

# TEN-YEAR LAND MANAGEMENT PLAN

FOR THE

## BABCOCK RANCH PRESERVE

CHARLOTTE AND LEE COUNTIES



PREPARED BY:

THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

FLORIDA FOREST SERVICE

APPROVED ON \_\_\_\_\_

TEN-YEAR LAND MANAGEMENT PLAN  
FOR THE  
BABCOCK RANCH PRESERVE



Approved by:

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Jim Karels, Director  
Florida Forest Service

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Date

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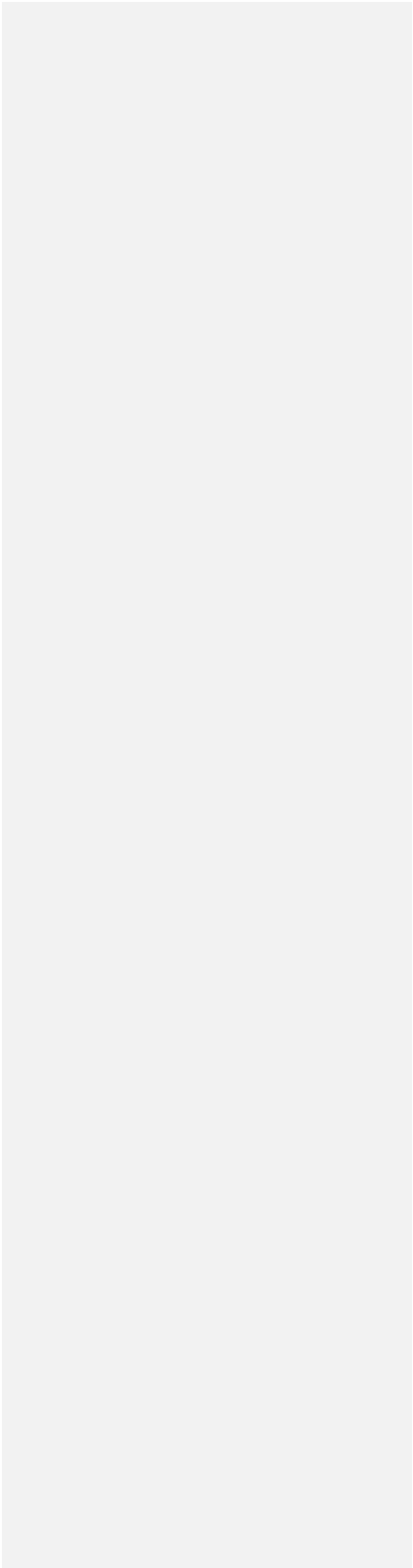
**TEN-YEAR LAND MANAGEMENT PLAN  
BABCOCK RANCH PRESERVE**

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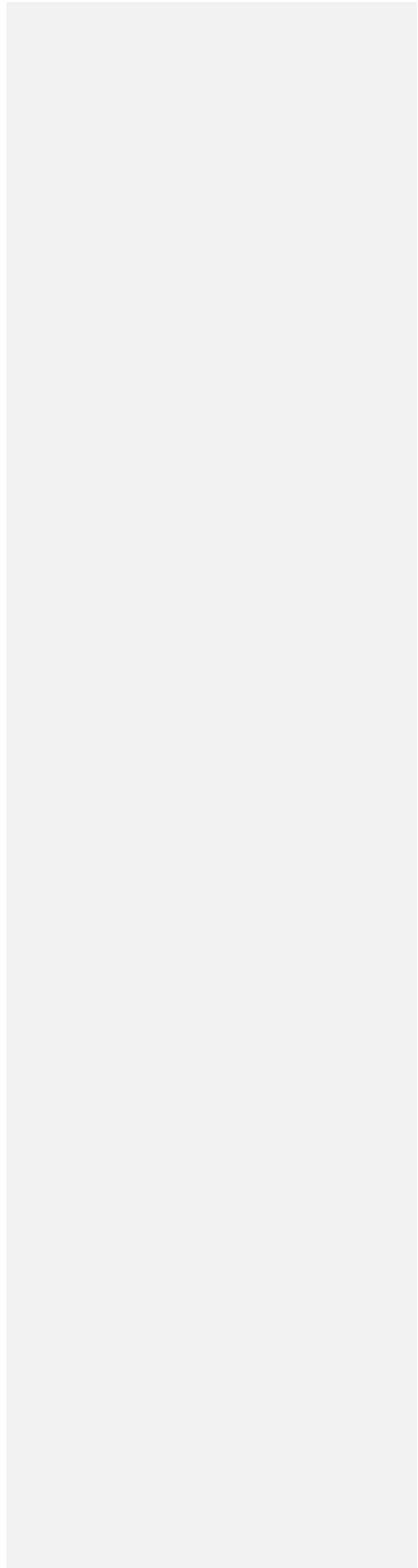
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BABCOCK RANCH PRESERVE**

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LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services, Florida Forest Service  
 COMMON NAME: Babcock Ranch Preserve  
 LOCATION: Charlotte County and Lee County  
 ACREAGE TOTAL: 73,239.17

<u>Historical Natural Communities</u>	<u>Approximate Acreage</u>
Mesic Flatwoods	39,807
Dry Prairie	8,929
Strand Swamp	7,567
Wet Flatwoods	5,934
Wet Prairie	4,571
Depression Marsh	2,150
Basin Marsh	1,880

<u>Historical Natural Communities</u>	<u>Approximate Acreage</u>
Dome Swamp	1,203
Slough	680
Hydric Hammock	425
Mesic Hammock	212
Scrubby Flatwoods	122
Scrub	81
-	-

USE: Single  Multiple

MANAGEMENT AGENCY

Florida DACS, Florida Forest Service  
 Florida Fish and Wildlife Conservation Commission  
 South Florida Water Management District  
 Division of Historical Resources

RESPONSIBILITY

General Forest, Cattle and Farm Resource Management  
 Wildlife Resources & Laws  
 Water Resource Protection & Restoration  
 Historical and Archaeological Resource Management

