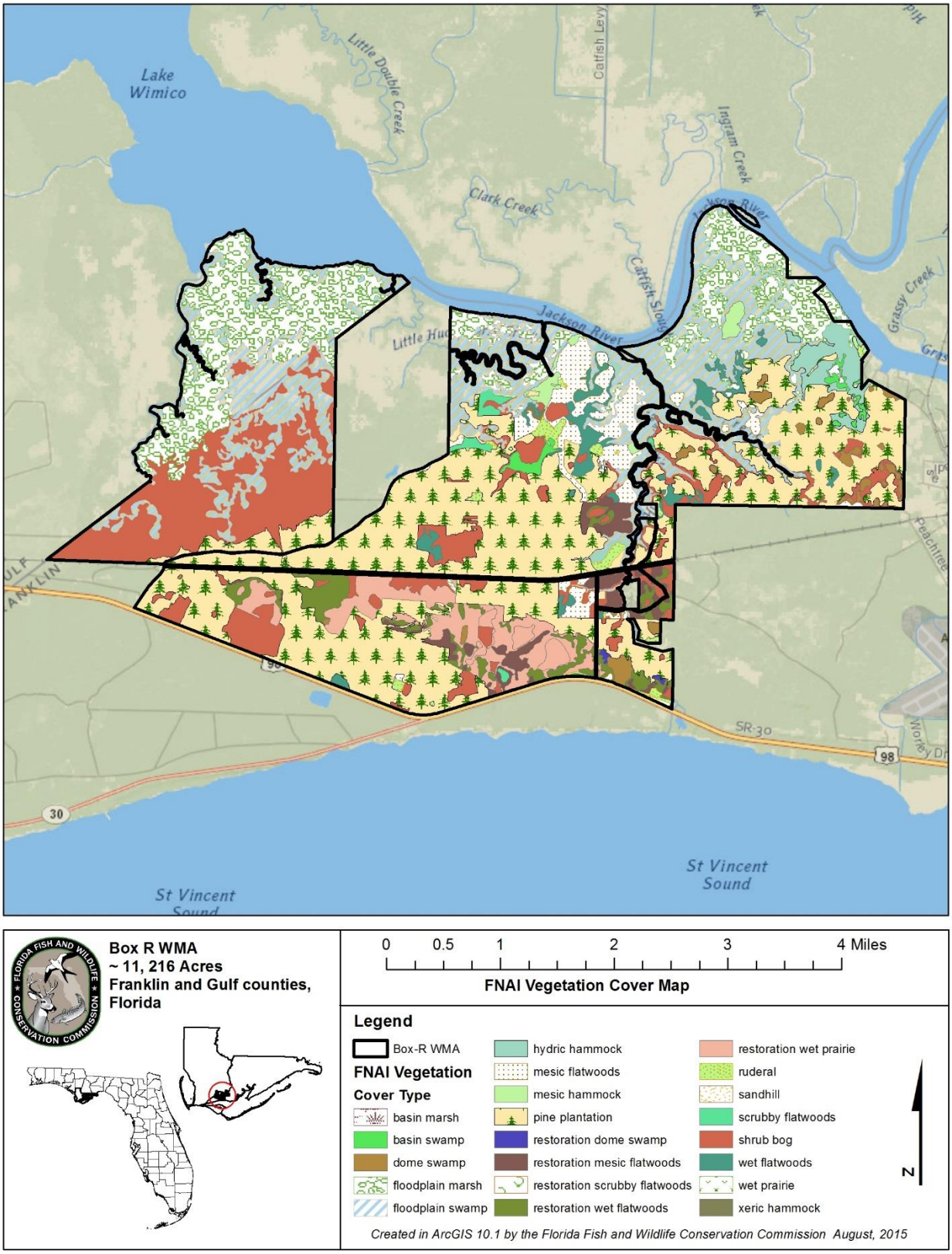

Figure 6. FNAI Natural Communities Vegetative Cover Map

2.3 Fish and Wildlife Resources

As described above, the BRWMA has a variety of natural communities and currently supports many wildlife species. Active wildlife management practices and a diversity of natural communities make the BRWMA an excellent place to view wildlife. The BRWMA has an assortment of wildlife indigenous to both the upland and aquatic habitats. Table 7 lists mammalian species occurring or expected to occur on BRWMA, Table 8 lists reptile and amphibian species occurring or expected to occur on BRWMA, Table 9 lists fish species occurring or expected to occur on BRWMA, Table 10 lists bird species occurring on BRWMA, and Table 11 lists exotic animal species known to occur on the area.

Table 7. Mammal Species Documented or Expected to Occur on the BRWMA

Common Name	Scientific Name
Beaver	*Castor canadensiscanadensis*
Big brown bat	*Eptesicus fuscus*
Florida black bear	*Ursus americanus floridanus*
Bobcat	*Lynx rufus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Cotton mouse	*Peromyscus gossypinus*
Coyote	*Canis latrans*
Eastern cottontail	*Sylvilagus floridanus*
Eastern gray squirrel	*Sciurus carolinensis*
Eastern mole	*Scalopus aquaticus*
Eastern pipistrelle	*Perimyotis subflavus*
Eastern woodrat	*Neotoma floridana smalli*
Evening bat	*Nycticeius humeralis*
Fox squirrel	*Sciurus niger*
Golden mouse	*Ochrotomys nuttalli*
Gray fox	*Urocyon cinereoargenteus*
Hispid cotton rat	*Sigmodon hispidus*
Hoary bat	*Lasiurus cinereus*
Least shrew	*Cryptotis parva*
Little brown bat	*Myotis lucifugus*
Marsh rabbit	*Sylvilagus palustris*
Mink	*Neovison vison*
Northern yellow bat	*Lasiurus intermedius*
Oldfield mouse	*Peromyscus polionotus*
Opossum	*Didelphis virginiana*
Pine vole	*Microtus pinetorum*
Raccoon	*Procyon lotor*
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*
Red bat	*Lasiurus borealis*

Common Name	Scientific Name
Red fox	*Vulpes vulpesvulpes*
River otter	*Lontra canadensiscanadensis*
Round-tailed muskrat	*Neofiber alleni*
Southeastern bat	*Myotis austroriparius*
Southeastern pocket gopher	*Geomys pinetis*
Southern flying squirrel	*Glaucomys volans*
Southern short-tailed shrew	*Blarina carolinensis*
Striped skunk	*Mephitis mephitis*
Tricolored bat	*Perimyotis subflavus*
White-tailed deer	*Odocoileus virginianus*

Table 8. Reptile and Amphibian Species Documented or Expected to Occur on the BRWMA

Common Name	Scientific Name
Alligator snapping turtle	*Macrochelys temminckii*
American alligator	*Alligator mississippiensis*
Apalachicola kingsnake	*Lampropeltis getula meansi*
Banded water snake	*Nerodia fasciata*
Barbour's map turtle	*Graptemys barbouri*
Bird-voiced treefrog	*Hyla avivoca*
Black racer	*Coluber constrictor*
Broadhead skink	*Plestiodon laticeps*
Bronze frog	*Lithobates clamitans clamitans*
Bull frog	*Lithobates catesbeianus*
Chicken turtle	*Deirochelys reticularia*
Coachwhip	*Masticophis flagellum*
Common snapping turtle	*Chelydra serpentina*
Eastern corn snake	*Pantherophis guttatusPantheorphis guttatus*
Cottonmouth	*Agkistrodon piscivorus*
Cricket frog	*Acris gryllus*
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*
Dwarf salamander	*Eurycea quadridigitata*
Eastern coral snake	*Micrurus fulvius*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern glass lizard	*Ophisaurus ventralis*
Eastern hog-nosed snake	*Heterodon platirhinos*
Eastern indigo snake	*Drymarchon couperi*
Eastern kingsnake	*Lampropeltis getula getula*
Eastern mud snake	*Farancia abacura abacura*
Eastern mud turtle	*Kinosternon subrubrum subrubrum*

Common Name	Scientific Name
Eastern newt	*Notophthalmus viridescens*
Eastern ribbon snake	*Thamnophis sauritus sauritus*
Eastern six-lined racerunner	*Aspidoscelis sexlineata*
Eastern spadefoot toad	*Scaphiopus holbrookii*
Florida cooter	*Pseudemys concinna floridana*
Florida softshell turtle	*Apalone ferox*
Four-toed salamander	*Hemidactylium scutatum*
Garter snake	*Thamnophis sauritus*
Glossy crawfish snake	*Regina rigida*
Gopher tortoise	*Gopherus polyphemus*
Gray rat snake	*Pantherophis spiloides*
Cope's gray treefrog	*Hyla chrysoscelis*
Greater siren	*Siren lacertina*
Green anole	*Anolis carolinensis*
Green treefrog	*Hyla cinerea*
Greenhouse frog	*Eleutherodactylus planirostris*
Ground skink	*Scincella lateralis*
Gulf coast box turtle	*Terrapene carolina major*
Lesser siren	*Siren intermedia*
Little grass frog	*Pseudacris ocularis*
Loggerhead musk turtle	*Sternotherus minor*
Marbled salamander	*Ambystoma opacum*
Mole salamander	*Ambystoma talpoideum*
Mole skink	*Eumeces egregius*
Mud salamander	*Pseudotriton montanus*
Narrow-mouthed frog	*Gastrophryne carolinensis*
Oak toad	*Anaxyrus quercicus*
Pig frog	*Lithobates grylio*
Pinewoods treefrog	*Hyla femoralis*
Redbelly water snake	*Nerodia erythrogaster erythrogaster*
Ringneck snake	*Diadophis punctatus*
River frog	*Lithobates heckscheri*
Scarlet snake	*Cemophora coccinea*
Slider	*Trachemys scripta*
Slimy salamander	*Plethodon grobmani*
Eastern smooth earth snake	*Virginia valeriae valeriae*
Southeastern five-lined skink	*Plestiodon inexpectatus*
Southern chorus frog	*Pseudacris nigrita*
Eastern fence lizard	*Sceloporus undulatus*
Southern leopard frog	*Lithobates sphenocephalus utricularius*
Southern spring peeper	*Pseudacris crucifer*

Common Name	Scientific Name
Southern toad	*Anaxyrus terrestris*
Squirrel treefrog	*Hyla squirella*
Stinkpot	*Sternotherus odoratus*
Three-lined salamander	*Eurycea guttolineata*
Southern two-lined salamander	*Eurycea cirrigera*
Two-toed amphiuma	*Amphiuma means*
Upland chorus frog	*Pseudacris feriarum*

Table 9. Fish Species Documented or Expected to Occur on the BRWMA

Common Name	Scientific Name
Banded pygmy sunfish	*Elassoma zonatum*
Bannerfin shiner	*Cyprinella leedsi*
Black crappie	*Pomoxis nigromaculatus*
Blackbanded darter	*Percina nigrofasciata*
Blacktail shiner	*Cyprinella venustavenusta*
Bluegill	*Lepomis macrochirus*
Bluespotted sunfish	*Enneacanthus gloriosus*
Bowfin	*Amia calva*
Brook silverside	*Labidesthes sicculus*
Brown bullhead	*Ameiurus nebulosus*
Chain pickerel	*Esox niger*
Channel catfish	*Ictalurus punctatus*
Clear chub	*Notropis winchelli*
Coastal shiner	*Notropis petersoni*
Common carp	*Cyprinus carpio*
Dollar sunfish	*Lepomis marginatus*
Everglades pygmy sunfish	*Elassoma evergladei*
Flathead catfish	*Pylodictis olivaris*
Flier	*Centrarchus macropterus*
Florida gar	*Lepisosteus platyrhincus*
Gizzard shad	*Dorosoma cepedianum*
Golden shiner	*Notemigonus crysoleucas*
Green sunfish	*Lepomis cyanellus*
Gulf darter	*Etheostoma swaini*
Gulf sturgeon	*Acipenser oxyrinchus desotoi*
Lake chubsucker	*Erimyzon sucetta*
Largemouth bass	*Micropterus salmoides*
Least killifish	*Heterandria formosa*
Lined topminnow	*Fundulus lineolatus*
Longnose gar	*Lepisosteus osseus*

Common Name	Scientific Name
Mosquitofish	*Gambusia affinis*
Mud sunfish	*Acantharchus pomotis*
Pirate perch	*Aphredoderus sayanus*
Pugnose minnow	*Opsopoeodus emiliae*
Redbreast sunfish	*Lepomis auritus*
Redear sunfish	*Lepomis microlophus*
Redfin pickerel	*Esox americanus*
Southern brook lamprey	*Ichthyomyzon gagei*
Speckled madtom	*Noturus leptacanthus*
Spotted bullhead	*Ameiurus serracanthus*
Spotted sucker	*Minytrema melanops*
Spotted sunfish	*Lepomis punctatus*
Striped bass	*Morone saxatilis*
Swamp darter	*Etheostoma fusiforme*
Tadpole madtom	*Noturus gyrinus*
Taillight shiner	*Notropis maculatus*
Threadfin shad	*Dorosoma petenense*
Warmouth	*Lepomis gulosus*
Weed shiner	*Notropis texanus*
White bass	*Morone chrysops*
White catfish	*Ameiurus catus*
Yellow bullhead	*Ameiurus natalis*

Table 10. Bird Species Documented or Expected to Occur on the BRWMA

Common Name	Scientific Name
American bittern	*Botaurus lentiginosus*
American coot	*Fulica americana*
American crow	*Spinus tristisCorvus brachyrhynchos*
American goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
American oystercatcher	*Haematopus palliatus*
American robin	*Turdus migratorius*
American white pelican	*Pelecanus erythrorhynchos*
American woodcock	*Scolopax minor*
Anhinga	*Megaceryle alcyonAnhinga anhinga*
Arcadian flycatcher	*Empidonax virescens*
Barred owl	*Strix varia*
Belted kingfisher	*Megaceryle alcyon*
Black vulture	*Coragyps atratus*
Black-and-white warbler	*Mniotilta varia*

Common Name	Scientific Name
Black-bellied plover	*Pluvialis squatarola*
Black-crowned night-heron	*Nycticorax nycticorax*
Blue jay	*Cyanocitta cristata*
Blue-gray gnatcatcher	*Chroicocephalus philadelphiaPolioptila caerulea*
Blue-headed vireo	*Vireo solitarius*
Boat-tailed grackle	*Quiscalus major*
Bonaparte's gull	*Chrociocehpalus philadelphia*
Brown creeper	*Certhia americana*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Brown-headed nuthatch	*Sitta pusilla*
Bufflehead	*Bucephala albeola*
Carolina chickadee	*Poecile carolinensis*
Carolina wren	*Thryothorus ludovicianus*
Caspian tern	*Hydroprogne caspia*
Cedar waxwing	*Bombycilla cedrorum*
Chipping sparrow	*Spizella passerina*
Clapper rail	*Rallus longirostris*
Common goldeneye	*Bucephala clangula*
Common grackle	*Quiscalus quiscula*
Common ground-dove	*Columbina passerina*
Common loon	*Gavia immer*
Common snipe	*Gallinago gallinago*
Common yellowthroat	*Geothlypis trichas*
Double-crested cormorant	*Phalacrocorax auritus*
Downy woodpecker	*Picoides pubescens*
Dunlin	*Calidris alpina*
Eastern bluebird	*Sialia sialis*
Eastern brown pelican	*Pelecanus occidentalis*
Eastern meadowlark	*Sturnella magna*
Eastern phoebe	*Sayornis phoebe*
Eastern screech-owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Forster's tern	*Sterna forsteri*
Golden-crowned kinglet	*Regulus satrapa*
Gray catbird	*Dumetella carolinensis*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*

Common Name	Scientific Name
Great horned owl	*Bubo virginianus*
Greater yellowlegs	*Tringa melanoleuca*
Green heron	*Butorides virescens*
Hermit thrush	*Catharus guttatus*
Herring gull	*Larus argentatus*
Hooded merganser	*Lophodytes cucullatus*
Hooded warbler	*Leucophaeus atricillaSetophaga citrina*
Horned grebe	*Podiceps auritus*
House wren	*Troglodytes aedon*
Killdeer	*Charadrius vociferus*
King rail	*Rallus elegans*
Laughing gull	*Larus atricilla*
Least tern	*Sternula antillarum*
Lesser scaup	*Aythya affinis*
Lest bittern	*Ixobrychus exilis*
Little blue heron	*Oreothlypis celataEgretta caerulea*
Loggerhead shrike	*Lanius ludovicianus*
Mallard	*Seiurus aurocapillaAnas platyrhynchos*
Marian's marsh wren	*Setophaga palmarumCistothorus palustris marianae*
Marsh wren	*Cistothorus palustris*
Mississippi kite	*Ictinia mississippiensis*
Mourning dove	*Setophaga pinusZenaida macroura*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Setophaga americana*
Orange-crowned warbler	*Vermivora celata*
Osprey	*Pandion haliaetus*
Ovenbird	*Thallaseus maximusSeiurus aurocapillus*
Palm warbler	*Dendroica palmarum*
Pied-billed grebe	*Podilymbus podiceps*
Pileated woodpecker	*Hylatomus pileatus*
Pine warbler	*Dendroica pinus*
Prothonotary warbler	*Protonotaria citrea*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-breasted merganser	*Mergus serrator*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Ring-billed gull	*Larus delawarensis*

Common Name	Scientific Name
Royal tern	*Sterna maxima*
Ruby-crowned kinglet	*Regulus calendula*
Ruddy turnstone	*Actitis macularius**Arenaria interpres*
Sanderling	*Calidris alba*
Savannah sparrow	*Passerculus sandwichensis*
Seaside sparrow	*Ammodramus maritimus*
Sedge wren	*Cistothorus platensis*
Semipalmated plover	*Charadrius semipalmatus*
Sharp-shinned hawk	*Accipiter striatus*
Short-billed dowitcher	*Limnodromus griseus*
Snow bunting	*Plectrophenax nivalis*
Snowy egret	*Egretta thula*
Song sparrow	*Melospiza melodia*
Sora	*Porzana carolina*
Southeastern American kestrel	*Tringa semipalmata**Falco sparverius*
Southern bald eagle	*Haliaeetus leucocephalus*
Spotted sandpiper	*Actitis macularia*
Swainson's warbler	*Limnothlypis swainsonii*
Swallow-tailed kite	*Setophaga coronata**Elanoides forficatus*
Swamp sparrow	*Setophaga dominica**Melospiza georgiana*
Tree swallow	*Tachycineta bicolor*
Tricolored heron	*Egretta tricolor*
Tufted Titmouse	*Baeolophus bicolor*
Turkey vulture	*Cathartes aura*
Virginia rail	*Rallus limicola*
Western sandpiper	*Calidris mauri*
White ibis	*Eudocimus albus*
White-crowned sparrow	*Zonotrichia leucophrys*
White-eyed vireo	*Vireo griseus*
White-throated sparrow	*Zonotrichia albicollis*
Wild turkey	*Meleagris gallopavo*
Willet	*Catoptrophorus semipalmatus*
Wood duck	*Aix sponsa*
Wood stork	*Mycteria americana*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Yellow-rumped warbler	*Dendroica coronata*
Yellow-throated warbler	*Dendroica dominica*

Table 11. Exotic Species Documented on the BRWMA

Common Name	Scientific Name
Common Carp	*Cyprinus carpio*
Feral pig	*Sus scrofa*
Flathead catfish	*Pylodictis olivaris*
Nine-banded armadillo	*Dasypus novemcinctus*

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 BRWMA has a high mean wildlife value of 6.7 (Figures 7).

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."

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

The FWC published Species Action Plans in 2014, for all state-listed species. These plans outline the specific management actions necessary to meet conservation goals for the species, improve habitat quality, and minimize threats. The FWC consults the Species Action Plans in consideration of imperiled species management for all of our managed areas. These Species Action Plans are consulted for specific habitat management recommendations. http://myfwc.com/wildlifehabitats/imperiled/

As described above, the BRWMA has a variety of natural communities and currently supports many wildlife species. Twenty rare and imperiled species have been documented on BRWMA. Table 12 lists the rare and imperiled wildlife species that have been documented as occurring on or in the vicinity of the BRWMA.

Table 12. Rare and Imperiled Wildlife Species Occurring on or near the BRWMA

Common Name	Scientific Name	Status
Alligator snapping turtle	*Macrochelys temminckii*	SSC
American alligator	*Alligator mississippiensis*	FT(S/A)
American oystercatcher	*Haematopus palliatus*	SSC
Apalachicola kingsnake	*Lampropeltis getula meansi*	NL
Southern bald eagle	*Haliaeetus leucocephalus*	NL
Barbour's map turtle	*Graptemys barbouri*	SSC
Eastern indigo snake	*Drymarchon couperi*	FT
Fat threeridge	*Amblema neislerii*	FE
Gopher tortoise	*Gopherus polyphemus*	ST
Gulf moccasinshell	*Medionidus penicillatus*	FE
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	FT
Least tern	*Sternula antillarum*	ST
Little blue heron	*Egretta caerulea*	SSC
Marian's marsh wren	*Cistothorus palustris marianae*	SSC
Oval pigtoe	*Pleurobema pyriforme*	FE
Purple bankclimber	*Elliptoideus sloatianus*	FT
Snowy egret	*Egretta thula*	SSC
Tricolored heron	*Egretta tricolor*	SSC
White ibis	*Eudocimus albus*	SSC
Wood stork	*Mycteria americana*	FT

Acronym	Status
FT(S/A)	Federally Threatened due to Similarity of Appearance
FT	Federally Threatened
FE	Federally Endangered
SSC	Species of Special Concern
ST	State Threatened
NL	Not Listed

2.3.3 FWC Wildlife Observations and FNAI Element Occurrences

A diversity of wildlife species are found on the BRWMA. The FNAI element occurrence records include five 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 TNC and the Natural Heritage Program Network based on the element's global rank (element's worldwide status) or state rank (status of element in Florida). The FNAI ranking system and definitions are located on the following website: www.fnai.org/ranks.cfm.

Known locations of FWC wildlife occurrences and FNAI element occurrences from the most recent GIS databases of the respective agencies are displayed in Figure 8. Appendix 13.4 contains a letter from the FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

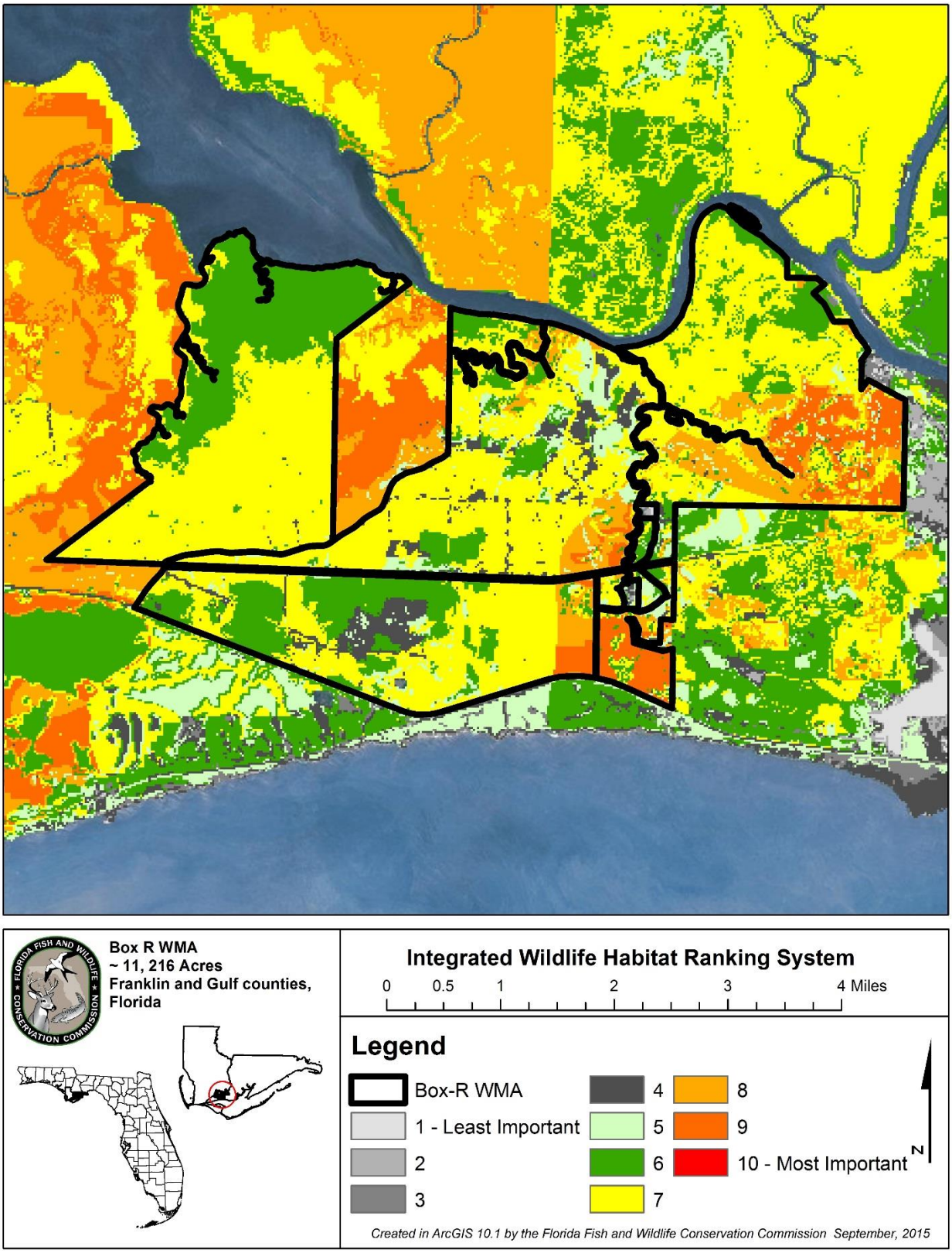

Figure 7. BRWMA Integrated Wildlife Habitat Ranking System

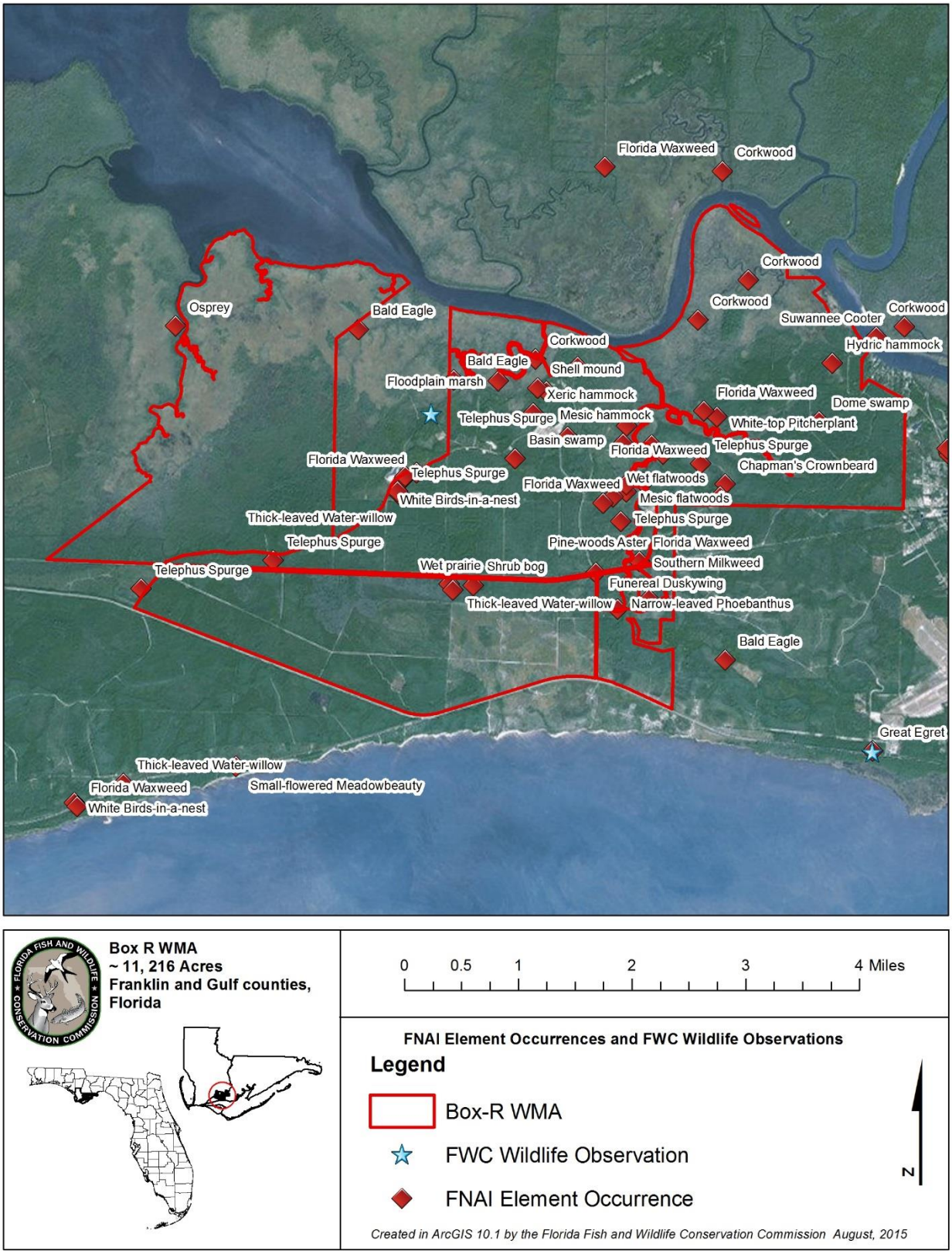

Figure 8. FWC Wildlife Observations and FNAI Element Occurrences of BRWMA

2.4 Native Landscapes

As described earlier, a variety of natural communities provide habitat for the fish and wildlife found at BRWMA. The area's tidal marshes, creeks, floodplain swamps, hammocks and pine uplands are part of a complex ecological system that includes the Apalachicola and Jackson rivers and Apalachicola Bay to the south. Complete descriptions of the natural communities found the BRWMA can be found in Section 2.2.1 of this Management Plan.

2.5 Water Resources

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

BRWMA is not included within the Apalachicola Bay Area of Critical State Concern and is not under study for such a designation.

Outstanding Florida Waters (OFW) within or adjacent to BRWMA include those listed in Table 13 below.

Table 13. Outstanding Florida Waters within or adjacent to the BRWMA

Outstanding Florida Water	Designation date
Apalachicola River Special Water	12/11/1984
Apalachicola Bay Aquatic Preserve	3/1/1979
Apalachicola River and Bay National Estuarine Research Reserve	12/1/1982, 5/14/1986 & 4/19/1988
Apalachicola acquisitions (CARL)	8/8/1994

There are levees, terraces, and flats contained in the bottomlands, although they occupy only a small fraction of the floodplain. Lake Wimico is coneced to the Apalachicola River by the Jackson River. The Jackson River bounds the BRWMA to the north. The Apalachicola and Jackson rivers and their associated streams, marshes, and floodplain forests provide habitat for a variety of sport and commercial fish populations. The Apalachicola and Jackson rivers are important components of the Apalachicola Bay ecosystem and commercial and recreational fisheries. As noted earlier, the Apalachicola Bay produces over 90 percent of Florida's oysters and is a major nursery for blue crabs and marine finfishes. Unique and outstanding wetland systems occur throughout much of the lower Apalachicola River System, including that of some rare and endangered species, which also includes habitats found within the BRWMA.

The vast floodplain forests of the lower Apalachicola River protect, feed, and nurture Apalachicola Bay. The Apalachicola River is formed by the confluence of the Chattahoochee and Flint Rivers near the point where Florida, Alabama, and Georgia converge. The Apalachicola is the lower portion of a massive drainage system that originates in the Blue Ridge Mountains in northeast Georgia and drains much of the state of Georgia and eastern Alabama before entering Florida. Numerous creeks and river tributaries also flow through the property, offering nearly unlimited recreational potential for anglers and paddlers.

The river is characterized by a wide floodplain and heavy sediment load; its fresh water, nutrients, detritus, and sediments maintain a complex system of interrelated physical and biological activities in the lower river and bay, which are essential to the sustenance of extremely productive fisheries in Apalachicola Bay. The floodplain forest and marsh also filter out pollutants and silt and buffer the area from storms, storing and slowly releasing vast amounts of water. The area serves as a vital nursery ground, since 85% of all Gulf species must spend their juvenile and larval stages in the marsh.

2.6 Beaches and Dunes

The BRWMA does not contain beaches or dunes.

2.7 Mineral Resources

According to the University of Florida soil survey of Gulf County and Franklin County, possible minerals available in Jefferson County include clay minerals like Pliocene, Miocene and Pleistocene. Possible mineral resources in Franklin County include dolostone, limestone, sand, clay, and peat. Possible minerals in BRWMA include sands. Different sands make up 82.61% of BRWMA.

Other possible mineral resources in these two counties include calcium, phosphorus-phosphates, and stone. (The following comes from the University of Florida Soil Survey and the following shape file: mrds-f12063 at http://mrdata.usgs.gov/mrds/package.php)

2.8 Historical Resources

The Florida Department of State's Division of Historical Resources (DHR) observations are broken down into five categories: archeological sites, resource groups, historical structures, historic bridges, and historic cemeteries. The DHR Master Site File indicates there are 20 sites present on the BRWMA. These include; 15 archaeological sites, two historic structures, two resource groups and one historical cemetery. FWC management staff conducts regular cultural resource monitoring on the area. All Master Site records, assessments, and preservation strategies will be coordinated with DHR.

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

As a part of this management plan, the FWC will ensure that management staff will receive Archaeological Resource Management (ARM) training. Furthermore, FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for management of these resources and prior to any facility development or other ground disturbing activities.

2.9 Scenic Resources

With its mixture of scenic uplands, wetlands and aquatic habitats, BRWMA attracts a diverse and abundant assemblage of resident and migratory wildlife. The area's tidal freshwater and estuarine marshes, creeks, bottomland hardwoods and pine flatwoods, support both rare and prevalent wildlife. The Apalachicola and Jackson rivers are important components of the Apalachicola Bay ecosystem and commercial and recreational fisheries. This peaceful spot offers productive hunting and angling and a network of unpaved roads for hikers, bicyclists and equestrians.

Expect rails, shorebirds and wading birds in the tidal marshes, while the surrounding pine uplands host brown-headed nuthatches, eastern towhees, pine warblers, red-bellied, downy and pileated woodpeckers, southeastern American kestrels and Bachman's sparrows. Bald eagles, ospreys, and swallow-tailed and Mississippi kites are common in the area.

During spring and fall migrations, check for neo-tropical songbirds in the hammocks and bottomland hardwoods. Wood ducks (and other waterfowl), red-shouldered hawks, barred owls, Acadian flycatchers, as well as northern parula and Swainson's, prothonotary, yellow-throated and hooded warblers favor floodplain swamp habitats.

3 Uses of the Property

3.1 Previous Use and Development

Prior to European settlement, the landscape of Florida, including this area of the Florida panhandle, was settled and used by a variety of aboriginal peoples whose culture relied mainly on hunting, fishing, and subsistence agriculture. It has been estimated that the Apalachicola region has been populated since the first Floridians arrived sometime between 12,000-14,550 years ago. Clam shell middens and sand burial mounds found along the Jackson River and associated creeks and swamps of BRWMA are typical of the prehistoric sites found scattered throughout the lower Apalachicola River valley. Creek Indians from Georgia and Alabama began settling along the Apalachicola River in the early 1700s.

Though some land alteration occurred, only minor alteration of the landscape is thought to have taken place until the advent of European settlement beginning with the Spanish occupation of Florida in the sixteenth century. Along with more advanced agricultural practices, the Spanish and other settlers brought livestock, primarily cattle and hogs, 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.

In 1821, Florida became a United States territory, but little changed for the Apalachicola River area, which remained remote and unsettled. However, along the coast, land purchases were increasing, in part due to the establishment of a collections house, which facilitated trade. The Territorial District of Apalachicola was created in 1823, and by 1845, the year of Florida statehood, Apalachicola was considered one of the state's most prosperous towns. This was primarily due to its role as a port for the export of cotton, shipped down the Apalachicola River from Georgia and Alabama.

Apalachicola, like many cities in the South, experienced a period of decline following the Civil War. This depression did not last long, largely due to the surge in lumber production, which helped stimulate the local economy. Although harvesting timber began before the Civil War, it was not until the early 1870s that it became a leading industry, resulting from improved transport. With the depletion of lumber forests in the north, many lumber companies turned their efforts toward the virtually untouched timber resources of the Gulf Coast.

On St. Joseph Bay, to the west of BRWMA, the town of St Joseph was founded in 1835 by settlers from Apalachicola who hoped to divert shipping traffic from Apalachicola. The Jackson River, which bounds BRWMA to the north, is connected to the Apalachicola River by Lake Wimico. St. Joseph residents successfully created a navigable waterway, linking the Apalachicola and Jackson rivers, by dredging a channel through the shallow waters of Lake Wimico. In addition, an eight-mile steam-powered railroad was constructed and operated from the lake to the town of St. Joseph.

On the political landscape, the nearby town of St. Joseph was the site of Florida's constitutional convention from December 1838 to January 1839, when the state's constitution was signed. Despite these successes, St. Joseph failed to prosper and its population dwindled after a yellow fever outbreak in 1841 and a destructive hurricane in 1844.

By the 1850s, the lumbering industry in northern Florida was becoming well-established and many small family-owned sawmills sprang up along the Apalachicola River. Logging continued to dominate the local economy, peaking around the turn of the twentieth century. Millions of board feet of longleaf pine and cypress passed through the port of Apalachicola. Pines were also sought for their sap, which was distilled into turpentine and rosin and known collectively as naval stores. By the early 1900s, few patches of unlogged forest remained in the Panhandle.

Apalachicola turned its attention to the bay and the famous Apalachicola oyster industry began in the later part of the 19th century. In 1909, Port St. Joe was founded near the former location of St. Joseph. That same year, the ANR, built sixteen miles of railroad track connecting the new settlement with Apalachicola. From Apalachicola, the track extended north to Chattahoochee. The ANR was founded in 1903 and ceased operating in 2002 when the SJC, its corporate parent, leased its line to the Rail Management Corporation. Under new ownership the system was renamed as the AN Railway but struggled to survive after the loss of mill. On June 1, 2005 the Genesee & Wyoming purchased Rail Management and since then has diversified from pulp and paper transport to chemicals, woodchips, lime, scrap paper, bauxite and lumber. In 1910, the first passengers made the 50-minute trip between Port St. Joe and Apalachicola, crossing a portion of the present day BRWMA. Regular passenger service ended in 1951, freight hauling continued until 2002. The Intracoastal Waterway route through Lake Wimico and the Jackson River opened in 1930 and connected Destin and Apalachicola. During this period, marine resources were also significant to the development of the region. The advent of refrigeration in the 1930s helped to boost this economy. Oysters and sponges, and later, shrimp and crabs, played a key role in the economic life of Apalachicola and surrounding area.