DESIGNATED LAND USE: Florida Heritage Working Ranch, Conservation

SUBLEASES: Charlotte County; Crown Castle Company; Charlotte County School Board; and various agriculture and Tier II Hunt leases

ENCUMBRANCES: SFWMD Permits and Easements; Florida Gas Transmission Company; AT&T; Lee County Electric Cooperative; Florida Power & Light; and United Telephone Company of Florida

TYPE ACQUISITION: General Revenue (Charlotte County property) and Lee County Conservation 20/20 (Lee County property)

UNIQUE NATURAL FEATURES: South Florida Flatwoods Ecosystems; FNAI designated Florida imperiled wet prairie and dry prairie plant communities; Federal and state listed plant and animal species

UNIQUE ARCHAEOLOGICAL / HISTORICAL FEATURES: Two Linear Resources from Florida Master Site File; Mid-20<sup>th</sup> Century buildings characteristic of a working ranch and tourism operation; Governor's Cabin; Town of Rueville

MANAGEMENT NEEDS: Continued agriculture and ranch issues; Maintenance and improvement of natural communities; Non-native invasive species treatments and control; Watershed protections and improvements; Maintenance of ranch operations; Public access and use

ACQUISITION NEEDS: Approximately 48,800 acres have been identified to protect watersheds and provide conservation corridors to other large conservation tracts.

SURPLUS ACREAGE: None

PUBLIC INVOLVEMENT: Management Plan Advisory Group; Public Hearing in Charlotte County; and the Acquisition and Restoration Council Public Hearing.

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

ARC Approval Date: \_\_\_\_\_ TIITF Approval Date: \_\_\_\_\_

Comments: \_\_\_\_\_

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## **I. Introduction**

This Ten-Year Land Management Plan will become effective on August 1, 2016. At such time, Florida Forest Service (FFS) management of Babcock Ranch Preserve (BRP, or the Preserve) will commence. Babcock Ranch Management, LLC will continue to utilize the current plan dated March 6, 2008, as prepared by Pandion Systems, Inc., until July 31, 2016.

The Babcock Ranch Preserve occupies 73,239 acres in southeast Charlotte County and northwest Lee County, approximately 17.5 miles east of Punta Gorda and 34 miles west of Lake Okeechobee. It represents one of the single largest purchases of conservation land in the State of Florida's history, and is the first parcel purchased to operate as a working ranch that preserves Florida's cattle heritage. The BRP protects regionally important water resources, diverse natural habitats, scenic landscapes and historic and cultural resources in the rapidly developing southwestern Florida corridor.

Located within the Caloosahatchee River Basin, BRP anchors a conservation corridor of public and private land that stretches from Lake Okeechobee to the Gulf of Mexico. The property spans a diverse mosaic of pinelands, including both wet and mesic pine flatwoods, and dry prairie ecosystems interspersed with cypress domes and cypress swamps. A dominant feature on the landscape is the north-south oriented Telegraph Swamp, a cypress strand swamp located in the western half of the property. BRP's wetlands contribute to aquifer recharge for southwestern Florida and help maintain the health of the western Everglades ecosystem, particularly the Caloosahatchee River and Charlotte Harbor Estuary.

Together with nearby conservation lands, including the Babcock-Webb Wildlife Management Area and the Caloosahatchee Regional Park, BRP provides habitat for wide-ranging species such as the Florida black bear and Florida panther and is home to the Osceola subspecies of native wild turkey, which is found only in peninsular Florida. In addition to abundant populations of white-tailed deer, wild turkey, and northern bobwhite quail, 13 wildlife species that are listed as endangered, threatened, or of special concern have been documented to occur within the BRP boundaries. The list includes crested caracara, gopher tortoise, red-cockaded woodpecker, eastern indigo snake, Florida burrowing owl and Florida panther.

The BRP is managed as a working ranch while providing public recreational opportunities compatible with agricultural operations. Public recreational opportunities may include, but are not limited to: hunting, hiking, wildlife viewing, bicycling, fishing, camping and horseback riding.

### **A. General Mission and Management Plan Direction**

The primary mission of the Florida Forest Service is to "protect Florida and its people from the dangers of wildland fire and manage the (BRP) resources through a stewardship ethic to assure they are available for future generations."

Management strategies for BRP center on the multiple-use concept, as defined in Sections 589.04(3), 253.034(2)(a), and 259.1053 F.S. Implementation of this concept will utilize and conserve resources in a harmonious and coordinated combination that will

best serve the people of the state of Florida, and that is consistent with the purpose for which the property was acquired. Multiple-use management for BRP will be accomplished with the following strategies:

- Management as a working ranch;
- Practice sustainable forest and ranch management for the efficient generation of revenue and in support of forest and ranch management objectives;
- Provide for resource-based outdoor recreation opportunities for multiple interests.
- Manage healthy forests and native ecosystems ensuring the long-term viability of populations and species listed as endangered, threatened or rare, and other components of biological diversity including game and nongame wildlife and plants;
- Protect known archaeological, historical, cultural and paleontological resources;
- Restore, maintain and protect hydrological functions related to water resources and the health of associated wetland and aquatic communities;
- Hunting opportunities managed in cooperation with the Florida Fish and Wildlife Conservation Commission (FWC).

This management plan is provided according to requirements of Sections 253.034, 259.032 and Chapter 373, Florida Statutes, and was prepared utilizing guidelines outlined in Section 18-2.021 of the Florida Administrative Code. This plan is not an annual work plan or detailed operational plan, but provides general guidance for the management of BRP over the next ten-year period and outlines the major concepts that will guide management activities on the BRP.

A BRP Agricultural Management Plan, as well as a BRP Operational/Business Plan will be developed by FFS, or those designated by FFS, to include such issues as: silviculture, prescribed burning, roads and bridges, boundary and survey maintenance, ecological and recreation. FFS may choose to execute a lease or leases for the management of any operations onsite, each lessee will be required to comply with the stipulations set forth in each associated Plan established by FFS, as well as all applicable Best Management Practices (BMPs). FFS will utilize the expertise of the FWC, Lee County, and the Babcock Ranch Advisory Group as needed.

**B. History and Background**

The BRP is comprised of 73,239.17 acres. The State of Florida Board of Trustees of the Internal Improvement Trust Fund (TIITF) owns 67,618.81 acres. Lee County owns 5,620.36 acres.

Prior to its purchase by the State of Florida and Lee County, BRP was part of the 91,361-acre working ranch known as Crescent B Ranch. Since 1914 Crescent B Ranch has produced timber, cattle, row crops, and sod, and provided recreation opportunities such as hunting and ecotourism.

BRP was acquired through a partnership between the State of Florida and Lee County as part of the Florida Forever Program and funding from General Revenue, and the Lee County Conservation 20/20 Program. The BRP “is established to protect and preserve the environmental, agricultural, scientific, scenic, geologic, watershed, fish, wildlife,

historic, cultural, and recreational values of the preserve, and to provide for the multiple use and sustained yield of the renewable surface resources within the preserve” (FS 259.1052(4)). Lee County and the FDACS, FFS may enter into an agreement for FFS to manage the Lee County portion of the property.

The purchase of BRP is one of the single largest state land conservation acquisitions by the State of Florida, conserving 73,239.17 acres of property within the Caloosahatchee River Basin. Acquisition of the property from the Babcock family occurred through Kitson & Partners, LLC, which retained some of Crescent B Ranch for development into the Babcock Ranch Community and sold the majority of the land to the State of Florida and Lee County in 2006.

The property acquisition creates a near contiguous parcel that is sufficiently large enough to maintain viable populations for all but the most wide-ranging native wildlife, including many threatened and endangered species. In conjunction with other nearby conservation lands, BRP provides habitat for wide-ranging species. The diversity of natural communities interspersed with agricultural landscapes creates a scenic, rural setting uncommon in the rapidly developing southwestern Florida corridor.

Protection of regionally important water resources, diverse natural habitats, scenic landscapes, and Florida’s cultural heritage are significant benefits of the project. BRP lands help to maintain freshwater flows to the Charlotte Harbor Estuary and to serve as a recharge area for southwest Florida.

**C. Goals / Objectives for the Next Ten-Year Period**

The following goals and objectives provide direction and focus management resources for the next ten-year planning period. Funding, agency program priorities, and wildfire probability during the planning period will determine the degree to which these objectives can be met. Management activities on BRP during this management period must serve to ensure a working ranch is maintained that will conserve, protect, utilize and enhance the natural and historical resources and manage resource-based public outdoor recreation. All allowable activities should enhance the property’s value as a working ranch.

The management activities listed below will be addressed within the ten-year management period and are defined as short-term goals, long-term goals or ongoing goals. Short-term goals are goals that will be achievable within a two year planning period, and long-term goals will be achievable within a ten year planning period. An ongoing goal refers to periodic goals (annual, quarterly, biennial, etc.) that will be achievable throughout the entire planning period. Objectives are listed in priority order for each goal. Cost estimates are provided below for the FFS and contract services where sufficient information is available to make projections. Costs for some activities cannot be estimated at this time. Other activities will be completed with minimal overhead expense and existing staff. For further details, please see the BRP Budget Summary, Exhibit AE.

➤ **GOAL 1: Sustainable Ranch Management**

**Objective 1:** Prepare and implement a Five-Year Agricultural Management Plan including associated operational activities and goals. (Long Term Goal)

**Performance Measures:**

- Completion of Five-Year Agricultural Management Plan with annual updates.
- Implementation of Five-Year Agricultural Management Plan (plan implemented).

**Objective 2:** Implement a process for conducting ranch operations including a GIS database containing ranch operations, roads and other attributes (including but not limited to: agricultural resources, timber resources, wildlife, threatened and endangered species, archaeological resources, non-native invasive species locations, historical areas). (Ongoing Goal)

**Performance Measures:**

- Complete GIS database and re-inventory all attributes as required by FFS procedures.
- Number of acres inventoried.

**Objective 3:** Conduct ranch inventory updates each year, including, but not limited to, all cattle production figures and equipment, to be completed each fall following cattle evaluations. (Ongoing Goal)

**Performance Measures:**

- Ranch inventory conducted annually.
- Number of acres inventoried annually.

**Objective 4:** Conduct annual inventory of usage on ranch, including all farm and grazing leases. (Ongoing Goal)

**Performance Measure:** Acreages of leased areas and carrying capacity reported.

**Objective 5:** At least once in a ten-year planning period, FFS may conduct appropriate environmental assessment work regarding ranch operations. Additionally, FFS may conduct environmental work on an as needed basis. (Ongoing Goal)

**Performance measures:**

- Environmental assessment work completed at least once during the ten-year planning period.
- Environmental work completed as necessary.

**Objective 6:** BRP, under Florida Statute, is to be managed as a self-sustaining property. FFS will therefore give sufficient emphasis to the generation of ranch revenue when considering other ranch uses.

**Performance Measure:** Amount of revenue received each year.

➤ **GOAL 2: Public Access and Recreational Opportunities**

**Objective 1:** In order to safely integrate public access into BRP, develop and implement a 5-Year Outdoor Recreation Plan and update annually. (Ongoing Goal)

**Performance Measures:**

- Development and implementation of the 5-Year Outdoor Recreation Plan.
- Five-Year Outdoor Recreation Plan annual update completion.

**Objective 2:** Maintain public access and recreational opportunities to allow for a recreational carrying capacity that is balanced with the operations of the working ranch and its natural resources, while taking the various user groups' needs into consideration. (Ongoing Goal)

**Performance Measure:** Balancing ranch operations and natural resources while maintaining public access and recreational opportunities.

**Objective 3:** Develop additional public access and recreational opportunities, where feasible, to allow for additional visitors on BRP. (Long Term Goal)

**Performance Measure:** Establishment of additional public access and recreational opportunities.

➤ **GOAL 3: Sustainable Forest Management**

**Objective 1:** Develop and implement a Five-Year Silviculture Management Plan including reforestation, harvesting, prescribed burning, restoration, and timber stand improvement activities and goals. The plan is updated annually. (Long Term Goal)

**Performance Measures:**

- Development and implementation of Five-Year Silviculture Management Plan (acres treated for various practices).
- Five-Year Silviculture Management Plan annual update completion.