Many people came to the Florida Panhandle to find employment in the lumber industry. Most company operations were similar with work crews assigned specific tasks, such as sawing, skidding, loading, running the tram lines, etc. Initially, work was manual, but by the turn of the century, steam-powered machinery had been introduced. Prior to the establishment of the railroads, most logging operations were based in temporary camps located near work sites and rivers or streams to float the logs to the mill. When the supply of trees was exhausted, the camp would be relocated. The use of railroads in logging operations allowed companies to harvest trees in the forest interiors and transport them back to centrally located sawmills. Lumber operations varied in size. Some functioned like small towns equipped with housing for workers, a company store, schools, a doctor's office, and sometimes a theater, hotel, or a nightclub type of establishment called a "jook joint". Harbeson City was one such sawmill town, located in what is today Tate's Hell State Forest, east of the BRWMA. It was active during the 1920s and 1930s.

In the late 1920s, Edward Ball and Alfred DuPont began buying large tracts of land for timbering with funds they had earned by investing in failed banks during the Great Depression. The pair purchased the entire town of Port St. Joe, including the railroad, for the town to become the headquarters for the DuPont Company's Florida timber and paper mill enterprises. The SJC was formed in 1936 and a paper mill was built in Port St. Joe which began operations in 1938.

The Tilton sawmill that once operated on the BRWMA is located in the vicinity of the Tilton flag station of the ANR. The mill was initially owned by a Texan named Bryant

Grady Patton, the son of a Franklin County Judge. The Tilton sawmill was a large operation with a saw and various pieces of machinery, which stood on concrete footings. There was also a tram, which extended down to Huckleberry Creek, where the logs arrived from up stream. Additionally, there was a water tower, a storage yard located in the center of the complex, and two drying kilns, one predating the other. The sawmill provided housing for its workers; there were three residential areas, two for white management and employees and one for African American workers. There may also have been a cemetery. The Tilton sawmill appears to have operated from the late 1930s or early 1940s to 1957, when it was abandoned.

Another important forestry-related industry in the Apalachicola region, evidence for which can be found at the BRWMA, is the collection and production of turpentine. The industry began around 1890, peaking during the first two decades of the 20'h Century. By the end of the 1930s, many turpentine camps in the area, such as Creels, located on what is now the Apalachicola River WEA, had shifted its operations to lumber. Cat faced trees and turpentine catches were recorded by CARL archaeologists in the area of Huckleberry Landing and Sneads Hammock, indicating turpentine practices, though the exact nature of this work is unknown.

The St. Joe Company purchased the BRWMA property in the late 1950s, demolishing the sawmill row houses sometime afterward. The actual sawmill fell into ruin, with people salvaging much of the remaining materials.

The land comprising BRWMA had been part of the SJC for many years, and was known as Box-R Ranch. The ranch lands have been managed for a variety of uses including pine silviculture and a number of recreational activities including hunting, fishing, and canoeing. Hunting, however, has not always been permitted. At the request of the Ed Ball Wildlife Foundation, the area was established as a wildlife refuge in 1967 and was closed to hunting by the Florida legislature. In 1999, the SJC requested the 'wildlife refuge' status be removed to allow for hunting, for St. Joe employees and guests until it was acquired by the State in 2003.

3.2 Current Use of the Property

Currently, BRWMA is managed for the conservation and protection of fish and wildlife habitat and fish and wildlife based public outdoor recreation. A wide range of operational and resource management actions are conducted on BRWMA each year including activities such as prescribed burning; wildlife habitat restoration and improvement, timber management, invasive exotic species maintenance and contro,; road repairs and maintenance, imperiled species management, monitoring and protection, facilities and infrastructure maintenance and repair, conservation acquisition and stewardship activities, archeological and historical resources monitoring and protection, and research related activities.

Current and anticipated resource uses of the property are diverse. Hunting continues to be a popular recreational activity on BRWMA. The area also offers excellent opportunities for bird watching, especially for migratory and resident birds. This is especially so for wading birds. The diversity of vegetation not only harbors a variety of bird species but also provides good opportunities for mammalian wildlife viewing. Other uses include hiking, photography, biking, sightseeing, and horseback riding.

Due to the proximity of population centers in Franklin and Gulf counties, public use can be expected to increase as public awareness of opportunities increases. Based on collected dated for the 2015-2016 fiscal year, annual use of BRWMA is estimated to be 87,930 user-days for all activities combined. The FWC administers hunts year round, with the exception of February, for various game species including small game, deer, turkey, and feral hogs, which account for a little more than half of the area's user-days.

3.2.1 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is a primary source of economic benefits from the BRWMA, and contributes to the overall economy for the northeast region of Florida. In the 2014-2015 Fiscal Year July 1, 2014-June 30, 2015), an estimated 87,930 visitors visited the BRWMA. This visitation rate was calculated based on numbers obtained from vehicle and infrared counters at the BRWMA. An FWC economic analysis* indicates that the BRWMA generates an estimated annual economic impact of $12,967,643 in retail sales for the State and northwest Florida region. This estimated annual economic impact has aided in the creation or maintenance of an estimated 131 jobs for this region and the State.

Further revenue generating potential of BRWMA will depend upon future uses to be approved in the management plan. Since 2011, the BRWMA has generated $579,787.02 in timber revenue. During the 2015-2025 planning period a number of timber thinnings, as part of specific habitat restoration plans, are scheduled and expected to provide additional sources of revenue.

Additional revenue from environmental lands such as the BRWMA will include sales of various permits and recreational user fees and ecotourism activities, if such projects could be economically developed. Revenue will be generated from special opportunity hunts, use permits, and apiary leases.

Additional revenue is also generated from periodic timber harvests conducted to enhance the forest habitats on BRWMA. Since 2011, approximately 3,000 acres of timber were thinned generating $580,000 in timber revenue from the area. Additional timber harvest are also projected for this planning period (2006-2016.).

The annual area regulations can be consulted to clarify the necessary and required permits, fees, and regulations. The long-term values of ecosystem services to local and regional land and water resources, and to human health, through the protection of air and water quality are expected to be significant. The legislature appropriates funds for land management. Additionally, the long-term value of ecosystem services, including the protection of air and water quality functions, are considered to be significant to local and regional land and water resources, as well as human health.

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

3.3 Single- or Multiple-use Management

BRWMA will be managed under the multiple-use concept as a WMA. BRWMA will provide fish and wildlife resource based public outdoor recreation and educational opportunities, while protecting the natural and historical resources found on the area. Any natural and historical resources of BRWMA 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 BRWMA. 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 13.5). Uses classified as "Conditional" indicate that the use may be acceptable but will be allowed only if approved through a process other than the management plan development and approval process (e.g., special-use permitting, managed-area regulation and rule development). Uses classified as "Rejected" are not considered to be in accordance with the original purpose of acquisition or one or more of the various forms of guidance available for planning and management:

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

3.3.2 Incompatible Uses and Linear Facilities

Consideration of incompatible uses and linear facilities on BRWMA 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 DEP-DSL, the ARC and the Board of Trustees prior to any incompatible use or linear facility being authorized on the BRWMA.

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 BRWMA (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, FS), 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 BRWMA 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 needed quality fish and wildlife resource based public outdoor recreational opportunities. Therefore, no portion of the BRWMA is recommended for potential surplus review.

4 Accomplished Objectives from the BRWMA Management Plan 2006-2016

This section is dedicated to reporting the extent to which the Objectives described in the BRWMA Management Plan 2006-2016 (pages 41-45) were successfully completed. Accomplishments for BRWMA 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 2006-2016 BRWMA Management Plan describe the planned activities for BRWMA 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 2006 BRWMA Management Plan

Goals and Objectives	Percent Accomplished	Comments
Goal 1. Enhance, maintain, and restore the diversity and integrity of the site's natural plant communities.		
Objective 1: Utilizing the BRWMA prescribed fire plan, employ a diverse fire regime designed to achieve a desired future condition [as determined by the Objective-Based Vegetative Management (OBVM) process] on actively managed plant communities.	100%	A prescribed fire plan has been implemented on BRWMA.
Objective 2: Protect and conserve floodplain forests through hydrological restoration, appropriate fire management, and management for old-growth forest conditions.	100%	A hydrological restoration plan was implemented in conjunction with a prescribed fire plan.
Objective 3: Emphasize acquisition of adjacent conservation lands to enhance and protect natural resource integrity.	100%	FWC continues to recommend the acquisition of lands within the St. Joe Timberland Florida Forever Project (lake Wimico to St. Joe Bay Buffer) as well as lands on the FWC Florida Forever Additions and Inholdings acquisition list that are adjacent to the area. Additionally, FWC has developed an OCPB for BRWMA to further conservation efforts in the vicinity of BRWMA.

Objective 4: Continue to participate on multi-agency committees and groups dealing with Apalachicola-Chattahoochee-Flint River system issues.	100%	FWC participates with DEP/CAMA, USFWS, ARSA, Apalachicola Watershed Invasive Working Group, NWFWMD, USACE, and CISMA.
Objective 5: Continue to cooperate with the University of Georgia's School of Forest Resources Plantation Management Research Cooperative study to determine the best treatment methods for the management of slash pine plantations and naturally occurring slash pine stands.	100%	The project was completed in 2010.
Objective 6: Conserve listed plant and animal species and their habitats, including isolated wetlands, by following approved Federal and State recovery plans, guidelines, and other scientific recommendations.	100%	FWC staff follow approved Federal and State recovery plans, guidelines, and other scientific recommendations for imperiled species and all wildlife in general.
Objective 7: Coordinate with DEP to ensure enforcement of existing regulations to proactively prevent encroachment of trespass structures and floating structures.	100%	FWC coordinated with DEP to develop a strategy for prohibition of illegal structures; however, the problems associated with them remains.
Objective 8: Contract with FNAI to identify historic and current vegetative community types pursuant to OBVM by 2006.	100%	Natural community mapping was completed in 2006 and revised 2012 for BRWMA.
Objective 9: In cooperation with NWFWMD, and others, develop a hydrological restoration plan by 2007.	100%	A hydrological assessment and restoration plan was completed in 2006, and implemented by 2012. An updated hydrological assessment is planned for this planning period (2016-2026).

Objective 10: Contract for a systematic survey of rare and endangered plant species by 2006.	100%	A survey for listed and rare plants was completed in 2007 and a new survey is scheduled for 2015-16
Objective 11: By 2006, develop an access plan to assure the protection of natural and historical resources.	100%	In cooperation with DHR an access, monitoring and protection plan has been developed.
Objective 12: Develop quantifiable OBVM objectives by 2007.	100%	The BRWMA OBVM Units and associated OBVM objectives were developed for BRWMA in 2009.
Objective 13: Using the Timber Assessment developed by DOF, implement management practices consistent with OBVM objectives by 2007.	100%	The Timber Assessment was completed in 2009. A Comprehensive Timber Management Plan was completed in 2010. Additionally, approximately 3000 acres of timber were thinned generating $580,000 in timber revenue, and 466,000 LLP tubelings were planted on 965 acres during the previous planning period (2006-2016.).
Objective 14: Contract for a systematic survey of invasive exotic plant species, such as cogongrass, Chinese tallow, elephant-ear, and Japanese climbing fern by 2008.	100%	An exotic plant species survey was completed in 2007 and will be updated in the upcoming planning period.
Objective 15: Seek funding through the North Florida Upland Invasive Plant Council, or other sources, for invasive exotic plant control by 2010.	100%	Exotic plant species control has been accomplished with internal funding sources and staff .
Objective 16: To protect water resources, use the results of the hydrological assessment to restore hydrology by maintaining, improving or installing water control structures (i.e., culverts, hardened low water crossings, etc.) at appropriate locations by 2010.	100%	Appropriate elements of the hydrological plan were fully implemented by 2012.

Goal 2: Address resource information gaps by conducting surveys and inventories.		
Objective 1: Periodically update faunal inventories, emphasizing rare and listed wildlife species, including wading bird rookeries, bald eagle/osprey nests, and flatwoods salamander.	100%	Inventories were updated for bald eagle nest surveys, wading bird surveys, flatwoods salamander surveys, songbird point counts, Barbour's map turtle surveys, alligator surveys, and also through Christmas bird counts.
Objective 2: Update inventories of game wildlife species, including white-tailed deer and feral hogs.	100%	Distance sampling for WTD deer is conducted annually.
Objective 3: Contract with FNAI to identify historic and current vegetative community types pursuant to OBVM by 2006.	100%	Natural communities' mapping was completed in 2006 and revised in 2012.
Objective 4: Contract for a systematic survey of rare and endangered plant species by 2006.	100%	A rare and endangered plant survey was completed in 2007.
Objective 5: Contract for a systematic survey of invasive exotic plant species, such as cogongrass, Chinese tallow, water hyacinth and climbing ferns by 2007.	100%	An invasive exotic plant species survey was completed in 2007.
Objective 6: Contract for a systematic survey of reptile and amphibian species by 2009.	100%	FWC conducted herpetological surveys in 2008 and 2014.
Goal 3: Provide and expand nature-based recreation and educational opportunities.		
Objective 1: Continue to assess the need to close unnecessary roads and propose closures as needed.	100%	BRWMA roads are continually evaluated to maximize access while allowing closed areas for those who prefer limited vehicular access.

Objective 2: Continue to maintain and improve the existing road network, as well as roads on new acquisitions, where appropriate.	100%	Road Maintenance is ongoing and is accomplished by either, area staff, timber harvesters, or annual maintenance contracts with private vendors.
Objective 3: To provide wildlife viewing opportunities, continue to maintain existing wildlife openings, and develop new openings on appropriate disturbed sites, including those on new acquisitions.	100%	BRWMA staff maintains approximately 40 acres of previously disturbed sites as wildlife openings.
Objective 4: Continue to provide a diversity of traditional hunting opportunities, including seasons for white-tailed deer, quail, dove, gray squirrel, turkey, waterfowl, feral hog, and snipe.	100%	FWC staff continues to provide quality, sustainable hunting opportunities.
Objective 5: Involve the DHR staff in planning and development of interpretive information regarding cultural resources.	100%	FWC staff in cooperation with DHR, has developed interpretive information regarding cultural resources on BRWMA.
Objective 6: Monitor the level of public use at all boat ramps, landings, and recreational facilities to determine where picnic tables, trash receptacles, and toilet facilities may be warranted.	100%	Area staff maintains and monitors traffic and pedestrian counters.
Objective 7: Coordinate with DEP to ensure enforcement of existing regulations to proactively prevent encroachment of trespass structures and floating structures.	50%	FWC coordinated with DEP to develop a strategy for prohibition of illegal structures; however, the problem associated with them remains.
Objective 8: Continue to facilitate traditional conservation-oriented events such as the annual Ducks Unlimited social, and the annual Christmas bird count and birding outings through the Florida Panhandle Birding and Wildflower Festival.	100%	FWC continues to facilitate traditional conservation-oriented events such as these.

Objective 9: To assure adequate public recreation opportunities while protecting natural and cultural resources, develop a road network plan by 2006.	100%	A road network plan was developed in conjunction with development of the BRWMA Recreational Master Plan.
Objective 10: In partnership with Franklin County, develop and maintain a regional boat ramp at Bluff Road, and evaluate the need for a canoe/kayak launch at Huckleberry Creek (by 2006).	100%	A regional boat ramp at Bluff Road was developed and is maintained.
Objective 11: Coordinate with Franklin County to install bear resistant trash receptacles at the Bluff Road boat ramp by 2006.	100%	Bear resistant trash receptacles have been installed at the Bluff Road boat ramp was installed.
Objective 12: Utilizing the expertise of the FWC-ORS, develop a Nature-Based Recreation Master Plan by 2010.	0%	An updated BRWMA RMP will be developed in coordination with the updated Management Plan.
Goal 4: Continue to identify and protect cultural resources.		
Objective 1: Contact DHR prior to site selection for all ground-disturbing activities.	100%	DHR is contacted prior to any ground-disturbing activities.
Objective 2: Involve DHR staff in planning and development of interpretive information regarding cultural resources.	100%	FWC consulted in DHR staff with the planning and development of interpretive information regarding cultural resources.
Objective 3: Preserve existing historical structures.	100%	All existing historical structures, will be monitored and preserved.
Objective 4: By 2006, contact DHR to determine the best management of known cultural resources, and the need for further cultural resource surveys.	100%	A BRWMA Cultural Resources Management Plan was completed in 2005.
Goal 5: Maintain adequate infrastructure and supplement existing staff to facilitate operations and visitation.		
Objective 1: Continue to utilize volunteers and Department of Correction inmate labor to aid management activities.	100%	Volunteers are utilized as appropriate and feasible.

Objective 2: Supplement existing FWC staffing using appropriate OPS positions and contracted services in response to increased management workloads due to new acquisitions, NBR programs, increased visitation, etc.	100%	OPS employees are utilized as appropriate and feasible.
Objective 3: Complete the Equipment Storage and Maintenance Facility at the FWC's compound, and utilize existing structures for management and administrative offices by 2006.	100%	An Equipment Storage and Maintenance Facility was built in 2006.
Goal 6: Emphasize quality hunting opportunities.		
Objective 1: Continue to provide a diversity of traditional hunting opportunities, including seasons for white-tailed deer, quail, dove, gray squirrel, turkey, waterfowl, feral hog, and snipe.	100%	FWC continues to provide a diversity of traditional quality hunting opportunities.
Objective 2: Using prescribed burning, agricultural plantings, mowing, disking, and chemical treatments, maintain wildlife openings, and develop additional openings on disturbed areas where appropriate.	100%	FWC staff utilizes a number of management techniques to maintain wildlife openings, and develop additional openings on disturbed areas where appropriate.
Objective 3: Continue the diverse mix of hunting opportunities, including the small game, archery, muzzleloading gun, general gun, feral hog, and spring turkey hunting seasons.	100%	FWC provides a diverse mixture of quality hunting opportunities on a sustainable basis.
Objective 4: To increase hunter satisfaction, continue to pursue measures designed to improve the age structure of the male segment of the deer herd.	100%	FWC manages the deer population at BRWMA consistent with the FWC State Deer Management Plan to provide a diversity of traditional quality deer hunting opportunities.
Goal 7: Assure an optimum boundary, and develop landscape-scale linkages and wildlife corridors, by continuing to identify and pursue acquisition needs.		

Objective 1: Continue to maintain a Geographic Information System (GIS) shapefile, acreage, and other necessary data to facilitate nominations for the FWC Additions and Inholdings Program list.	100%	FWC staff maintains a GIS database to facilitate nominations for the FWC Additions and Inholdings Program list.
Objective 2: Continue to nominate parcels for addition to the FWC Additions and Inholdings Program list.	100%	FWC has developed an OCPB for the area and continues to nominate parcels for addition to the FWC florida Forever Additions and Inholdings Acquisition Program List as funding and opportunity allows.

5 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve or otherwise use fragile natural resources and nonrenewable historical resources. In general, the FWC management intent for BRWMA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity, especially fish and wildlife resources. In conjunction with this primary emphasis, it is FWC's intent to provide quality fish and wildlife resource based public outdoor recreational opportunities on BRWMA. The FWC will utilize the best available data, guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, as noted earlier, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

5.1 Land Management Review

Pursuant to Chapter 259.036, FS, the DEP-DSL is required to "cause periodic management reviews to be conducted" on Board of Trustees conservation lands to determine if they "are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to FS, 259.032."

The recommendations of 2015 LMR (Appendix 13.11) were considered and addressed in the drafting of this Management Plan. This includes the development of management intent language, goals and objectives, and identification of management challenges and development of solution strategies (Sections 4 -8).

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 BRWMA.

5.2.1 Monitoring

A well-developed monitoring protocol is also one of the principal, required criteria for the management of BRWMA. 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 5.5.1) 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 5.6.2) program. FWC staff may monitor additional fish and wildlife species when deemed appropriate. Exotic and invasive plant and animal species (Section 5.7) 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 5.8.3). Historical resources (Section 5.11) are monitored with guidance from DHR.

5.2.2 Performance Measures

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

5.2.3 Implementation

The BRWMA 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 BRWMA, 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 BRWMA, FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, and restoration of degraded 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. BRWMA has high-quality native communities including floodplain marshes, creeks, floodplain swamps, hammocks and pine uplands that FWC will continue to manage and protect. On disturbed upland sites, FWC intends to initiate ground cover and natural community restoration.

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

5.3.1 Objective-Based Vegetation Management

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

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

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

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

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

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

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

5.3.2 Prescribed Fire and Fire Management

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

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

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

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

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

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

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

The transitional areas between two adjacent but different vegetative cover types, such as forests and wetlands, are known as ecotones. With the possible exception of wildfire suppression, mechanical soil disturbance in ecotones will be avoided in order to protect habitats for important rare species that often occur between flatwoods and riparian drainages. Silvicultural site preparation and creation of firebreaks are avoided when possible in these zones. Additionally, fires are allowed to burn into the edges of marshes, swamps and other wetlands in order to maintain these habitats. Once fuel loads have been reduced and a more open appearance has returned, vegetative management objectives will likely dictate a fire return interval that averages 1-5 years, preferably during the spring and early summer months.

In addition to the general prescribed fire management guidelines described above, an area-specific Conceptual Prescribed Burn Plan has been developed and implemented for BRWMA (Appendix 13.13). 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.

5.3.3 Habitat Restoration

As previously noted, BRWMA is managed for a diversity of wildlife species through timber management (thinning and reforestation), prescribed burning and hydrological restoration. Wildlife openings are maintained and enhanced to attract deer, turkey, rabbits, quail, dove and snipe. Selective openings are planted with native or non-invasive agricultural crops to provide wildlife viewing opportunities, dove hunting and high quality forage for deer, turkey, dove and quail.

Selected upland sites are being restored. Existing slash pine and loblolly pine plantations are grown out to harvestable sizes, commercially thinned and converted to longleaf pine where appropriate. The slash and longleaf pine flatwoods communities are managed with selective thinning and regular growing season burns to promote an open and grassy understory, with scattered saw palmettos and gallberry. Regular burns reduce hardwood competition, enhance pine seed germination, recycle nutrients and provide a diverse groundcover community for a variety of wildlife species. The growth of hardwoods and woody shrubs in clear-cut areas is controlled by chemical and mechanical means and prescribed fire. These openings are then replanted in longleaf pine.

During the previous planning period a number of habitat restoration activities were conducted. Since habitat restoration activities began in 2011, over 2,696 acres of pine plantation were thinned, to reduce canopy closure thus allowing more light to penetrate the understory, promoting ground cover restoration. To reduce heavy fuel loads, small diameter hardwoods and encourage natural regeneration of pines, over 2,941 acres of fire adapted communities were maintained during a 2-3 year target-return interval. As noted

earlier, since 2006, approximately 3,000 acres of timber were thinned generating $580,000 in timber revenue, and 466,000 LLP tubelings were planted on 965 acres of understocked forest habitat. Additional similar habitat restoration is planned for this planning period (2016-2026).

To restore stand form, composition, function and, based on recommendations in the timber assessment, and Forest Management Plan (Appendix 13.12), FWC plans to conduct further timber harvests or thinnings to reduce current pine stands basal area on 1,200 acres additional acres of the area as detailed further in Section 6 of this Management Plan (Figure 11).

Staff will apply prescribed fire according to the prescribed fire plan to mimic the natural fires regimes that have been altered through fire suppression, ditching, and alteration of the natural hydrologic function in the area. Specific goals and objectives (6.1.1, 6.1.2, 6.1.8 and, 6.1.9) have been designed to keep the fire adapted communities into a maintenance condition. During the next 10-year planning period, 3,460 acres (50%) of the fire adapted communities will be burned annually within a 1-5 year target fire return interval.

As planned habitat restoration work continues on the area and the habitat is improved, the percentage of the area's fire adapted communities on which prescribed burning is conducted within established fire return intervals is projected to increase.

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, a diversity of associated wildlife, including rare, imperiled, common game, and non-game species, can be found on BRWMA. In managing for wildlife species, an emphasis will be placed on conservation, protection and management of natural communities. As noted above, natural communities important to

wildlife include upland pine, floodplain swamp, shrub bog, floodplain marsh, wet and mesic and wet flatwoods. Natural communities that are less represented on BRWMA include dome swamp, mesic hammock, basin swamp, scrubby flatwoods, sandhill, basin marsh, xeric hammock, and wet prairie.

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

The FWC intends to manage game populations on a sustained-yield basis to assure healthy game populations and a high-quality recreational experience. In general, game wildlife populations will be managed to provide continued recreational sport hunting and wildlife viewing opportunities. However, due to the limited size of the area, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations, as well as hunter safety and satisfaction. The potential for conflicts among recreational activities and user groups will also be considered and continually monitored.

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

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

5.4.2 Imperiled and Focal Species: Wildlife Conservation Prioritization and Recovery

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

management, and uses the WCPR program to ensure management is having the desired effect on wildlife.

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

The WCPR program helps FWC take a proactive, science-based approach to species management on FWC-managed lands. This approach assesses information from statewide potential habitat models and Population Viability Analysis, and in conjunction with input from species experts and people with knowledge of the area, creates site-specific wildlife assessments for imperiled wildlife species and a select suite of focal species. Staff combines these assessments with area-specific management considerations to develop a wildlife management strategy for the area. Each strategy contains area-specific measurable objectives for managing priority species and their habitat, prescribes management actions to achieve these objectives, and establishes monitoring protocols to verify progress towards meeting the objectives. By providing FWC managers with information on actions they should undertake, the FWC intends for the strategy to assure the presence and persistence of Florida's endangered and threatened fish and wildlife species (see http://myfwc.com/media/1515251/Threatened_Endangered_Species.pdf), as well as select focal species found on the area. The species list is included within the accompanying Species Management Strategy that has been developed for the area and will be included in the final version of the BRWMA Management Plan to enhance knowledge and management of the area.

In summary, for FWC-managed areas, 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 BRWMA. 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.

During the previous planning period, inventories were updated for bald eagle nest surveys, wading bird surveys, flatwoods salamander surveys, songbird point counts, Barbour's map turtle surveys, alligator surveys, and also through Christmas bird counts. Additional herpetological surveys were conducted in 2007. These imperiled species projects along with

other ongoing imperiled species management activities will continue to be implemented in accordance with the BRWMA WCPR Strategy.

5.4.3 Focal Species Selection and Management

An FWC WCPR strategy was completed for the BRWMA in 2009. Of the 60 focal species designated statewide by FWC, ten species and one group (wading birds) were modeled to have potential habitat on the BRWMA (Table 14). It is important to note, that while a particular species may be identified as having potential habitat on an area; the area may not be able to actually support the noted species in perpetuity due to a number of potential limiting factors.

This WCPR strategy presents the results of a science-based approach to evaluating focal species needs within an ecosystem management approach for the BRWMA. Natural community management focused on a set of focal species provides benefits to a host of species reliant upon these natural communities. Monitoring select species provides information that verifies whether natural community management is having the desired effect on wildlife. The imperiled and focal species identified in the BRWMA WCPR Strategy include swallow-tailed kite, Bachman's sparrow, brown-headed nuthatch, Cooper's hawk, Florida black bear, northern bobwhite, reticulated flatwoods salamander, fox squirrel, southern bald eagle, gopher tortoise, and wading birds.

It is commonly believed that most species will benefit from management that restores the natural structure and function of natural communities they use. However, for some species, specific management recommendations and precautions are necessary to ensure the continued suitability of the area for the species. Several recommendations made in the current BRWMA WCPR Strategy will help ensure BRWMA continues to fulfill its role in the conservation of these species. The complete WCPR Strategy with species specific recommendations, monitoring protocols and land management considerations can be seen in its' entirety in Appendix 13.10.

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

Table 14. Focal Species Identified as having Potential Habitat on the BRWMA

Common Name	Scientific Name	Status
American swallow-tailed kite	*Elanoides forficatus*	NL
Bachman's sparrow	*Peucaea aestivalis*	NL
Brown-headed nuthatch	*Sitta pusilla*	NL
Cooper's hawk	*Accipiter cooperii*	NL
Florida black bear	*Ursus americanus floridanus*	NL
Gopher tortoise	*Gopherus polyphemus*	ST
Northern bobwhite	*Colinus virginianus*	NL

Reticulated flatwoods salamander	*Ambystoma bishopi*	FE
Sherman's fox squirrel	*Sciurus niger shermani*	SSC
Southern bald eagle	*Haliaeetus leucocephalus*	NL
Wading birds (multiple species)	Multiple species	NL

Abbreviation	Status
FE	Federal Endangered
ST	State Threatened
SSC	State Species of Special Concern
NL	Not Listed

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 BRWMA. Control technologies may include mechanical, chemical, biological, and other appropriate treatments. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

Invasive exotic plant species found on BRWMA invasive exotics, treated annually by FWC, include mimosa, camphor tree, water hyacinth, Cuban bulrush, Japanese climbing fern, torpedo grass, Chinese tallow, sesbania, Chinese wisteria, and bull thistle. Exotic and invasive plant species have been identified as occurring at varying densities on approximately 53 acres of the BRWMA. However, the FWC's methodology for determining the number of acres "infested" with invasive exotic plants only represents a cumulative acreage, and does not reflect the degree of the invasive exotic occurrence. The degree of infestation among areas identified with invasive exotic plant occurrences often varies substantially by species, level of disturbance, environmental conditions, and the status of ongoing eradication and control efforts. The FWC will continue to focus treatments on areas identified as having invasive exotic plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring.

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

An exotic animal species of concern on the BRWMA is the feral hog. These animals have high reproductive rates, and when populations reach high densities, feral hogs can significantly degrade natural communities through foraging activity (rooting). The FWC

will consult with other regional natural resource managing agencies and private landowners to coordinate feral hog control measures as necessary. Hog populations are controlled by hunts during the wild hog-still season, archery, general gun, muzzleloading gun, and archery/muzzleloading gun seasons. Trapping is another measure that may be implemented to augment ongoing feral hog control efforts and to further reduce the natural community damage and degradation caused by this species.

5.6 Public Access and Recreational Opportunities

The BRWMA 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 BRWMA include hunting, bird watching, wildlife viewing, boating, canoeing, kayaking, hiking, bicycling, fishing, horseback riding, nature study, and photography.

Authorized recreational uses are managed consistent with the purposes for acquiring the BRWMA, including 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 ADA[4] where:

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

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

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

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

5.6.2 Recreation Master Plan

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife resource based public outdoor recreational opportunities for BRWMA. To accomplish this, FWC will work with recreational stakeholders and the general public to develop a Recreation Master Plan for BRWMA that will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. The BRWMA Recreation Master Plan is scheduled to be finalized during

the 2016-2017 fiscal year, and includes planning for parking, possible road to trail conversion, and area resource interpretation.

5.6.3 Public Access Carrying Capacity

Baseline carrying capacities for users on FWC-managed lands are established by conducting a site specific sensitivity analysis using available data for the site. The intent of the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being "immersed in nature" that visitors to FWC-managed areas desire. Carrying capacities are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated through this process are used as a tool to help plan and develop public access, wildlife viewing, and fish and wildlife resource based public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities, and the anticipated proportional visitation levels of the various user groups, FWC has determined that BRWMA can currently support 310 visitors per day. However, an objective to increase the public access carrying capacity to 460 visitors per day has been proposed in Section 6.4 of this Management Plan. It is important to note that public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area in order to protect the natural and historical resources on BRWMA and to ensure that visitors will have a high-quality visitor experience. The public access carrying capacity will be periodically reevaluated, and additional capacity may be contemplated as part of the Recreation Master Plan development and implementation process.

5.6.4 Wildlife Viewing

As described above, the area's tidal freshwater and estuarine marshes, creeks, bottomland hardwoods and pine flatwoods, support both rare and more prevalent wildlife. The Apalachicola and Jackson rivers are important components of the Apalachicola Bay ecosystem and commercial and recreational fisheries. Bald eagles, ospreys, and swallow-tailed and Mississippi kites are common in the area. The area's freshwater and floodplain marshes, creeks, bottomland hardwoods and pine flatwoods, support a number of both rare and prevalent wildlife that may be viewed on the area.

5.6.5 Hunting

Hunting opportunities at the BRWMA include seasons for archery, small game, general gun, muzzleloading gun, spring turkey, migratory bird, hog (still and dog seasons) and dove hunting. The deer, and hog populations are relatively high and hunter pursuing them account for the majority of hunter days on the area. Because limited harvest and antler restrictions, BRWMA has a higher deer density and a herd age structure than most other public conservation lands in Franklin County. A relatively low number of quota permits help to ensure a higher-quality hunting experience. A dove field is open to hunting without

a quota permit on opening day of dove season. Migratory birds may be hunted on days when statewide seasons correspond with open hunting days. An evaluation of the hunting opportunities offered on the BRWMA is performed periodically by the FWC. Additional information about the current hunting opportunities and regulations on the area may be found at http://myfwc.com/hunting/wma-brochures/nw/box-r/.

5.6.6 Fishing

Fishing is authorized year-round at the BRWMA. The Apalachicola River, Jackson River and small creeks and tributaries on the property offer excellent angling opportunities. Nearby Lake Wimico, a 4,055-acre shallow, natural lake accessible from the Intracoastal Waterway (Jackson River), is a popular spot. A public boat launch is located on the Apalachicola River on the northeast side of the property off of Bluff Road.

5.6.7 Paddling

Motorized and non-motorized boats may be launched at off-site facilities, which will provide access to the Apalachicola and Jackson rivers that border the property. Canoes and kayaks may enter two of the site's narrow creeks, Huckleberry Creek and Little Huckleberry Creek from these two rivers. Many paddling opportunities are also available on the adjacent ARWEA.

5.6.8 Bicycling

Bicycling is permitted year round on the BRWMA. Bicycles are allowed on all roads.

5.6.9 Horseback riding

Horseback riding is permitted on the BRWMA. Riders may use the 42 miles of existing unpaved roads to explore the site, experiencing solitude, good scenery and abundant wildlife. Horse trailers may be parked at the main entrance or at the Henry Abercrombie Jr., Public Boat Ramp near the Bluff Road entrance.

5.6.10 Roads and Trails

Currently, no formal trails have been developed but recreational users have access to the 42 miles of existing unpaved roads for equestrian, hiking, and biking use throughout the area.

5.6.11 Geocaching

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

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

specific guidelines. These guidelines may be found on the following FWC website: http://myfwc.com/media/1074886/FWC_Geocache_Guidelines.pdf .

5.6.12 Environmental Education/ Interpretation

Interpretive signage and resource interpretation materials are provided at the main entrance and on the FWC website. Additionally, area staff maintain an informational kiosk, an area brochure, and a comprehensive bird list for interpretation and education of the area.

5.7 Hydrological Preservation and Restoration

5.7.1 Hydrological Assessment

A hydrologic needs assessment and restoration plan was completed by the NWFWMD for BRWMA in 2006. The full implementation of the hydrological restoration plan was completed in the 2012-2013 Fiscal Year. To maintain and enhance natural hydrological functions, the FWC has installed low-water crossings to improve sheet flow. Additional completed projects include; 9 culverts were installed, 9 culverts were removed, 5 hardened low water crossings were installed, 5 ditch plugs were installed, 2 ditch plugs were removed, and staff gauges were installed to monitor water levels.

5.7.2 Water Resource Monitoring

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

5.8 Forest Resource Management

In 2009, a complete timber inventory was conducted on the BRWMA. The information gathered in the inventory was used to create a Comprehensive Forest Management Plan for BRWMA. This plan was completed in 2010. The intent of this plan is for FWC to receive a comprehensive and prescriptive silvicultural plan that will guide decisions regarding timber management. These decisions are based on restoration, management, and revenue. The goal of this plan is restoration; based on FNAI Historic Natural Community Mapping. The conversion of existing slash pine plantations to mixed stands that are composed primarily of longleaf pine, while maximizing existing vertical structural

diversity without hampering the prescribed fire program, is being conducted in mesic and wet flatwoods typed areas.

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

Pursuant to OBVM management goals, FWC will continue to manage timber resources for wildlife benefits and natural community restoration. As noted in section 2.2.2, management activities including the use of timber thinning and harvesting may be utilized. The primary management techniques for encouraging reforestation is the underplanting of long leaf pine tubelings and the protection of young trees and seedlings on these sites from damage. However, where. In several areas where natural regeneration is lacking, artificial reforestation is implemented. Planting trees on these selected sites is used to increase the rate of reforestation and to ensure diversity. Forested wetlands are managed for stands with old growth characteristics. Snags will be protected to benefit cavity-nesting species.

5.8.1 Timber Management Plan

As noted above, a Comprehensive Forest Management Plan was completed for BRWMA in 2010. This plan was utilized to evaluate the area's timber resources and to explore the feasibility of utilizing silvicultural techniques as a management activity on the area. The FWC will continue to cooperate with the FFS or professional forester, if needed, on the Timber Assessment. Also, the FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. In addition, as described above, FWC will continue to implement the BRWMA Forest Management Plan to aid in the ongoing implementation of habitat restoration management activities which will seek to restore altered areas to their historic natural community types. This Forest Management Plan includes reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of the BRWMA.

5.9 Historical Resources

Procedures outlined by DHR will be followed to preserve the historical sites of BRWMA. The FWC will consult with DHR in an attempt to locate any additional historical features on the area. In addition, FWC will ensure management staff has DHR ARM training. The FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for management of these resources, and prior to any facility development or other ground disturbing activities.

Furthermore, as appropriate and necessary, FWC will contact professionals from DHR for assistance prior to any ground-disturbing activity on BRWMA.

To date, the DHR Master Site File indicates there are 20 sites present on the BRWMA. These include; 15 archaeological sites, two historic structures, two resource groups and one historical cemetery. The FWC will submit subsequently located historic sites on BRWMA to DHR for inclusion in their Master Site File. In cooperation with DHR, all of the known historic sites on BRWMA have been identified as meeting the DHR's special criteria for annual monitoring and reporting; FWC will continue to monitor and report on these sites annually.

5.10 Capital Facilities and Infrastructure

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

Current capital facilities and infrastructure on BRWMA include three facilities and 42 miles of roads. The facilities include public access, operational, administrative, and staff housing facilities.

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 BRWMA. 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/ . The OCPB for the BRWMA is shown in Figure 9.

Additionally, conservation of lands within the St. Joe Timberlands Florida Forever Project - Lake Wimico to St. Joe Bay Buffer Unit, remain essential to the conservation of fish and wildlife resources in the vicinity of BRWMA.

5.11.4 FWC Florida Forever Additions and Inholdings Acquisition List

Currently, there are several parcels included on the FWC Florida Forever Additions and Inholdings list for the BRWMA. The various parcels combined, comprise 30,597.89 acres. Upon completion of the CAS, additions to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended.

More information, including maps and other data, regarding the location and parcel data, for those parcels on the FWC Florida Forever A & I Acquisition List will be provided in the Conservation Action Strategy that is being developed for the area which will be incorporated into this plan upon completion and approval of the CAS.