**Objective 2:** Develop and implement a Three-Year Prescribed Burning Management Plan that contains an option for the allowance of lessees to burn pastures. The plan is updated annually. (Long Term Goal)

**Performance Measures:**

- Development and implementation of the Three-Year Prescribed Burning Management Plan.
- Three-Year Prescribed Burning Management Plan annual update completion.

**Objective 3:** Implement the FFS process for conducting stand descriptions and forest inventory, including a GIS database containing forest stands, roads and other attributes (including but not limited to: timber resources, reforestation needs, threatened and endangered species, archaeological resources, non-native invasive species locations, historical areas). (Ongoing Goal)

**Performance Measures:**

- Complete GIS database and re-inventory all attributes as required by FFS procedures.
- Number of acres inventoried.

**Objective 4:** Conduct forest inventory updates each year, according to established criteria in State Forest Handbook. (This objective was a recommendation from the 2014 LMR.) (Ongoing Goal)

**Performance Measure:** Number of acres inventoried annually.

➤ **GOAL 4: Habitat Restoration and Improvement**

**Objective 1:** The BRP contains approximately 45,244 acres of fire dependent natural communities and 1,807 acres of fire maintained communities for a total of 47,051 burnable acres. In order to increase burning to achieve an average fire return interval of two to four years across the BRP, approximately 12,000 to 24,000 acres will be prescribed burned annually. Based upon the FFS's contracted burning rate, the average estimated annual cost (including fuel and maintenance) rate is \$240,000 to \$480,000 per year. (Ongoing Goal)

**Performance Measure:** Number of acres burned within target fire return interval.

➤ **GOAL 5: Listed and Rare Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration**

**Objective 1:** In consultation with FWC and the Florida Natural Areas Inventory (FNAI), a baseline inventory list was developed of listed and rare species occurrences in 2008. FFS will work with FWC and FNAI to update the inventory list and continue to update the list annually. (Ongoing Goal)

**Performance Measures:**

- Baseline listed and rare species occurrence inventory list updated.
- Annual update of baseline listed and rare species occurrence inventory list completion.

**Objective 2:** In cooperation with FWC, develop appropriate imperiled species surveys and monitoring protocols based on site-specific occurrences, population data, and sustainability potential, as they are compatible with ranch activities. (Ongoing Goal)

**Performance Measure:** Number of listed and rare species reviewed for which survey plans and monitoring protocols are developed.

**Objective 3:** In consultation with FWC, implement surveys and monitoring protocols, where feasible, for listed and rare species as identified in Objective 2. (Ongoing Goal)

**Performance Measure:** Number of species for which monitoring has been reviewed and possibly implemented and is ongoing.

**Objective 4:** Utilize cow/calf Best Management Practices (BMP) to protect environmentally sensitive communities. (Ongoing Goal)

**Performance Measures:**

- Environmentally sensitive areas mapped.
- BMPs utilized.

➤ **GOAL 6: Non-Native Invasive Species Maintenance and Control**

**Objective 1:** Utilize data from the FNAI 2008 Non-Native Invasive Species Inventory and develop a plan to locate, identify, and control non-native invasive plant species. (Ongoing Goal)

**Performance Measure:** Total number of acres identified and successfully treated.

➤ **GOAL 7: Cultural and Historical Resources**

**Objective 1:** Ensure all known sites are recorded in the Division of Historical Resources (DHR) Florida Master Site file. (Ongoing Goal)

**Performance Measure:** 100% of all known sites recorded in DHR Master Site File.

**Objective 2:** Monitor recorded sites and send updates to the DHR Florida Master Site File as needed. (Ongoing Goal)

**Performance Measure:** Number of sites monitored; reports submitted to DHR.

➤ **GOAL 8: Protect and Manage Hydrologic Resources**

**Objective 1:** Protect water resources during management activities through the use of Silviculture Best Management Practices (BMPs), Cow/Calf BMPs, and other applicable BMPs for public lands (Ongoing Goal).

**Performance Measure:** Percent compliance with BMPs that have been properly promulgated by the State of Florida.

➤ **GOAL 9: Ranch and Farm Capital Improvements**

**Objective 1:** Continued maintenance of roads and trails. (Ongoing Goal)

**Performance Measure:** The number of miles of roads and miles of trails maintained.

**Objective 2:** Continue annual maintenance of ranch boundary according to the Five-Year Boundary Survey and Maintenance Management Plan (including reworking entire boundary every five years by harrowing, where necessary, reposting signage, and repainting boundary trees, where necessary). (Ongoing Goal)

**Performance Measures:**

- Development and implementation of Five-Year Boundary and Survey Maintenance Management Plan.
- Annual maintenance of ranch boundary completed.

**Objective 3:** Continue maintenance of fences and facilities.

**Performance Measure:** Number of fence miles maintained and number of facilities maintained in current condition.

## **II. Administration Section**

### **A. Descriptive Information**

#### **1. Common Name of Property**

The common name of the property is the Babcock Ranch Preserve (BRP).

#### **2. Legal Description and Acreage**

The BRP is comprised of 73,239.17 acres. The State of Florida Board of Trustees of the Internal Improvement Trust Fund (TIITF) owns 67,618.81 acres. Lee County owns 5,620.36 acres. See Exhibit A for a legal description of the property.

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF), as part of BRP, is on record at the FFS District Office, Florida Department of Environmental Protection (DEP), and the FFS State Office in Tallahassee.

**3. Proximity to Other Public Resources**

BRP is adjacent to or within close proximity to a wide array of public conservation lands (Exhibit D). These include Babcock-Webb WMA, Caloosahatchee Regional Park, Hickey’s Creek Mitigation Park, Fisheating Creek/Lykes Brothers Conservation Easement, Moya Sanctuary, Caloosahatchee Creeks Preserve, Yucca Pens, Yucca Pens Preserve, Charlotte Harbor Buffer Preserve, Charlotte Harbor Preserve State Park, Daniel’s Preserve at Spanish Creek, Persimmon Ridge Preserve, Caloosahatchee River and other creeks. These abundant federal, state, and local lands and water bodies provide a number of nature-based opportunities and natural resource conservation for the public such as hiking, hunting, fishing, biking, canoeing and bird watching. Additionally, the site is close to many coastal recreational opportunities.

There are multiple Florida Forever Projects located in Charlotte County and Lee County. The Hall Ranch Project is adjacent to BRP. The following projects are located in Charlotte County and/or Lee County but are not in the vicinity of the BRP: Charlotte Harbor Estuary, Charlotte Harbor Flatwoods, Corkscrew Regional Ecosystem Watershed, Estero Bay, and Pineland Site Complex (See Exhibit E).

Lands managed by state, federal or local government for conservation of the natural or cultural resources that are located within approximately 70 miles of the BRP are included in Exhibit D. Several of these sites are listed in the table below:

**Table 1: Nearby Public Conservation Land and Easements**

<b>TRACT</b>	<b>AGENCY</b>	<b>DRIVING DISTANCE</b>
Fisheating Creek Florida Forever Project / Fisheating Creek WMA	DEP / FWC	Adjacent (eastern boundary)
SFWMD Caloosahatchee Watershed	SFWMD	Within
Caloosahatchee Regional Park	Lee County	Adjacent (southern boundary)
Fred C. Babcock – Cecil M. Webb State WMA	FWC	Adjacent (western boundary)
RV Griffin Reserve	SFWMD	40.1 miles
Myakka State Forest	FFS	52.8 miles
Okaloacoochee Slough State Forest	FFS	37.6 miles
Deer Prairie Creek	SFWMD	49.9 miles
Myakka River State Park	DRP	62.7 miles
CREW Flint Pen Strand	CREW	51.3 miles
Florida Panther National Wildlife Refuge	USFWS	66.7 miles
Holey Land WMA	FWC	60 miles (approximate)
Highlands Hammock State Park	DRP	70 miles
Cayo Costa State Park	DRP	62.3 miles



TRACT	AGENCY	DRIVING DISTANCE
JN “Ding” Darling NWR	USFWS	51.6 miles

DRP – Florida Dept. of Environmental Protection, Division of Recreation and Parks  
 FWC – Florida Fish and Wildlife Conservation Commission  
 SWFWMD – Southwest Florida Water Management District  
 FFS – Florida Forest Service  
 CREW – Corkscrew Regional Ecosystem Watershed Land and Water Trust  
 USFWS – United State Fish & Wildlife Service

**4. Property Acquisition and Land Use Considerations**

The Board of Trustees of the Internal Improvement Trust Fund (TIITF) holds fee simple title to approximately 67,618.81 acres. This acreage was purchased on July 31, 2006 using general revenue funds. Lee County purchased the 5,620.36 acres located in Lee County.

The BRP was purchased by the State of Florida and Lee County in 2006. The 73,239.17-acre parcel in Charlotte and Lee counties is the single largest purchase of conservation land in the State of Florida’s history.

The following entities own portions of and/or have a direct management interest or role on BRP by agreement or statute:

- Board of Trustees of the Internal Improvement Trust Fund
- Florida Forest Service/Florida Department of Agriculture and Consumer Services
- Lee County (only on the Lee County-owned portion of property)
- Division of State Lands, Florida Department of Environmental Protection
- Florida Fish and Wildlife Conservation Commission
- South Florida Water Management District

Lee County and the FFS may enter into an agreement for the FFS to manage the Lee County-owned portion of BRP.

**B. Management Authority, Purpose and Constraints**

**1. Purpose for Acquisition / Management Prospectus**

Management will be conducted by The Florida Department of Agriculture and Consumer Services, Florida Forest Service, with assistance from FWC and other agencies, as warranted. FFS will be the manager of ranch resources, forest resources, recreation, watershed protection, and land use planning on BRP.

The BRP “is established to protect and preserve the environmental, agricultural, scientific, scenic, geologic, watershed, fish, wildlife, historic, cultural, and recreational values of the Preserve, and to provide for the multiple use and sustained yield of the renewable surface resources within the Preserve” (FS 259.1052(4)).

The spatial extent of BRP, coupled with the fast-growing human population in southwest Florida, makes the ranch an important conservation tract. The BRP can provide nature-based recreation activities for outdoor enthusiasts, while contributing

(along with other large conservation lands) to the conservation of habitat used by threatened and endangered species and providing for habitat and dispersal of wildlife with large home ranges. BRP also contributes to the establishment of a conservation corridor between Lake Okeechobee and the Gulf of Mexico comprised of both public conservation lands and lands under private stewardship.

BRP may also contribute to aquifer recharge for southwest Florida. The waters of Babcock Ranch's Telegraph Swamp and Creek contribute to the health of the Everglades ecosystem, particularly the Caloosahatchee River and Charlotte Harbor estuary. Protection of BRP is important as a part of the more than eight billion dollar federal and state effort to restore the Everglades (ARC Liaison Staff and FNAI 2001).

Multiple-use management for BRP will be accomplished through the integration of the following strategies:

- Management as a working ranch;
- Practice sustainable forest management for the efficient generation of revenue and in support of forest management objectives;
- Provide for resource-based outdoor recreation opportunities for multiple interests;
- Manage healthy forests and native ecosystems ensuring the long-term viability of populations and species listed as endangered, threatened or rare, and other components of biological diversity including game and nongame wildlife and plants;
- Protect known archaeological, historical, cultural and paleontological resources;
- Maintain and protect hydrological functions related water resources and the health of associated wetland and aquatic communities;
- Provide research and educational opportunities related to natural resource management.

Revenue derived from ranch operations, agricultural operations, and recreational activities will be used to help offset incurred expenses, capital improvements and personnel costs.