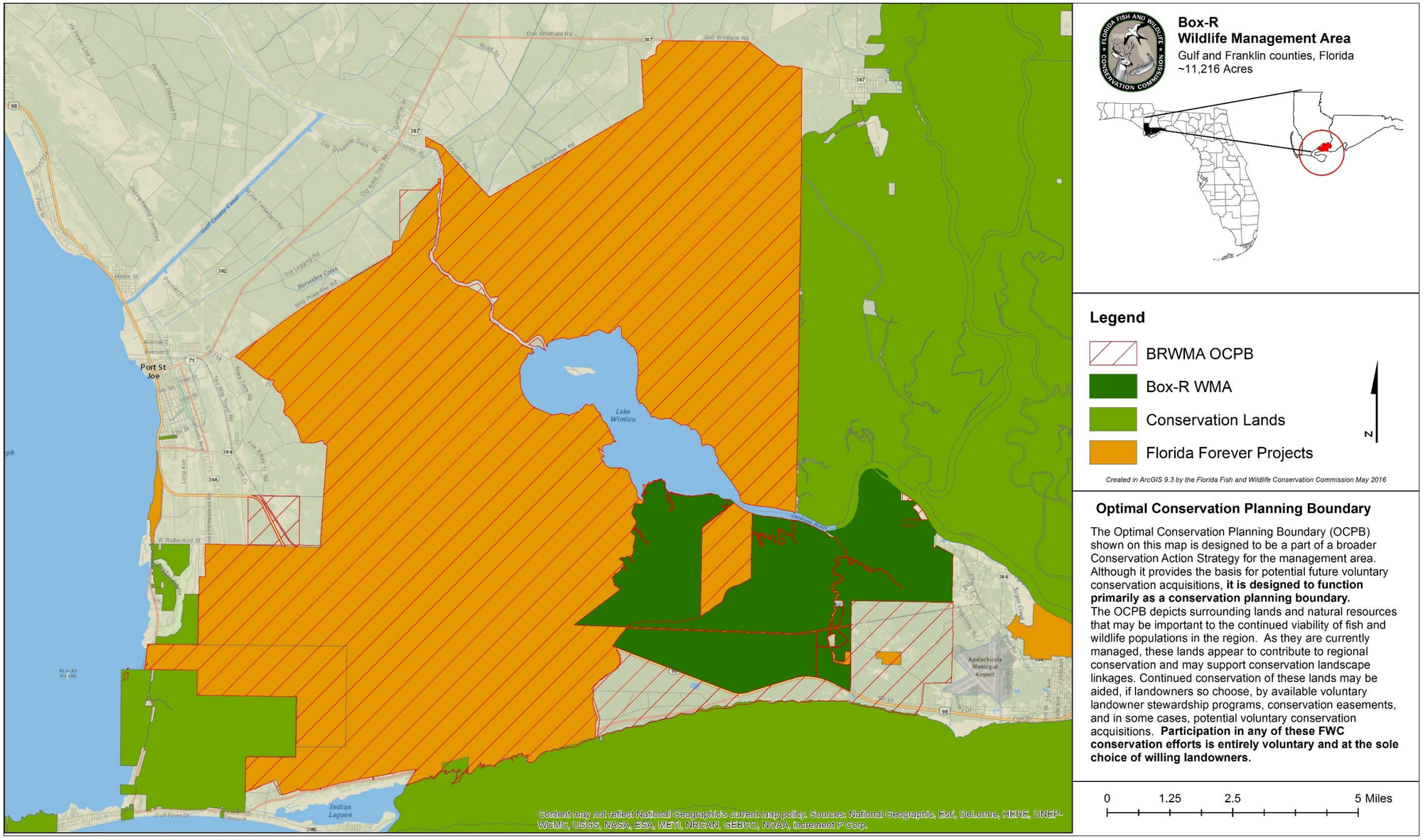

Figure 9. OCPB for the BRWMA

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5.12 Research Opportunities

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

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of BRWMA as set forth in the lease agreements with the Board of Trustees and the NWFWMD. In keeping with the lease agreements, and in order to conduct its management operations in the most effective and efficient manner, the FWC cooperates with other agencies to achieve management goals and objectives described in this management plan.

These include cooperating with DHR to ensure the requirements of the Management Procedures Guidelines - Management of Archaeological and Historical Resources document (Appendix 13.7) are followed with regard to any ground-disturbing activities. In addition, the FFS is a designated cooperating agency, and may assist FWC by providing technical assistance on forest resource management if requested. Also, FWC cooperates and consults with the NWFWMD and DEP for the monitoring and management of both ground and surface water resources and the overall management of BRWMA.

5.13.2 First Responder and Military Training

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

Additionally, the Gulf Regional Air Space Initiative (GRASI) is a continuation of ongoing, mutually beneficial cooperation among the Department of Defense (DOD) and its military branches, including the United States Air Force (USAF), State and regional agencies, on issues related to military readiness and conservation. The GRASI was initiated to prepare for the addition to the regional airspace (Northwest Florida) of the Joint Strike Fighter (F-35), as well as additional training needs of air and ground units of the military. The GRASI's primary purpose for FWC-managed lands is to allow important military ground

training activities on areas where related ground-support air activities can also be safely conducted, and thereby relieve congestion in other restricted airspaces.

The FWC participates in GRASI along with a consortium of military, state and regional agencies (DEP, DACS, FFS, NWFWMD, TNC, Florida Department of Economic Opportunity, USFS, NPS, DOD, and USAF). The GRASI consortium of agencies have worked to assess and recognize mutually compatible areas for training that minimize adverse impacts to natural resources and public recreational opportunities. As a result of this effort, FWC has identified and provided to the military a list of FWC-managed lands with potential for GRASI training areas. To further determine the suitability of the recommended FWC-managed areas, FWC and military personnel will coordinate site visits for areas of interest.

In addition, a GRASI Memorandum of Agreement (MOA; Appendix 13.14) between FWC and the USAF was developed and signed by FWC. Similar MOAs between other GRASI consortium entities and the USAF have also been developed and enacted. In general, the FWC GRASI MOA outlines management responsibilities and activities of the participating entities that are considered compatible among all parties and that are not expected to unreasonably impact the managed lands. The GRASI MOA further calls for FWC and USAF personnel to work cooperatively to develop an "Annual Operations Plan."

To advance our shared national and State interests, FWC will continue to coordinate and cooperate with the USAF, other branches of the military, and other GRASI consortium members to achieve the goals of GRASI, and fulfill the commitments established in the FWC GRASI MOA. As with first-responder and other training described above, GRASI-related military training activities that are not low-impact, intermittent and occasional would require an amendment to this management plan, and therefore will be submitted by FWC to DSL and ARC for approval consideration and prior to authorization.

At this time the USAF and FWC have agreed to allow GRASI related training as outlined in a GRASI Training plan developed for BRWMA by the USAF (Appendix 13.14) at one location on BRWMA, which entails the periodic location and use of a Mobile Transmitter Device on the area in association with other related training. Final approval for this use of the area by the USAF will be considered as a part of the overall approval of this management plan when ARC considers the plan for approval.

5.13.3 Apiaries

Currently, there are two apiaries operating on BRWMA. The use of apiaries is conditionally approved for BRWMA 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 13.5). Location, management, and administration of apiaries on BRWMA will be guided by the FWC Apiary Policy (Appendix 13.6).

The FWC Apiary Policy (Appendix 13.6) will be followed with regards to site location, management, and administration of apiaries.

5.14 Climate Change

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

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

This apparent change in global climate has the potential to disrupt natural processes; in some areas, climate change may cause significant degradation of ecosystems that provide services such as clean and abundant water, sustainable natural resources, 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;[6, 7, 8] more frequent invasions and outbreaks of exotic invasive species;[9] and loss of habitat in coastal areas due to sea level rise.[10] Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range

shifts as their distributions track changing climatic conditions. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7 – 4.5° F.[11] A number of ecosystems are projected to be affected at temperature increases well below these levels.

At this time, the potential effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. For example, FWC has begun a process for currently developing climate change adaptation strategies for monitoring, evaluating, and determining what specific actions, if any, may be recommended to ameliorate the projected impacts of climate change on fish and wildlife resources, native vegetation, and the possible spread of exotic and invasive species. Currently, FWC is continuing its work on the development of these potential adaptation strategies. However, as noted above, the effects of climate change may become more frequent and severe within the time period covered by this Management Plan.

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

Elements of climate change that may potentially affect BRWMA include inundation and saltwater intrusion from sea level rise (Figure 10), more frequent and more potent storm events, alteration of vegetation reproductive cycles, and changes in the fire regime. The results of a Sea Level Affecting Marsh Model for the BRWMA shows habitats that may potentially be impacted. The low-lying coastal habitats, such as salt marsh and hardwood swamp natural communities are projected to face the most direct and dramatic impacts of climate change, particularly from a projected rising sea level and from the projected increased frequency and intensity of coastal storms.[12, 13, 14, 15] 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.[16, 17] Projected salt water intrusion into the subsurface freshwater lens from potential sea level rise and saltwater inundation of surface freshwaters from storm surges may alter coastal ecosystems and freshwater marshes, possibly resulting in more salt-tolerant aquatic plant communities.

To address the potential impacts of climate change on the BRWMA, Goals and Objectives have been developed as a component of this Management Plan (Section 6.12). Depending on the recommendations of the adaptive management strategies described above, additional specific goals and objectives to mitigate potential climate change impacts may be developed for the BRWMA Management Plan in the future.

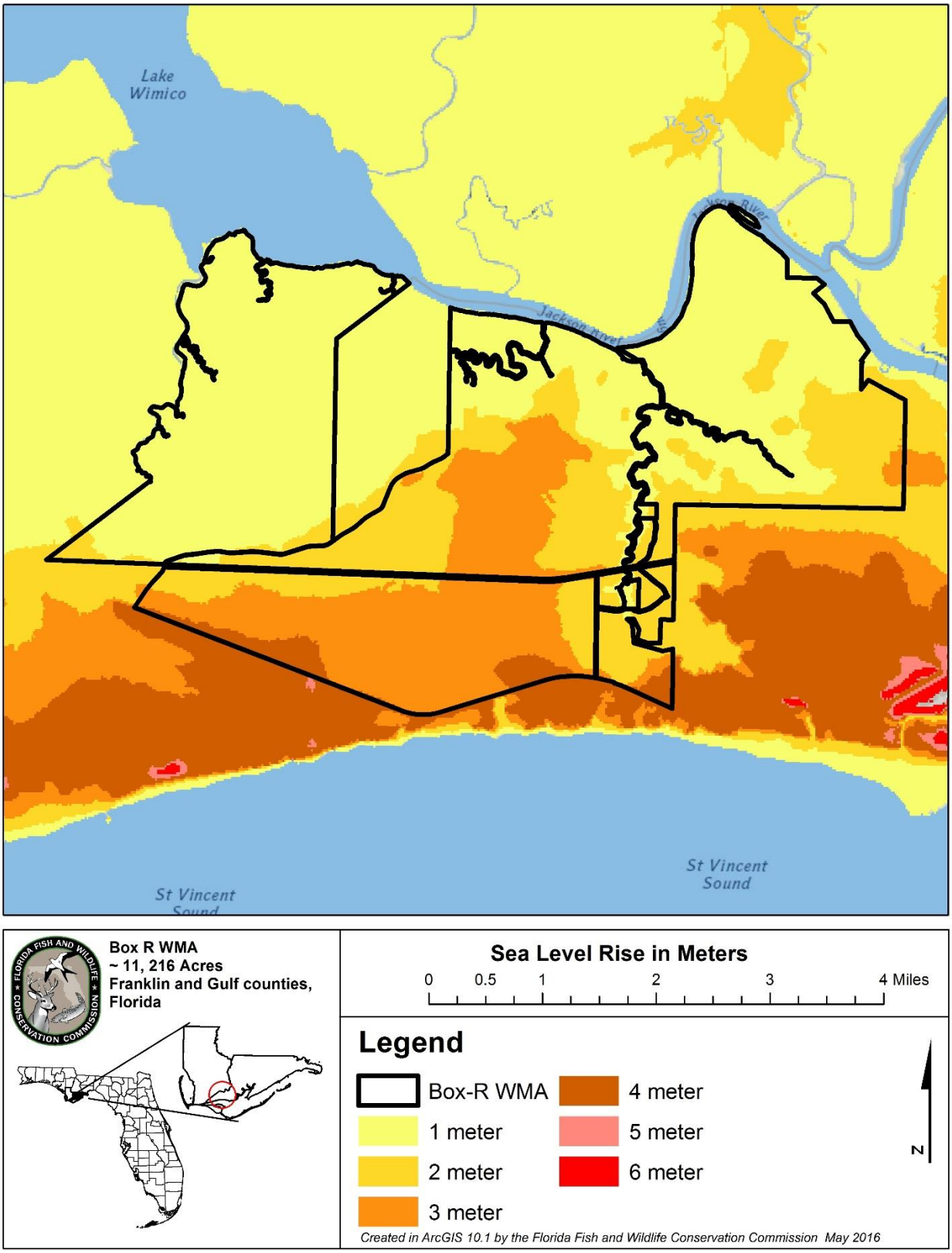

Figure 10. Potential Sea Level Rise in Meters for BRWMA

5.15 Soil and Water Conservation

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

6 Resource Management Goals and Objectives

The management goals described in this section are considered broad, enduring statements designed to guide the general direction of management actions to be conducted in order to achieve an overall desired future outcome for BRWMA. The objectives listed within each management goal offer more specific management guidance and measures, and are considered the necessary steps to be completed to accomplish the management goals. Many of the objectives listed have specific end-of-the-calendar-year target dates for completion and all of them are classified as having either short-term (less than two years) or long-term (up to ten years) timelines for completion. The objectives that can be represented spatially are shown in Figure 11.

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 1,500-2,000 acres of fire adapted communities per year.

6.1.2 Maintain 3,460 acres of fire adapted communities (50%) within 1 - 5 year target fire return interval.

6.1.3 Continue to implement the prescribed burn plan.

6.1.4 Conduct habitat/natural community improvement on 50 acres per year including mechanical vegetation management (roller-chopping, mulching, mowing).

6.1.5 Conduct habitat/natural community restoration on 800 acres including hardwood removal, pine thinning, herbicide treatments, longleaf pine planting, and other viable vegetation management techniques.

6.1.6 Coordinate and cooperate with the Apalachicola Regional Stewardship Alliance (ARSA), National Wild Turkey Foundation (NWTF) and other partners on potential grant funding opportunities for natural community restoration.

6.1.7 Continue to implement an OBVM program.

Long-term (UP TO 10 YEARS)

6.1.8 Continue to conduct prescribed burning on 1,000-2,000 acres of fire adapted communities per year.

6.1.9 Continue to maintain 3,460 acres of fire adapted communities (50%) per year within target fire return interval.

6.1.10 Continue to implement the prescribed burn plan.

6.1.11 Continue to implement an OBVM program.

6.1.12 Conduct habitat/natural community improvement on 50 acres per year including mechanical vegetation management (roller-chopping, gyrotrac, mowing).

6.1.13 Conduct habitat/natural community restoration on 1,300 acres including hardwood removal, pine thinning, herbicide treatments, longleaf pine planting (800 acres), and other viable vegetation management techniques.

6.1.14 Coordinate and cooperate with the Apalachicola Regional Stewardship Alliance (ARSA), National Wild Turkey Foundation (NWTF) and other partners on potential grant funding opportunities for natural community restoration.

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 Continue to implement a WCPR Strategy that would benefit imperiled and focal species including, but not limited to, swallow-tailed kite, Bachman's sparrow, southern bald eagle, brown-headed nuthatch, Cooper's hawk, Florida black bear, fox squirrel, gopher tortoise, Northern bobwhite, and wading birds.

6.2.2 As described in the WCPR Strategy, continue to monitor for breeding grassland birds, nesting bald eagles, and nesting wading birds.

6.2.3 As described in the WCPR Strategy, continue habitat restoration in the Strategic Management Area identified for Bachman's sparrow.

6.2.4 Continue to collect opportunistic wildlife and plant species occurrence data for rare and imperiled species.

6.2.5 Continue to monitor and protect at least 10 species of rare or imperiled plants, including and not limited to; (Telephus spurge, white birds-in-a-nest, Florida waxweed, thick-leaved water-willow, white-top pitcherplant, corkwood, pine lily, narrow-leaved phoebanthus, parrot pitcherplant, Chapman's crownbeard), as well as, to maintain and protect habitat for any rare/imperiled plant that could occur on the area as well.

Long-term

6.2.6 Continue to implement a WCPR Strategy that would benefit imperiled and focal species including, but not limited to, swallow-tailed kite, Bachman's sparrow, southern bald eagle, brown-headed nuthatch, Cooper's hawk, Florida black bear, fox squirrel, gopher tortoise, Northern bobwhite, and wading birds.

6.2.7 Continue to collect opportunistic wildlife and plant species occurrence data for rare and imperiled species on the area.

6.2.8 As described in the WCPR Strategy, continue habitat restoration in the Strategic Management Area identified for Bachman's sparrow.

6.2.9 Revise and update the WCPR Strategy.

6.2.10 Continue to monitor and protect at least 10 species of rare or imperiled plants, including and not limited to; (Telephus spurge, white birds-in-a-nest, Florida waxweed, thick-leaved water-willow, white-top pitcherplant, corkwood, pine lily, narrow-leaved phoebanthus, parrot pitcherplant, Chapman's crownbeard), as well as, to maintain and protect habitat for any rare/imperiled plant that could occur on the area as well.

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 conduct annual spotlight monitoring (distance sampling) surveys for white tailed deer.

6.3.2 Continue to collect biological harvest data at the check station.

6.3.3 Continue to collect opportunistic wildlife occurrence data.

6.3.4 Continue to maintain 40 acres of previously disturbed sites as wildlife openings or food plots.

6.3.5 Continue to conduct annual songbird point counts, eagle nest surveys, wading bird surveys, and Christmas bird counts.

6.3.6 Continue to participate in annual mourning dove banding program.

6.3.7 Continue to conduct chronic wasting disease (CWD) surveillance as determined by FWC protocols.

Long-term

6.3.8 Conduct comprehensive survey for reptile and amphibian species.

6.3.9 Continue to conduct annual spotlight monitoring (distance sampling) surveys for white tailed deer.

6.3.10 Continue to collect biological harvest data at check station.

6.3.11 Continue to collect opportunistic wildlife occurrence data.

6.3.12 Continue to maintain 40 acres of previously disturbed sites as wildlife openings or food plots.

6.3.13 Continue to conduct annual songbird point counts, eagle nest surveys, wading bird surveys, and Christmas bird counts.

6.3.14 Continue to participate in annual mourning dove banding program.

6.3.15 Continue to conduct CWD surveillance as determined by FWC protocols.

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 5 acres of FLEPPC Category I and Category II invasive exotic plant species.

6.4.2 In cooperation with FNAI, complete a survey of invasive and exotic plants.

6.4.3 As necessary, implement control measures on at least 10 exotic species including, but not limited to; bull thistle, mimosa, camphor tree, water hyacinth, Japanese climbing fern, torpedo grass, Chinese tallow, Chinese wisteria, Cuban bulrush, sesbania.

6.4.4 Continue to implement control measures on one exotic and nuisance animal species (feral hog), including increased hunting and trapping as appropriate.

6.4.5 Continue to monitor for exotic animal species and control as necessary.

6.4.6 Work with Apalachicola River Stewardship Alliance (ARSA), Cooperative Invasive Species Management Area (CISMA) to identify and control Early Detection and Rapid Response (EDRR) species.

Long-term

6.4.7 Continue to annually treat at least 5 acres of EPPC Category I and Category II invasive exotic plant species.

6.4.8 Evaluate the need to conduct an updated survey of invasive exotic plants.

6.4.9 As necessary, implement control measures on at least 10 exotic species including, but not limited to; bull thistle, mimosa, camphor tree, water hyacinth, Japanese climbing fern, torpedo grass, Chinese tallow, Chinese wisteria, Cuban bulrush, sesbania.

6.4.10 Continue to implement control measures on one exotic and nuisance animal species (feral hog), including increased hunting and trapping as appropriate.

6.4.11 Continue to monitor for exotic animal species and control as necessary.

6.4.12 Work with ARSA, CISMA to identify and control EDRR species.

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 310 visitors per day.

6.5.2 Develop additional public access and recreational opportunities to allow for a carrying capacity of 460 visitors/day

6.5.3 Continue to provide a website, single panel kiosk, trail map, and a bird list for interpretation and education.

6.5.4 Develop a trail map.

6.5.5 Develop 5 miles of trails.

6.5.6 Develop an updated Recreational Master Plan

6.5.7 Monitor trails annually for visitor impacts.

6.5.8 Continue to provide hunting opportunities for deer, turkey, small game, migratory birds, and feral hogs.

6.5.9 Continue to provide paddling opportunities on appropriate water bodies.

6.5.10 Continue to provide fishing opportunities on appropriate water bodies.

6.5.11 Continue to maintain fishing and boating access in cooperation with Franklin County at the Henry Abercrombie Jr. Public Boat Ramp.

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

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

Long-term

6.5.14 Monitor trails annually for visitor impacts.

6.5.15 Reassess recreational opportunities every three years.

6.5.16 Continue to provide hunting opportunities for deer, turkey, small game, migratory birds, and feral hogs.

6.5.17 Continue to provide paddling opportunities on appropriate water bodies.

6.5.18 Continue to provide fishing opportunities on appropriate water bodies.

6.5.19 Continue to maintain fishing and boating access in cooperation with Franklin County at the Henry Abercrombie Jr. Public Boat Ramp.

6.5.20 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.

6.5.21 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 To maintain and enhance natural hydrological functions, install and maintain low-water crossings, culverts, and other water control structures as appropriate.

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

6.6.3 As recommended by the Hydrology Assessment and Conceptual Restoration Plan, continue to maintain low-water crossings and culverts as appropriate to maintain and enhance natural hydrological functions.

Long-term

6.6.4 To enhance natural hydrological functions, continue to maintain low-water crossings and culverts as appropriate.

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

6.6.6 Continue to restore natural hydrologic condition and functions on the area.

6.6.7 Evaluate the need to contract for an updated hydrology assessment.

6.6.8 Continue to support and provide technical assistance as needed to multi-agency committees and groups dealing with Apalachicola-Chattahoochee-Flint River system and Apalachicola Bay issues (water distribution and quality problems) to protect and restore water resources including Apalachicola Bay fisheries, restore sloughs, and natural hydroperiods.

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

6.7.2 Continue to implement the Comprehensive Forest Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of BRWMA.

6.7.3 Continue to work with ARSA in grant funding opportunities from various sources for longleaf pine restoration.

Long-term

6.7.4 Continue to implement the Comprehensive Forest Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of BRWMA.

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

6.7.6 Evaluate the need to contract for an updated Timber Assessment and Forest Management Plan by 2022.

6.7.7 Conduct habitat/natural community restoration activities including timber harvesting on 1,200 acres.

6.7.8 Continue to work with ARSA in grant funding opportunities from various sources for longleaf pine restoration.

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 for visitor impacts.

6.8.2 Continue to maintain 12 facilities as feasible. This includes 2 entrance signs, 1 kiosk, check station, 2 pole-barns, office, Box-R Cottage, pump house, and 3 portable storage buildings.

6.8.3 Maintain 42 miles of roads.

6.8.4 Improve or repair 3 facilities and 42 miles of roads.

Long-term

6.8.5 Monitor trails and infrastructure biannually for visitor impacts.

6.8.6 Continue to maintain 12 facilities as feasible.

6.8.7 Construct two new facilities including an entrance package and interpretive improvements to Tilton Town.

6.8.8 Continue to maintain 42 miles of roads.

6.8.9 Continue to maintain approximately 5 miles of trails existing on site.

6.8.10 Explore the feasibility of a paddling launch site on Huckleberry Creek.

6.8.11 Improve or repair 3 facilities, 42 miles of roads, and approximately 5 miles of trails existing on site.

6.9 Archeological and Historical Resources

Goal: Monitor, protect, preserve, and maintain the cultural resources of the BRWMA.

Short-term

6.9.1 Ensure all known BRWMA historical sites are recorded in the DHR Master Site file.

6.9.2 Cooperate with DHR to manage and maintain known existing historical resources.

6.9.3 Continue to monitor, protect, and preserve as necessary 20 identified and recorded sites.

6.9.4 Coordinate with DHR to assess the need for conducting additional or updated cultural resource surveys on the area as required.

6.9.5 Follow DHR archeological guidelines for determining what activities require site evaluation and monitoring for cultural resources before, during and/or after management activities on the area.

Long-term

6.9.6 Continue to ensure all known BRWMA historical sites are recorded in the DHR Master Site file.

6.9.7 Continue to cooperate with DHR to manage and maintain known existing historical resources.

6.9.8 Continue to monitor, protect, and preserve as necessary 20 identified and recorded sites.

6.9.9 Ensure BRWMA area management staff has DHR ARM training.

6.9.10 Continue to coordinate with DHR to assess the need for conducting additional or updated cultural resource surveys on the area as required.

6.9.11 Continue to follow DHR archeological guidelines for determining what activities require site evaluation and monitoring for cultural resources before, during and/or after management activities on the area.

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, DEP/CAMA, USFWS, CISMA and Apalachicola Watershed Invasive Working Group.

6.10.2 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 habitat, landscape-scale linkages, wildlife corridors, and operational/resource management needs.

6.11.2 Identify and develop conservation stewardship partnerships.

6.11.3 Identify and pursue conservation acquisition needs.

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

6.11.5 Develop a Conservation Action Strategy.

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

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

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

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

6.11.10 Identify potential conservation easements donations.

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

6.11.12 Continue to partner with Franklin County, the City of Apalachicola and the Apalachicola Regional Stewardship Alliance.

Long-term

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

6.11.14 Continue to identify and develop conservation stewardship partnerships.

6.11.15 Continue to identify and pursue conservation acquisition needs.

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

6.11.17 Continue to partner with Franklin County, the City of Apalachicola and the Apalachicola Regional Stewardship Alliance.

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

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

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

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

6.11.22 Continue to identify potential conservation easements donations.

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

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 BRWMA.

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 BRWMA.

6.12.2 Incorporate appropriate climate change adaptation strategies into the WCPR for the BRWMA.

6.12.3 As appropriate, update the BRWMA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of BRWMA'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 BRWMA Recreation Master Plan.

6.13 Cooperative Management and Special Uses

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

Short-term

6.13.1 Continue to cooperate with Franklin County on the management of the Abercrombie boat ramp.

6.13.2 Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as GRASI and other initiatives as appropriate and compatible with the conservation of BRWMA.

6.13.3 Continue to cooperate with partner agencies and organizations on Gulf Restoration funding (Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act), Natural Resource Damage Assessment (NRDA), and The National Fish and Wildlife Foundation (NFWF)) for the area.

6.13.4 Continue to cooperate with regional first responder agencies to provide first responder training as appropriate and compatible with the conservation of BRWMA.

6.13.5 Continue to cooperate with FFS, DEP, TNC, NWFWMD, and others as appropriate in the operation and natural resource management of BRWMA.

Long-term

6.13.6 Continue to cooperate with Franklin County on the management of the Abercrombie boat ramp.

6.13.7 Continue to coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as GRASI and other initiatives as appropriate and compatible with the conservation of BRWMA.

6.13.8 Continue to cooperate with partner agencies and organizations on Gulf Restoration funding (RESTORE Act, NRDA, and NFWF) for the area.

6.13.9 Continue to cooperate with regional first responder agencies to provide first responder training as appropriate and compatible with the conservation of BRWMA.

6.13.10 Continue to cooperate with FFS, DEP, TNC, NWFWMD, and others as appropriate in the operation and natural resource management of BRWMA.

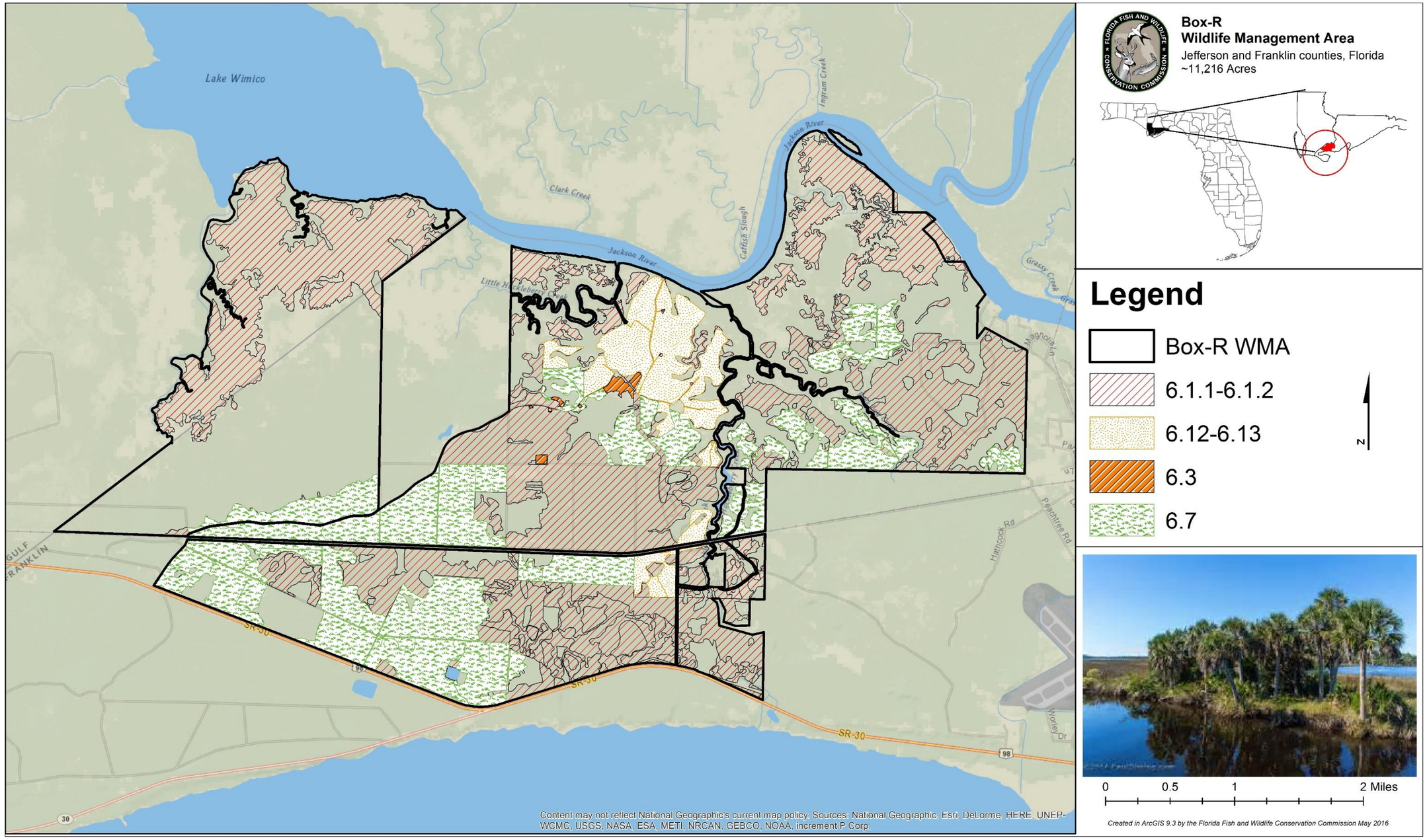

Figure 11. Objectives Map for the BRWMA

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

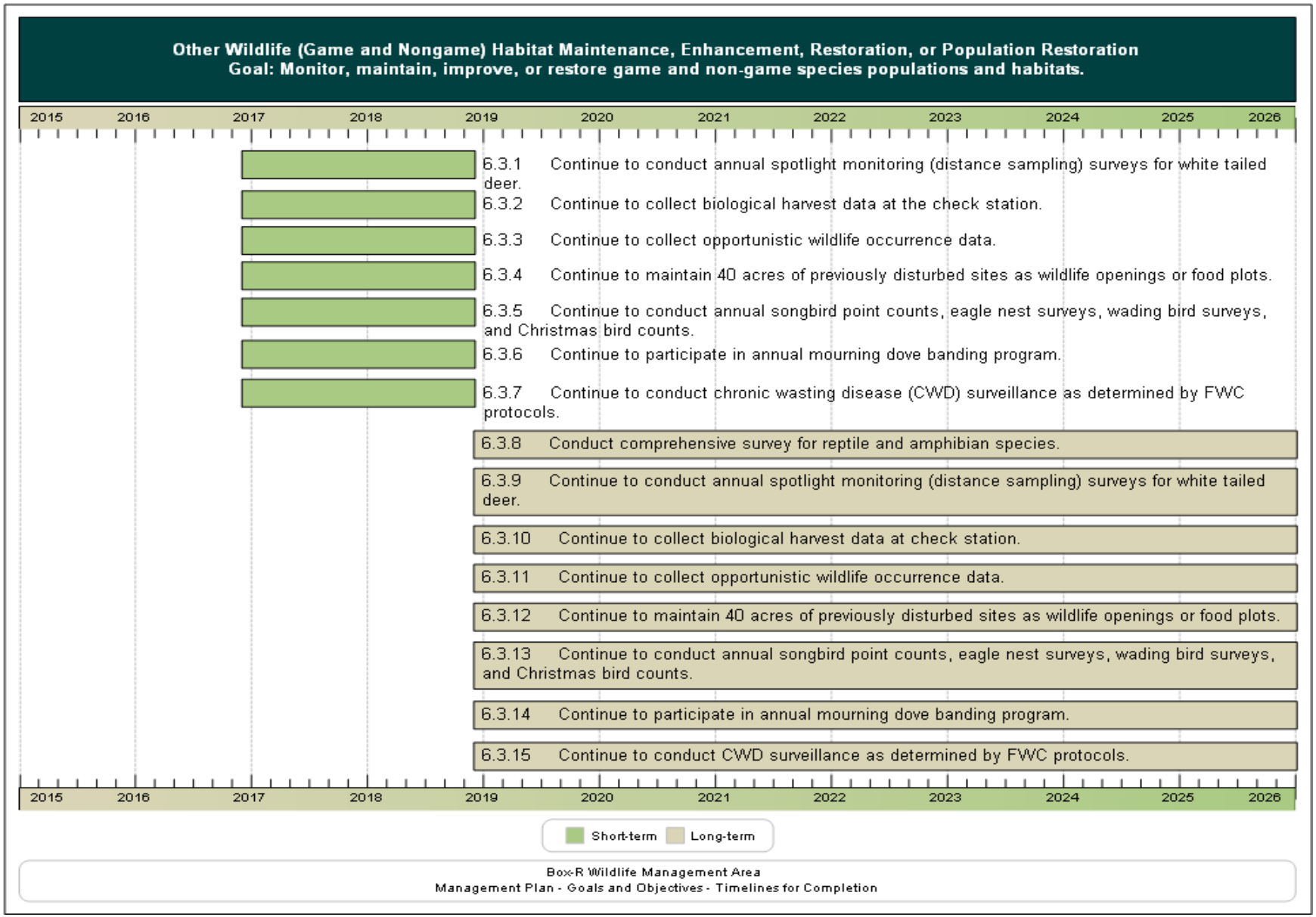
The following section presents the short- and long-term goals and objectives for the management of BRWMA graphically in a timeline format. These timelines directly reflect the short- and long-term goals and objectives presented above in Section 6.