Staffing will consist of a Ranch Manager and one Forester. Personnel and equipment is utilized from the Myakka River District and the Caloosahatchee Forestry Center. Volunteer groups such as members of the Florida Master Naturalists associated with The University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) assist with trail establishment and maintenance.

## **2. Degree of Title Interest Held by the Board**

The Board of Trustees of the Internal Improvement Trust Fund (TIITF) holds title to approximately 67,618.81 acres of the BRP. The remainder is held by the Board of County Commissioners of Lee County. Additionally, TIITF holds a conservation easement over 294 acres which links the Curry Lake Tract with the Telegraph Swamp Recreation Area.

## **3. Designated Single or Multiple-Use Management**

The BRP is managed under a multiple-use concept by the FFS, under the authority of Chapters 253 and 589, Florida Statutes. The Legislature designated the FFS the lead managing agency, and FWC is the cooperating agency, in Section 259.1053, F.S., for the state-owned portion, and under a Management Agreement Contract with Lee County entitled, "Agreement between Lee County and State of Florida Department of Agriculture and Consumer Services, Florida Forest Service" dated XXXX, XX, XXXX. FFS will manage the Lee County portion as well.

**Comment [d1]:** Cat will insert date once doc is signed by Lee Co.

Multiple use is the harmonious and coordinated management of timber, recreation, conservation of fish and wildlife, forage, archaeological and historic sites, habitat and other biological resources, and water resources so that they are utilized in the combination that will best serve the people of the state, making the most judicious use of the land for some or all of these resources and giving consideration to their relative values. Local demands, acquisition objectives, and other factors influence the array of uses that are compatible with and allowed on any specific area of the BRP. This management approach is believed to provide for the greatest public benefit, by allowing compatible uses while protecting overall ranch operations, forest health, native ecosystems and the functions and values associated with them.

BRP will be a model for public conservation land management that combines multiple-use and income-producing activities. BRP was established to protect Florida's historical ranching heritage and conserve the environmental, agricultural, scientific, scenic, geologic, watershed, fish, wildlife, historic, cultural, and recreational values of the Preserve, and to provide for the multiple use and sustained yield of the renewable surface resources within the Preserve (FS Section 259.1053, F.S.). The goal is to have the ranch, agricultural, forestry, recreation, and eco tourism activities generate revenue to help cover the costs of operations and management of BRP.

#### **4. Revenue Producing Activities**

Numerous activities on the BRP provide for multiple-use, as well as generate revenue to offset management costs. Revenue producing activities will be considered when they have been determined to be financially feasible and will not adversely impact management of the BRP. Current and potential revenue producing activities for BRP include, but are not limited to:

- *Cattle Grazing* – BRP may graze its own cattle or may utilize cattle grazing lease agreements which will generate annual income. No additional natural areas will be converted to improved pasture.
- *Tenant Farming* – BRP may utilize tenant farming lease agreements which will generate annual income. There may be additional tracts of land that have potential to become tenant farming leases. No additional natural areas will be converted to farmed areas.
- *Timber Harvests* – Timber harvests on BRP will be conducted on a regular basis to improve forest health, promote wildlife habitat, restore plant communities, generate revenue and provide other benefits.

- *Recreation* – Fees may be collected for day use activities and camping. Other recreation receipts may include commercial vendor permits, BRP use permits, and annual passes.
- *Hunting* – The FWC, in cooperation with FFS, may establish and administer fees for Tier I and Tier II public hunting on BRP.
- *Apiaries* – BRP may utilize apiary agreements which will generate annual income. There may be additional tracts of land that have potential to become involved in apiary leases.
- *Fuelwood* – BRP staff may consider issuance of fuelwood permits as requested.
- *Cabbage Palm Harvesting* – Commercial sales of cabbage palm may be allowed if a suitable market can be developed and if conditions permit. Cabbage palms from disturbed sites will be sold prior to those areas being restored.
- *Stump sales* – Stump sales may occur, as conditions permit. In limited cases, stump removal may be considered in areas following major disturbances such as wildfires, hurricanes, tornadoes, insects or other wind throws in order to accomplish management goals.
- *Sod Sales* – Sod sales have been used as part of the pasture, agricultural area management and provide income generation. Sod is used for public roadside projects.
- *Cell Phone Tower Lease*- The current lease is with Crown Castle GT Company, LLC and continues for a period of 20 years total, with multiple intermittent five-year extension terms available throughout the lease period. Rent due to the State escalates at 4% per year. The lease provides a moderate revenue source per year.
- *Leases and Concessions* – Potentially, leases may be awarded to private entities regarding the management of a variety of activities on BRP. The leased activities may include, but are not limited to: a shooting range; the BRP Ecotour; Cypress Lodge; cattle drives; cabin rentals; service (volunteer opportunity) trips; overnight guided camping trips on horseback; guided education tours; or other ecotourism-type opportunities compatible with the property (e.g., its natural resources and management operations).
  - The Department of Agriculture and Consumer Services and the Florida Forest Service support the goal of sustaining the ecological and economic viability of BRP. FDACS will establish protocol for potentially entering into multiple agreements for the management, use and occupancy of various facilities on BRP. The instrument type(s) utilized in this process may include, but are not limited to the following:
    - One all-encompassing management agreement regarding many or all activities on BRP; or,
    - Multiple individual agreements, each regarding an individual activity; or,
    - An agreement which permits certain activities to a specific lessee, while other activities are simultaneously managed by FFS.
  - Regardless of which agreement option is utilized, the FDACS protocol shall ensure reasonable competition and set guidelines for determining appropriate fees, terms, and conditions for such agreements.

- *Airstrips* – Two inactive airstrips exist on BRP. FFS may lease these areas out to another managing entity.
- *Other Revenue Sources* – Other possible revenue producing activities may include but are not limited to: the sale of wiregrass and other native seeds, pine straw, palm fronds and/or palmetto drupes. Activities associated with sod harvesting, events, alligator harvesting, and/or alligator eggs may also be revenue sources on BRP. Additionally, commercial photography/motion picture/television production, various events, and/or native plant nursery activities may be revenue sources.

FFS will have the ability to seek outside state, federal, and private foundation grants and revenue sources, as well as corporate donations to support BRP once FFS management of BRP commences.

**5. Conformation to State Lands Management Plan**

Management of the BRP under the multiple-use concept complies with the State Lands Management Plan and provides optimum balanced public utilization of the property. Specific authority for the FFS’s management of public land is derived from Chapters 589, 259, and 253, Florida Statutes.

**6. Legislative or Executive Constraints**

The Babcock Ranch Preserve Act provides directives that govern the establishment of BRP, its long term management, and the relationship of the agencies and entities involved in its operation and management.

Legislative and Executive constraints specifically directed towards the BRP exist. These are outlined in the Management Agreement with Lee County, and in Sections 259.1052 and 259.1053, F.S.

**7. Aquatic Preserve / Area of Critical State Concern**

- a. According to information provided by the Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas, the BRP does not contain and is not adjacent to any of the state’s aquatic preserves.
- b. This property is not an Area of Critical State Concern, or under study for such designation.
- c. Water Resources and Classification: The Florida Department of Environmental Protection, Bureau of Water Resource Management, records no Outstanding Florida Waters located on the BRP property and all surface water present is characterized as Class III, which is the statewide default classification (See Exhibit F).

**C. Capital Facilities and Infrastructure**

**1. Property Boundaries Establishment and Preservation**

The BRP includes 73,239.17 acres, with a majority of the property located in southeast Charlotte County and a smaller portion in northwest Lee County (Exhibit B). The BRP is located approximately 17.5 miles east of Punta Gorda, 5 miles north of the Caloosahatchee River, and 34.5 miles west of Lake Okeechobee. The western boundary of the BRP is separated from the Fred C. Babcock-Cecil M. Webb Wildlife Management Area (BWWMA) by State Road 31 (Exhibit D). A portion the eastern boundary is adjacent to the proposed Fisheating Creek Florida Forever Project (Exhibit E), which is contiguous with the Fisheating Creek Wildlife Management Area (FCWMA) to the east. The southern boundary is adjacent to the Caloosahatchee Regional Park. The site is within South Florida Water Management District (SFWMD) Caloosahatchee River Watershed.

The boundaries of the property are generally shown in Exhibit J and detailed in the legal description of the property (Exhibit A).

#### Tracts

See Exhibit C to view individual tract maps for BRP.

BRP encompasses eight “Tracts” of land. The entire BRP property consists of two main parcels connected to each other by a conservation easement. The smaller, separate tract, Curry Lake Tract (approximately 2,300 acres), lies to the west-southwest of the larger piece of BRP, and is adjacent to SR 31 near the community of Tuckers Corner. This parcel is referred to as the Curry Lake Conservation Easement in the Babcock Ranch Florida Forever Application (see Exhibit G to view applicable portion of the Florida Forever Project Proposal, Babcock Florida Company, 2001). The larger BRP parcel surrounds the smaller parcel on the north, east and south, but it is not adjacent, as the two parcels are separated by Babcock Ranch Community (BRC) lands.

The larger BRP parcel is divided into seven named tracts. The majority of the larger parcel’s acreage may be leased out for private management in the future. The area that may be potentially leased out is divided into the Lee County Tract and the two larger tracts:

- the North End Tract, and
- the South End Tract

Portions within both the North End and South End Tracts, as well as the Lee County Tract, may be subject to FWC Tier II hunting (hunt permits required) in the future. Additionally, the southwestern portion of the North End Tract that may not be subject to Tier II hunting may be used for Operation Outdoor Freedom, disabled veteran and youth oriented outdoor activities, as well as public access for recreation. The North End Tract contains an area with multiple houses of various conditions, workshop areas, and the Cypress Lodge. The shooting range is located within this vicinity and may be utilized in a recreational capacity in the future. Also contained on the North End Tract are all structures and equipment associated with the Ecotour. Both the

North End and South End Tracts, and the Lee County Tract, potentially contain multiple hunt camps with associated structures.

The remaining areas not encompassed into the two larger tracts (North End and South End) and the Lee County Tract, are areas that may be excluded from any potential leases. These remaining areas are broken into the following tracts:

- **Bermont Crossing Recreation Area** – This tract is located in the far northwest corner of BRP, surrounded to the east and south by the North End Tract. State Road 31 runs along the western boundary and County Road 74 runs along the northern boundary. This tract houses the FFS fire tower, a couple of mobile homes and another residential structure. Potential uses of this tract may include but are not limited to: hiking and primitive camping, Operation Outdoor Freedom (OOF) and youth oriented outdoor activities.
- **AMI Kids Academy Tract** – This tract lies just south of the potential FFS Headquarters area, within the North End Tract. This tract is surrounded on all sides by the North End Tract. This area is managed by the Charlotte County School Board and operates as a boy’s corrective educational institution.
- **Telegraph Swamp Recreation Area Tract** – This tract is located at the central west portion of the BRP larger parcel. It is adjacent to the North End Tract to the northeast, and the South End Tract to the southeast. Babcock Ranch Community lands lie to the west and south of this tract. Potential future usage on this tract may include but is not limited to: OOF, disabled veteran and youth oriented outdoor activities, and general recreational public access related to hiking trails and/or boardwalks, and developed campgrounds.
- **Jack’s Branch Recreation Tract** – This tract is located on the northeastern-most portion of BRP’s larger parcel. This tract is subject to FWC’s Tier I hunt activities and may also contain hunt camps and other recreational activities.

The BRP boundary lines (68.32 miles total, including both Charlotte and Lee County properties) will be managed by FFS personnel in accordance with the guidelines of the most current version of the State Forest Handbook. Approximately 15 perimeter gates exist on BRP that require periodic maintenance by FFS.