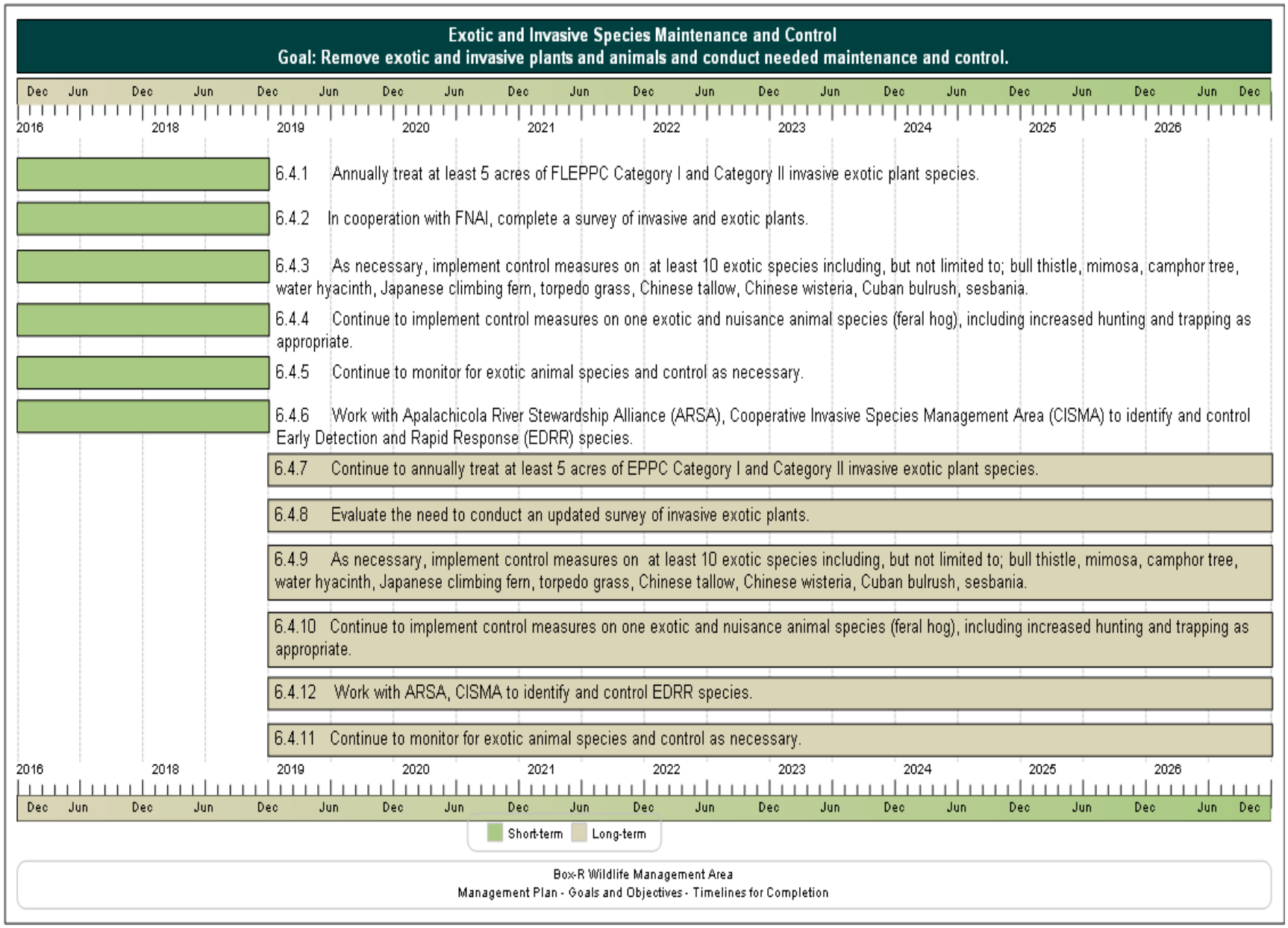




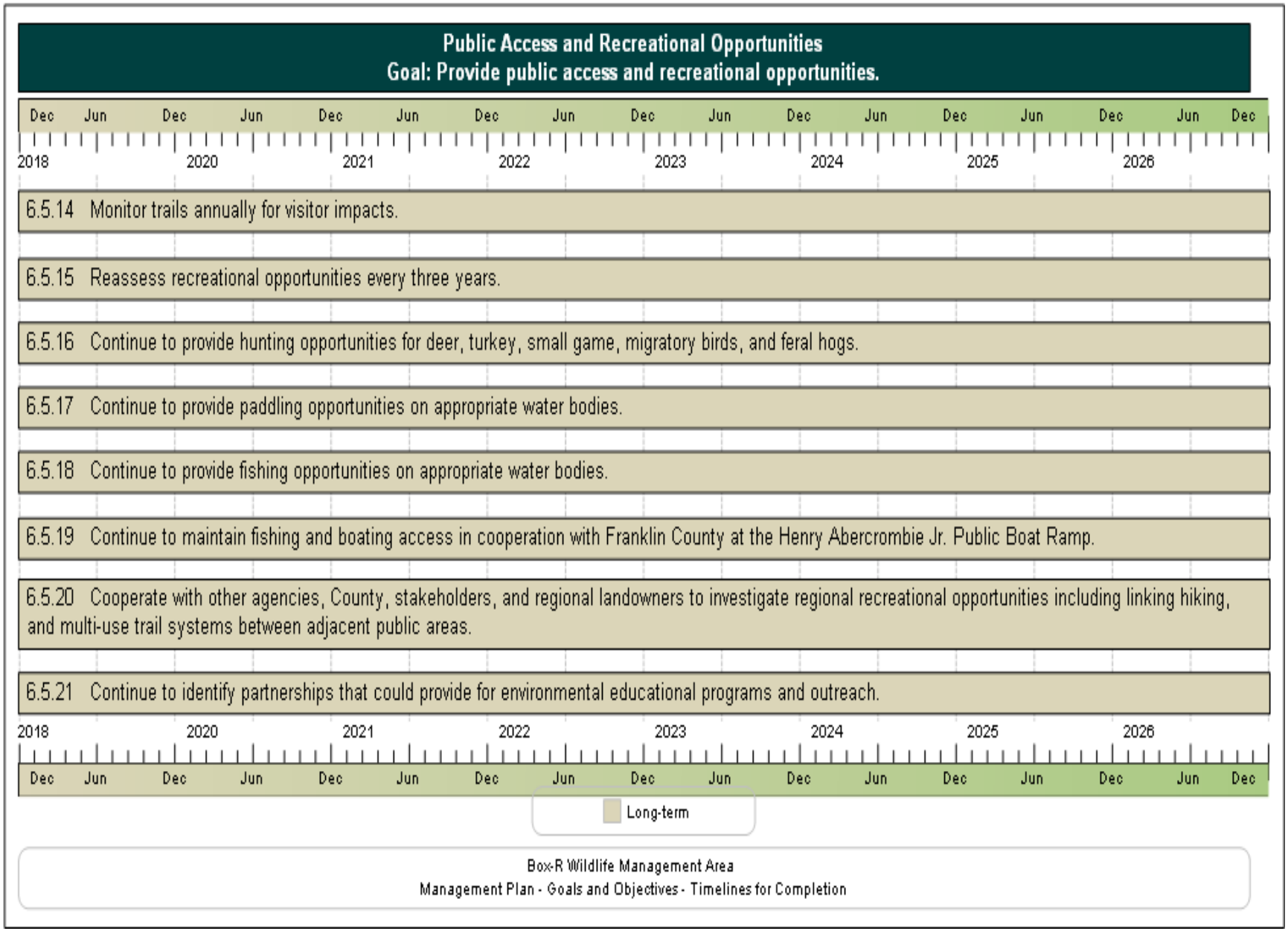

Habitat Restoration and Improvement
Goal: Improve extant habitat and restore disturbed areas.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026 2028
6.1.1 Conduct prescribed burning on 1,500-2,000 acres of fire adapted communities per year.
6.1.2 Maintain 3,460 acres of fire adapted communities (50%) within 1 - 5 year target fire return interval.
6.1.3 Continue to implement the prescribed burn plan.
6.1.4 Conduct habitat/natural community improvement on 50 acres per year including mechanical vegetation management (roller-chopping, mulching, mowing).
6.1.5 Conduct habitat/natural community restoration on 800 acres including hardwood removal, pine thinning, herbicide treatments, longleaf pine planting, and other viable vegetation management techniques.
6.1.6 Coordinate and cooperate with the Apalachicola Regional Stewardship Alliance (ARSA), National Wild Turkey Foundation (NWTF) and other partners on potential grant funding opportunities for natural community restoration.
6.1.7 Continue to implement an OBVM program.
6.1.8 Continue to conduct prescribed burning on 1,000-2,000 acres of fire adapted communities per year.
6.1.9 Continue to maintain 3,460 acres of fire adapted communities (50%) per year within target fire return interval.
6.1.10 Continue to implement the prescribed burn plan.
6.1.11 Continue to implement an OBVM program.
6.1.12 Conduct habitat/natural community improvement on 50 acres per year including mechanical vegetation management (roller-chopping, gyrotrac, mowing).
6.1.13 Conduct habitat/natural community restoration on 1,300 acres including hardwood removal, pine thinning, herbicide treatments, longleaf pine planting (800 acres), and other viable vegetation management techniques.
6.1.14 Coordinate and cooperate with the Apalachicola Regional Stewardship Alliance (ARSA), National Wild Turkey Foundation (NWTF) and other partners on potential grant funding opportunities for natural community restoration.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026 2028
Short-term
Long-term
Aucilla Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration
Goal: Maintain, improve, or restore imperiled species populations and habitats.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
6.2.1 Continue to implement a WCPR Strategy that would benefit imperiled and focal species including, but not limited to, swallow-tailed kite, Bachman's sparrow, southern bald eagle, brown-headed nuthatch, Cooper's hawk, Florida black bear, fox squirrel, gopher tortoise, Northern bobwhite, and wading birds.
6.2.2 As described in the WCPR Strategy, continue to monitor for breeding grassland birds, nesting bald eagles, and nesting wading birds.
6.2.3 As described in the WCPR Strategy, continue habitat restoration in the Strategic Management Area identified for Bachman's sparrow.
6.2.4 Continue to collect opportunistic wildlife and plant species occurrence data for rare and imperiled species.
6.2.5 Continue to monitor and protect at least 10 species of rare or imperiled plants, including and not limited to; (Telephus spurge, white birds-in-a-nest, Florida waxweed, thick-leaved water-willow, white-top pitcherplant, corkwood, pine lily, narrow-leaved phoebanthus, parrot pitcherplant, Chapman's crownbeard), as well as, to maintain and protect habitat for any rare/imperiled plant that could occur on the area as well.
6.2.6 Continue to implement a WCPR Strategy that would benefit imperiled and focal species including, but not limited to, swallow-tailed kite, Bachman's sparrow, southern bald eagle, brown-headed nuthatch, Cooper's hawk, Florida black bear, fox squirrel, gopher tortoise, Northern bobwhite, and wading birds.
6.2.7 Continue to collect opportunistic wildlife and plant species occurrence data for rare and imperiled species on the area.
6.2.8 As described in the WCPR Strategy, continue habitat restoration in the Strategic Management Area identified for Bachman's sparrow.
6.2.9 Revise and update the WCPR Strategy.
6.2.10 Continue to monitor and protect at least 10 species of rare or imperiled plants, including and not limited to; (Telephus spurge, white birds-in-a-nest, Florida waxweed, thick-leaved water-willow, white-top pitcherplant, corkwood, pine lily, narrow-leaved phoebanthus, parrot pitcherplant, Chapman's crownbeard), as well as, to maintain and protect habitat for any rare/imperiled plant that could occur on the area as well.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
Shortterm
Longterm
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


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.
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
6.3.1 Continue to conduct annual spotlight monitoring (distance sampling) surveys for white tailed deer.
6.3.2 Continue to collect biological harvest data at the check station.
6.3.3 Continue to collect opportunistic wildlife occurrence data.
6.3.4 Continue to maintain 40 acres of previously disturbed sites as wildlife openings or food plots.
6.3.5 Continue to conduct annual songbird point counts, eagle nest surveys, wading bird surveys, and Christmas bird counts.
6.3.6 Continue to participate in annual mourning dove banding program.
6.3.7 Continue to conduct chronic wasting disease (CWD) surveillance as determined by FWC protocols.
6.3.8 Conduct comprehensive survey for reptile and amphibian species.
6.3.9 Continue to conduct annual spotlight monitoring (distance sampling) surveys for white tailed deer.
6.3.10 Continue to collect biological harvest data at check station.
6.3.11 Continue to collect opportunistic wildlife occurrence data.
6.3.12 Continue to maintain 40 acres of previously disturbed sites as wildlife openings or food plots.
6.3.13 Continue to conduct annual songbird point counts, eagle nest surveys, wading bird surveys, and Christmas bird counts.
6.3.14 Continue to participate in annual mourning dove banding program.
6.3.15 Continue to conduct CWD surveillance as determined by FWC protocols.
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Exotic and Invasive Species Maintenance and Control
Goal: Remove exotic and invasive plants and animals and conduct needed maintenance and control.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
6.4.1 Annually treat at least 5 acres of FLEPPC Category I and Category II invasive exotic plant species.
6.4.2 In cooperation with FNAI, complete a survey of invasive and exotic plants.
6.4.3 As necessary, implement control measures on at least 10 exotic species including, but not limited to; bull thistle, mimosa, camphor tree, water hyacinth, Japanese climbing fern, torpedo grass, Chinese tallow, Chinese wisteria, Cuban bulrush, sesbania.
6.4.4 Continue to implement control measures on one exotic and nuisance animal species (feral hog), including increased hunting and trapping as appropriate.
6.4.5 Continue to monitor for exotic animal species and control as necessary.
6.4.6 Work with Apalachicola River Stewardship Alliance (ARSA), Cooperative Invasive Species Management Area (CISMA) to identify and control Early Detection and Rapid Response (EDRR) species.
6.4.7 Continue to annually treat at least 5 acres of EPPC Category I and Category II invasive exotic plant species.
6.4.8 Evaluate the need to conduct an updated survey of invasive exotic plants.
6.4.9 As necessary, implement control measures on at least 10 exotic species including, but not limited to; bull thistle, mimosa, camphor tree, water hyacinth, Japanese climbing fern, torpedo grass, Chinese tallow, Chinese wisteria, Cuban bulrush, sesbania.
6.4.10 Continue to implement control measures on one exotic and nuisance animal species (feral hog), including increased hunting and trapping as appropriate.
6.4.12 Work with ARSA, CISMA to identify and control EDRR species.
6.4.11 Continue to monitor for exotic animal species and control as necessary.
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Public Access and Recreational Opportunities
Goal: Provide public access and recreational opportunities.
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2016 2017 2018
6.5.1 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 310 visitors per day.
6.5.2 Develop additional public access and recreational opportunities to allow for a carrying capacity of 400 visitors/day.
6.5.3 Continue to provide a website, single panel kiosk, trail map, and a bird list for interpretation and education.
6.5.4 Develop a trail map.
6.5.5 Develop 5 miles of trails.
6.5.6 Develop an updated Recreational Master Plan
6.5.7 Monitor trails annually for visitor impacts.
6.5.8 Continue to provide hunting opportunities for deer, turkey, small game, migratory birds, and feral hogs.
6.5.9 Continue to provide paddling opportunities on appropriate water bodies.
6.5.10 Continue to provide fishing opportunities on appropriate water bodies.
6.5.11 Continue to maintain fishing and boating access in cooperation with Franklin County at the Henry Abercrombie Jr. Public Boat Ramp.
6.5.12 Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking, and multi-use trail systems between adjacent public areas.
6.5.13 Continue to identify partnerships that could provide for environmental educational programs and outreach.
2016 2017 2018
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Short-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Public Access and Recreational Opportunities
Goal: Provide public access and recreational opportunities.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2018 2020 2021 2022 2023 2024 2025 2026
6.5.14 Monitor trails annually for visitor impacts.
6.5.15 Reassess recreational opportunities every three years.
6.5.16 Continue to provide hunting opportunities for deer, turkey, small game, migratory birds, and feral hogs.
6.5.17 Continue to provide paddling opportunities on appropriate water bodies.
6.5.18 Continue to provide fishing opportunities on appropriate water bodies.
6.5.19 Continue to maintain fishing and boating access in cooperation with Franklin County at the Henry Abercrombie Jr. Public Boat Ramp.
6.5.20 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.
6.5.21 Continue to identify partnerships that could provide for environmental educational programs and outreach.
2018 2020 2021 2022 2023 2024 2025 2026
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Public Access and Recreational Opportunities
Goal: Provide public access and recreational opportunities.
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2016 2017 2018
6.5.1 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 310 visitors per day.
6.5.2 Develop additional public access and recreational opportunities to allow for a carrying capacity of 460 visitors/day.
6.5.3 Continue to provide a website, single panel kiosk, trail map, and a bird list for interpretation and education.
6.5.4 Develop a trail map.
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6.5.6 Develop an updated Recreational Master Plan
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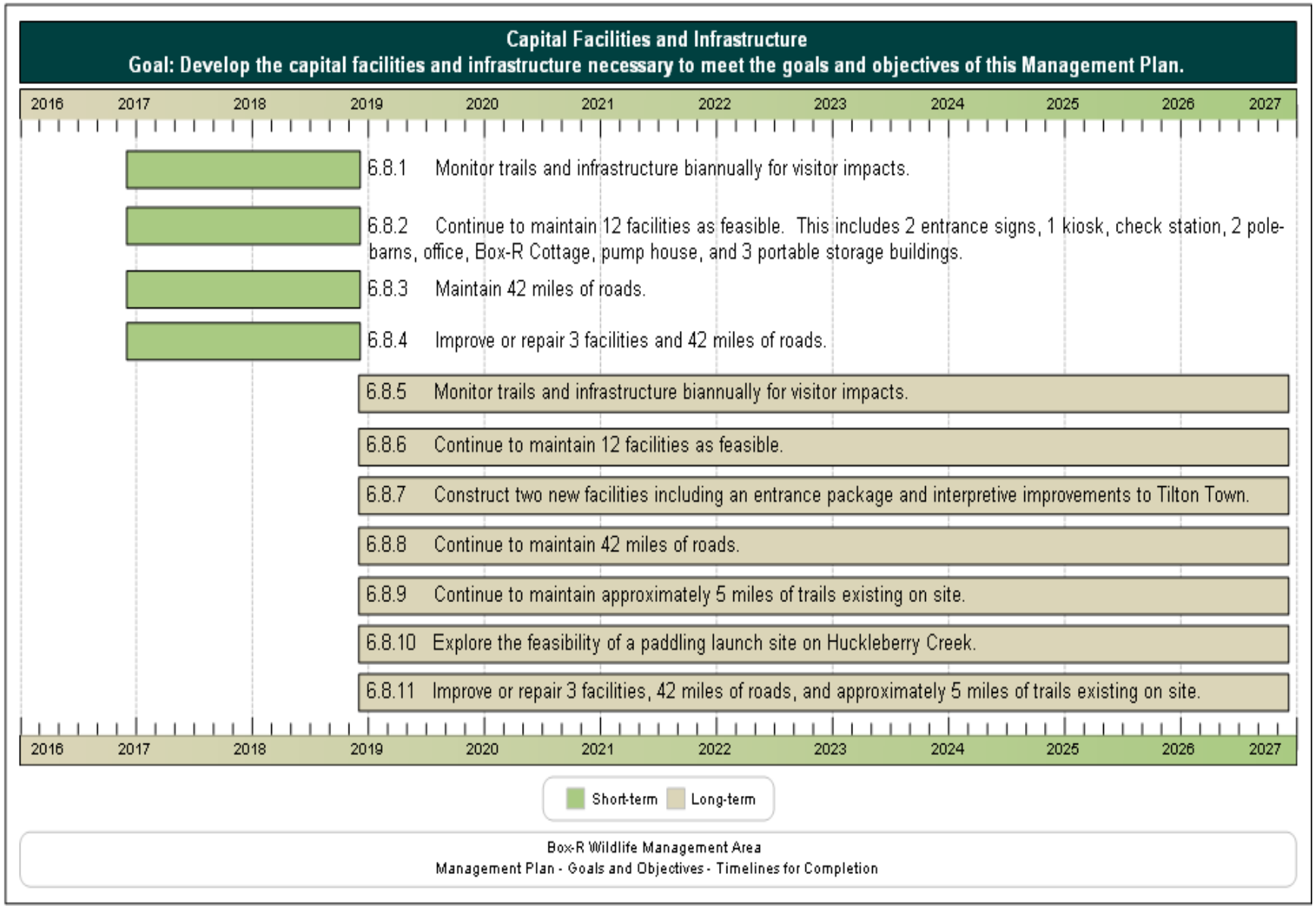
6.5.9 Continue to provide paddling opportunities on appropriate water bodies.
6.5.10 Continue to provide fishing opportunities on appropriate water bodies.
6.5.11 Continue to maintain fishing and boating access in cooperation with Franklin County at the Henry Abercrombie Jr. Public Boat Ramp.
6.5.12 Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking, and multi-use trail systems between adjacent public areas.
6.5.13 Continue to identify partnerships that could provide for environmental educational programs and outreach.
2016 2017 2018
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Short-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Hydrological Preservation and Restoration
Goal: Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
6.6.1 To maintain and enhance natural hydrological functions, install and maintain low-water crossings, culverts, and other water control structures as appropriate.
6.6.2 Continue to cooperate with the NWFWMD and DEP for the monitoring of surface and ground water quality and quantity.
6.6.3 As recommended by the Hydrology Assessment and Conceptual Restoration Plan, continue to maintain low-water crossings and culverts as appropriate to maintain and enhance natural hydrological functions.
6.6.4 To enhance natural hydrological functions, continue to maintain low-water crossings and culverts as appropriate.
6.6.5 Continue to cooperate with the NWFWMD and DEP for the monitoring of surface and ground water quality and quantity.
6.6.6 Continue to restore natural hydrologic condition and functions on the area.
6.6.7 Evaluate the need to contract for an updated hydrology assessment.
6.6.8 Continue to support and provide technical assistance as needed to multi-agency committees and groups dealing with Apalachicola-Chattahoochee-Flint River system and Apalachicola Bay issues (water distribution and quality problems) to protect and restore water resources including Apalachicola Bay fisheries, restore sloughs, and natural hydroperiods.
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Forest Resource Management
Goal: Manage timber resources to improve or restore natural communities for the benefit of wildlife.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2016 2018 2019 2020 2021 2022 2023 2024 2025 2026
6.7.1 Consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.
6.7.2 Continue to implement the Comprehensive Forest Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of BRWMA.
6.7.3 Continue to work with ARSA in grant funding opportunities from various sources for longleaf pine restoration.
6.7.4 Continue to implement the Comprehensive Forest Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of BRWMA.
6.7.5 Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.
6.7.6 Evaluate the need to contract for an updated Timber Assessment and Forest Management Plan by 2022.
6.7.7 Conduct habitat/natural community restoration activities including timber harvesting on 1,200 acres.
6.7.8 Continue to work with ARSA in grant funding opportunities from various sources for longleaf pine restoration.
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Capital Facilities and Infrastructure
Goal: Develop the capital facilities and infrastructure necessary to meet the goals and objectives of this Management Plan.
2016
2017
2018
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2020
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2022
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2024
2025
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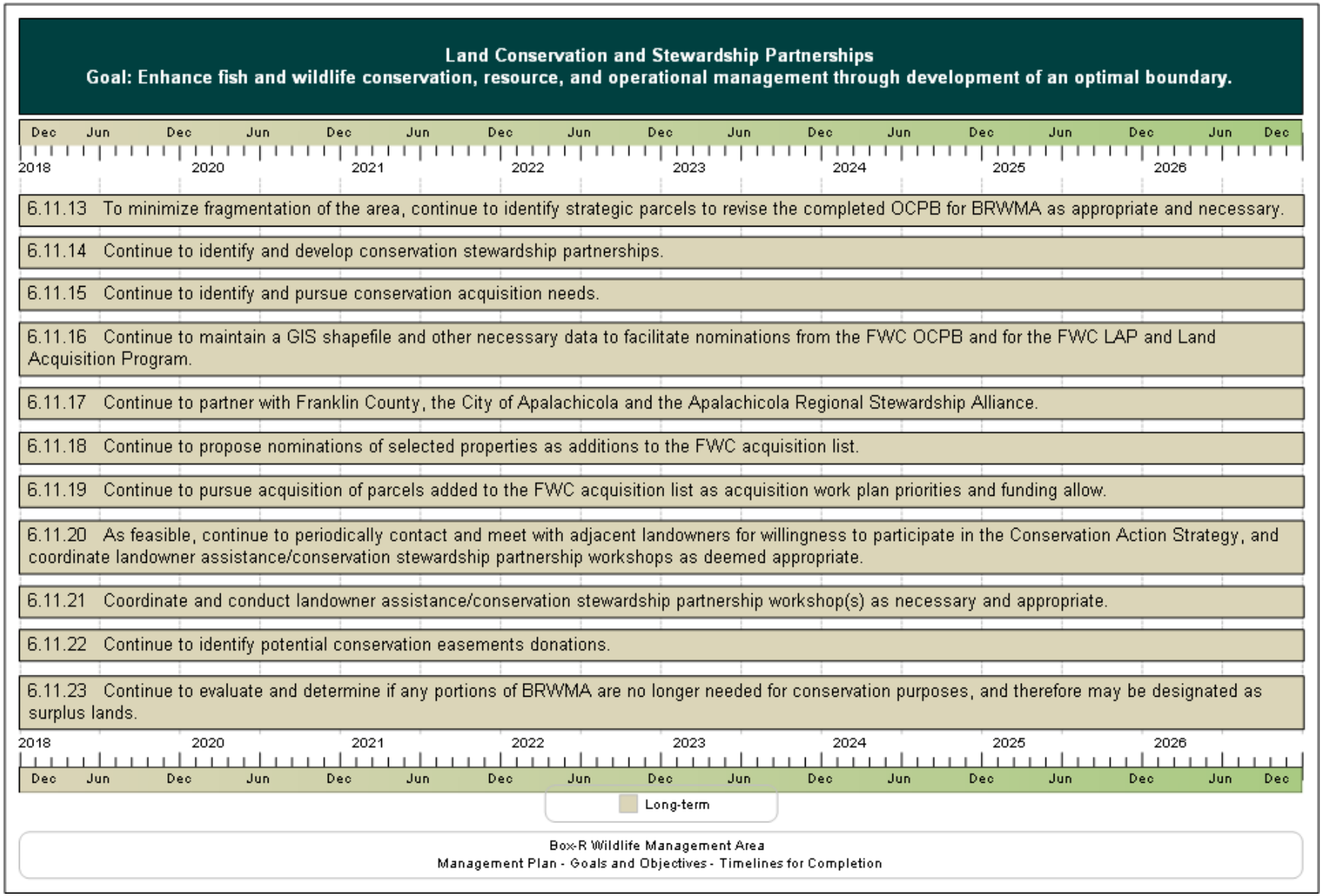
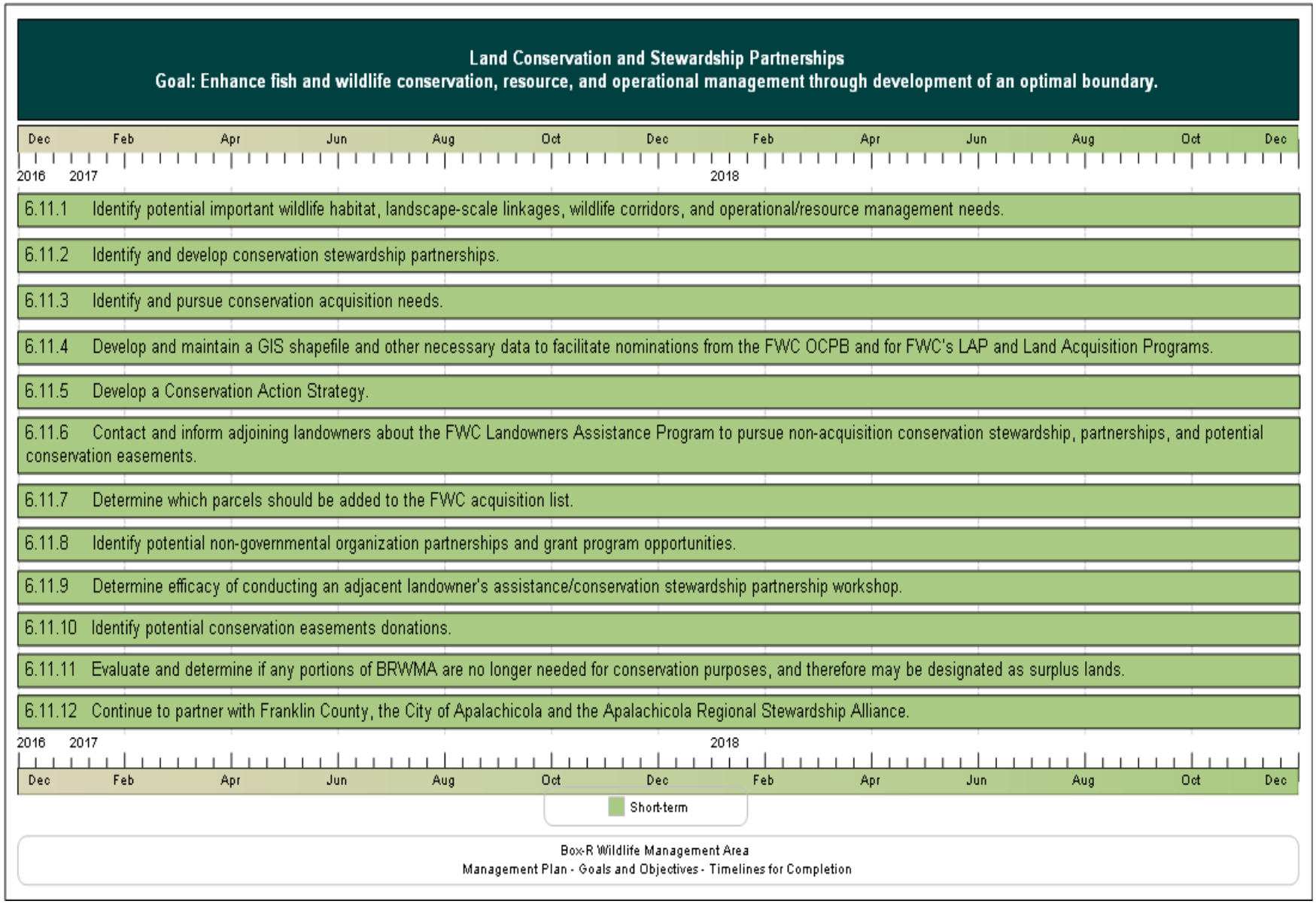
2027
6.8.1 Monitor trails and infrastructure biannually for visitor impacts.
6.8.2 Continue to maintain 12 facilities as feasible. This includes 2 entrance signs, 1 kiosk, check station, 2 pole-barns, office, Box-R Cottage, pump house, and 3 portable storage buildings.
6.8.3 Maintain 42 miles of roads.
6.8.4 Improve or repair 3 facilities and 42 miles of roads.
6.8.5 Monitor trails and infrastructure biannually for visitor impacts.
6.8.6 Continue to maintain 12 facilities as feasible.
6.8.7 Construct two new facilities including an entrance package and interpretive improvements to Tilton Town.
6.8.8 Continue to maintain 42 miles of roads.
6.8.9 Continue to maintain approximately 5 miles of trails existing on site.
6.8.10 Explore the feasibility of a paddling launch site on Huckleberry Creek.
6.8.11 Improve or repair 3 facilities, 42 miles of roads, and approximately 5 miles of trails existing on site.
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Historical Resources
Goal: Protect, preserve and maintain historical resources.
6.9.1 Ensure all known BRWMA historical sites are recorded in the DHR Master Site file.
6.9.2 Cooperate with DHR to manage and maintain known existing historical resources.
6.9.3 Continue to monitor, protect, and preserve as necessary 2D identified and recorded sites.
6.9.4 Coordinate with DHR to assess the need for conducting additional or updated cultural resource surveys on the area as required.
6.9.5 Follow DHR archeological guidelines for determining what activities require site evaluation and monitoring for cultural resources before, during and/or after management activities on the area.
6.9.6 Continue to ensure all known BRWMA historical sites are recorded in the DHR Master Site file.
6.9.7 Continue to cooperate with DHR to manage and maintain known existing historical resources.
6.9.8 Continue to monitor, protect, and preserve as necessary 2D identified and recorded sites.
6.9.9 Ensure BRWMA area management staff has DHR ARM training.
6.9.10 Continue to coordinate with DHR to assess the need for conducting additional or updated cultural resource surveys on the area as required.
6.9.11 Continue to follow DHR archeological guidelines for determining what activities require site evaluation and monitoring for cultural resources before, during and/or after management activities on the area.
6.8.12 Coordinate with DHR ARM for cultural resource management guideline staff training.
6.8.13 Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of cultural and historic resources on the area.
6.8.14 Continue to use LiDAR imagery for remote identification of potential cultural sites on the area. Ground truth potential sites and record identified sites with the Florida Master Site File.
6.8.15 Continue to coordinate with DHR personnel to identify and locate a priority subset of the 338 cultural resource sites across AWMA that require annual monitoring, based upon site importance and historical value. Monitor additional sites regularly on a rotating basis as staffing and time allow.
6.8.16 Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.
Short-term
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Research Opportunities
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2018 2020 2021 2022 2023 2024 2025 2026
6.1O.1 Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, DEP/CAMA, USFWS, CISMA and Apalachicola Watershed Invasive Working Group.
6.1O.2 Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Land Conservation and Stewardship Partnerships
Goal: Enhance fish and wildlife conservation, resource, and operational management through development of an optimal boundary.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2018 2020 2021 2022 2023 2024 2025 2026
6.11.13 To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed OCPB for BRWMA as appropriate and necessary.
6.11.14 Continue to identify and develop conservation stewardship partnerships.
6.11.15 Continue to identify and pursue conservation acquisition needs.
6.11.16 Continue to maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for the FWC LAP and Land Acquisition Program.
6.11.17 Continue to partner with Franklin County, the City of Apalachicola and the Apalachicola Regional Stewardship Alliance.
6.11.18 Continue to propose nominations of selected properties as additions to the FWC acquisition list.
6.11.19 Continue to pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.
6.11.20 As feasible, continue to periodically contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy, and coordinate landowner assistance/conservation stewardship partnership workshops as deemed appropriate.
6.11.21 Coordinate and conduct landowner assistance/conservation stewardship partnership workshop(s) as necessary and appropriate.
6.11.22 Continue to identify potential conservation easements donations.
6.11.23 Continue to evaluate and determine if any portions of BRWMA are no longer needed for conservation purposes, and therefore may be designated as surplus lands.
2018 2020 2021 2022 2023 2024 2025 2026
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Land Conservation and Stewardship Partnerships
Goal: Enhance fish and wildlife conservation, resource, and operational management through development of an optimal boundary.
Dec Feb Apr Jun Aug Oct Dec Feb Apr Jun Aug Oct Dec
2016 2017 2018
6.11.1 Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational/resource management needs.
6.11.2 Identify and develop conservation stewardship partnerships.
6.11.3 Identify and pursue conservation acquisition needs.
6.11.4 Develop and maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for FWC's LAP and Land Acquisition Programs.
6.11.5 Develop a Conservation Action Strategy.
6.11.6 Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship, partnerships, and potential conservation easements.
6.11.7 Determine which parcels should be added to the FWC acquisition list.
6.11.8 Identify potential non-governmental organization partnerships and grant program opportunities.
6.11.9 Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.
6.11.10 Identify potential conservation easements donations.
6.11.11 Evaluate and determine if any portions of BRWMA are no longer needed for conservation purposes, and therefore may be designated as surplus lands.
6.11.12 Continue to partner with Franklin County, the City of Apalachicola and the Apalachicola Regional Stewardship Alliance.
2016 2017 2018
Dec Feb Apr Jun Aug Oct Dec Feb Apr Jun Aug Oct Dec
Short-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Climate Change
Goal: Develop appropriate adaptation strategies in response to projected climate change effects and their potential impacts on fish and wildlife conservation, resources, and operational management of the BRWMA.
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
2018 2020 2021 2022 2023 2024 2025 2026
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 BRWMA.
6.12.2 Incorporate appropriate climate change adaptation strategies into the WCPR for the BRWMA.
6.12.3 As appropriate, update the BRWMA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of BRWMA'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 BRWMA Recreation Master Plan.
2018 2020 2021 2022 2023 2024 2025 2026
Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec Jun Dec
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Cooperative Management and Special Uses
Goal: Provide access and use of the BRWMA to current cooperative managers and continue collaborative management efforts.
Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec
2018 2019 2020 2021 2022 2023 2024 2025 2026
6.13.1 Continue to cooperate with partner agencies and organizations on Gulf Restoration funding (Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act), Natural Resource Damage Assessment (NRDA), and The National Fish and Wildlife Foundation (NFWF)) for the area.
6.13.2 Continue to cooperate with regional first responder agencies to provide first responder training as appropriate and compatible with the conservation of BRWMA.
6.13.3 Continue to cooperate with FFS, DEP, TNC, NWFWMD, and others as appropriate in the operation and natural resource management of BRWMA.
6.13.4 Continue to cooperate with Franklin County on the management of the Alligator Point boat ramp.
6.13.5 Continue to coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as SPARS and other initiatives as appropriate and compatible with the conservation of BRWMA.
6.13.6 Continue to cooperate with partner agencies and organizations on Gulf Restoration funding (RESTORE Act, NRDA, and NFWF) for the area.
6.13.7 Continue to cooperate with regional first responder agencies to provide first responder training as appropriate and compatible with the conservation of BRWMA.
6.13.8 Continue to cooperate with FFS, DEP, TNC, NWFWMD, and others as appropriate in the operation and natural resource management of BRWMA.
Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec Mar Jun Sep Dec
2018 2019 2020 2021 2022 2023 2024 2025 2026
Long-term
Box-R Wildlife Management Area
Management Plan - Goals and Objectives - Timeline for Completion

8 Resource Management Challenges and Strategies

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

Challenge 1: Feral hogs are continuing to cause damage to habitat throughout the area. Substantial damage has been observed in areas where significant restoration efforts have taken place and in wildlife openings and food plots. To maximize recreational pressure on hog populations, spring and summer hog dog hunts have been added. Despite these efforts, anecdotal observations suggest that hog damage is steadily increasing on the area. In some areas the damage is severe enough so as to impede the ability of fire to carry across the landscape.

Strategy: Continue to explore ways to reduce damage from feral hogs. This will include the rule change proposals to make hogs legal to take during the small game hunts and expanding the small game hunts. Other options will be explored if hunting remains ineffective.

Strategy: Evaluate and implement hog trapping as a method of control of feral hogs as feasible.

Challenge 2: Habitat conditions in pine plantations and some flatwoods are not optimal for some wildlife species. Previous land uses resulted in the conversion of these areas to off-site pine species and high densities of titi and other invasive native woody vegetation.

Strategy: Thin pine plantations to a basal area that leaves enough trees to maintain a fire regime that uses a short return interval to reduce the stature and cover of invasive native shrubs and trees.

Strategy: Use mechanical manipulation to augment/improve the effects of fire on habitat quality.

Challenge 3: BRWMA is not a well-known public outdoor recreation destination.

Strategy: Cross-promote with other regional recreation lands.

Strategy: Cooperate with Franklin and Gulf counties to promote recreation opportunities and the associated economic benefits to the counties.

Strategy: Cooperate with Apalachicola NERR on development of a Franklin County recreation guide.

Strategy: Continue to participate in developing new regional recreation opportunities that include BRWMA.

9 Cost Estimates and Funding Sources

The following represents the actual and unmet budgetary needs for managing the lands and resources of BRWMA. 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 or appropriate mitigation projects proposed for the area, may be sought to supplement existing funding.

The cost estimate below, although exceeding what FWC typically receives through the appropriations process, is estimated to be what is necessary for optimal management, and is consistent with the current and planned resource management and operation of BRWMA. 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 2016-2017 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 13.8.

Box-R WMA Management Plan Cost Estimate

Maximum expected one year expenditure

Resource Management	Expenditure	Priority
Exotic Species Control	$3,109	(1)
Prescribed Burning	$144,025	(1)
Cultural Resource Management	$2,156	(1)
Timber Management	$14,892	(1)
Hydrological Management	$12,242	(1)
Other (Restoration, Enhancement, Surveys, Monitoring,	$145,638	(1)
Subtotal	**$322,062**	
Administration		
General administration	**$6,921**	(1)
Support		
Land Management Planning	$18,443	(1)
Land Management Reviews	$6,679	(3)
Training/Staff Development	$10,325	(1)
Vehicle Purchase	$104,580	(2)
Vehicle Operation and Maintenance	$40,136	(1)
Other (Technical Reports, Data Management, etc.)	$17,206	(1)
Subtotal	**$197,369**	
Capital Improvements		
New Facility Construction	$352,696	(2)
Facility Maintenance	$59,984	(1)
Subtotal	**$412,679**	
Visitor Services/Recreation		
Info./Education/Operations	**$57,832**	(1)
Law Enforcement		
Resource protection	**$10,244**	(1)
Total	**$1,007,107** *	

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

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

Box-R WMA Management Plan Cost Estimate

Ten-year projection

Resource Management	Expenditure	Priority
Exotic Species Control	$27,314	(1)
Prescribed Burning	$1,265,417	(1)
Cultural Resource Management	$18,941	(1)
Timber Management	$130,840	(1)
Hydrological Management	$107,561	(1)
Other (Restoration, Enhancement, Surveys, Monitoring,	$1,279,595	(1)
Subtotal	**$2,829,668**	
Administration		
General administration	**$60,809**	(1)
Support		
Land Management Planning	$162,043	(1)
Land Management Reviews	$19,118	(3)
Training/Staff Development	$90,716	(1)
Vehicle Purchase	$368,023	(2)
Vehicle Operation and Maintenance	$352,640	(1)
Other (Technical Reports, Data Management, etc.)	$151,176	(1)
Subtotal	**$1,143,716**	
Capital Improvements		
New Facility Construction	$1,018,756	(2)
Facility Maintenance	$527,024	(1)
Subtotal	**$1,545,780**	
Visitor Services/Recreation		
Info./Education/Operations	**$508,119**	(1)
Law Enforcement		
Resource protection	**$90,005**	(1)
Total	**$6,178,098** *	

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

* Based on the characteristics and requirements of this area, three 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 BRWMA 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 13.5). 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, 597, 373, 375, 378, 487, and 870 FS.

The FWC has developed and utilizes an Arthropod Control Plan for BRWMA in compliance with Chapter 388.4111 F.S. (Appendix 13.9). This plan was developed in cooperation with the local Gulf and Franklin counties arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Gulf and Franklin counties, Florida, (Appendix 13.17).

12 Endnotes

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