## **2. Improvements**

BRP is a working ranch with multiple revenue-generation sources including cattle grazing, farming operations, timber harvesting, and ecotourism. As such, a number of improvements occur on the property associated with these uses (Exhibit H). FFS reserves the right to re-purpose existing improvements to best suit the needs of management activities. The property improvements include residences, barns, storage buildings, cattle pens, a two-story administrative office, and the Cypress Lodge. The Ecotour facility includes a restaurant, gift shop, reception building, museum, restrooms, artifact display building, and an animal compound. Site improvements throughout the property include water wells, roads (paved, rock, or graded), perimeter fencing and cross fencing, gates, improved pasture, and irrigated

and drained agricultural fields. A number of drainage improvements occur throughout the property, including various sized ditches, culverts, the Big Island Canal, and water control structures such as levees, dams and spillways associated with Telegraph Swamp.

FFS reserves the right to maintain existing roads, planted plots, trails and utilities. FFS also reserves the right to construct, expand and install such roads, trails and utilities, as may be or may become reasonably necessary to manage the property and the installations and facilities now existing or constructed during the ten-year planning period on the property. Any future road construction and/or maintenance on BRP will be implemented in accordance with applicable BMPs. Typical construction and maintenance activities may include but are not limited to: disking, plowing, grading, excavating and the application of clay, gravel, shell or other appropriate material, or any other activity necessary for management purposes. Please see Exhibit I to view the BRP Roads Map.

FFS reserves the right to replace existing structures at their current location. Any such replacement may be increased to a footprint size no larger than 125% of the size of the original structure's footprint on the ground (square footage may be increased over the 125% allotment in the case of more than one story structures).

Once FFS assumes lead management responsibilities on BRP, a ranch inventory will be pursued. Structures currently known to be present on the BRP (Exhibit H) include, but may not be limited to:

- a. Two story administrative building
- b. Three equipment maintenance sheds/facilities
- c. Cypress Lodge
- d. Ten houses
- e. Four mobile homes
- f. Fire Tower
- g. Seven hunt camps with associated structures
- h. Babcock Wilderness Adventures (7 buildings)
- i. AMI Youth Facility (6 buildings)
- j. One check station
- k. One vault toilet
- l. Two trail head kiosks
- m. Numerous agricultural barns, cowpens, and other structures utilized for ranch activities
- n. Shooting Range (may potentially include living quarters)
- o. Machine Shop
- p. Well House
- q. Potentially historical ranch equipment including several windmills and a possible logging winch – these items will be catalogued as they are discovered and documented as appropriate.



**3. On-Site Housing**

Currently there are twelve residences on the property, in addition to two residences currently occupied by FFS personnel at the FFS Fire Tower Area on the Bermont Crossing Recreation Area. FFS may increase on-site housing (mobile/manufactured home) on BRP if deemed necessary to alleviate security and management issues. If it is determined that there is a need for additional security on BRP, the feasibility of adding housing will be evaluated and established if considered appropriate by the District Manager and approved by the FFS Director. Prior to the occurrence of any ground disturbing activity for the purpose of establishing on-site housing, a notification will be sent to the DHR and FNAI for review and recommendations. This type of housing will not exceed three homes per location. The possibility of more than one on-site housing location may occur if considered necessary by the District Manager and approved by the Director.

**4. Operations Infrastructure**

Implementation of any of the activities within this management plan is contingent on availability of funding, other resources, and other statewide priorities.

Utilities onsite include multiple wells, multiple septic systems, phone lines and a utility service provider. FFS will prepare a complete inventory of available utilities on BRP prior to the transfer of management has occurred in August of 2016.

Current staff assigned to BRP is limited to a Ranch Manager and Forester. Staff will have offices at the Punta Gorda Forestry Station until such time that office space can be secured on the property.

The District Manager will work to achieve the goals outlined in this management plan. Day to day resource management (timber cruising, planning, etc) will be the responsibility of the Forester, under the direction of the Ranch Manager. Day to day property operations (road maintenance, prescribed burning, etc) may be addressed in the appropriate leases and agreements, with some portion of these operations being the responsibility of the Park Rangers and the responsibility of the FFS fire control personnel, under the direction of the District Manager and respective Forest Area Supervisor.

**D. Additional Acquisitions and Land Use Considerations**

**1. Alternate Uses Considered**

During this management period, alternate uses will be considered and evaluated for compatibility with existing uses, and with the management goals and objectives of BRP, as requested. Examples of possible alternate uses are: linear facilities, communication towers, antennas, or other uses outlined in this plan. Uses determined as incompatible include but are not limited to: dumping, mining, and excavation, or as determined by law. Any other use that could adversely impact the property's acquisition purpose will not be permitted under any circumstance.

**2. Additional Land Needs**

The acquisition of additional land within the optimal management boundary (See Exhibit J) would facilitate restoration, protection, maintenance, and management of the resources on BRP.

Approximately 48,800 acres, located in five main sections of land bordering the BRP boundaries, have been identified as located within the optimal boundary (Exhibit J). Four of the sections are portions of, or expanded areas stemming off of, the four distinct blocks of land within the BRP optimal boundary as indicated in the 2008 Pandion Plan. The fifth section of land now within the BRP optimal boundary comprises the “Retained Property,” owned by Kitson & Partners, LLC, and planned to be developed into the Babcock Residential Community in the future, year of potential development unknown. This is the section of land that runs between the Curry Lake Tract and the main larger piece of the property. These optimal boundary lands were identified primarily to add to various watershed protection strategies and/or corridor linkages between: upstream wetlands to BRP, BRP to the Caloosahatchee River, and other nearby conservation lands to BRP. The optimal boundary was identified in a collaborative process by plan partners at the August 9 and 10, 2007 Plan Development Workshop during the creation of the 2008 Pandion BRP Land Management Plan. Additional BRP optimal boundary planning took place during the creation of this 2016 FFS land management plan among FFS land administration staff, in collaboration with FFS field staff.

In the future, FFS may collaborate with Lee County, FWC, Department of Environmental Protection/ Division of State Lands (DEP/DSL), adjacent/nearby landowners and other potential interested parties, stakeholders, NGOs, working groups, federal entities, counties, municipalities, among others, to refine the BRP Optimal Boundary.

### **3. Surplus Land Assessment**

In 2015, FFS conducted an internal evaluation of the state-owned land holdings on BRP to assess which, if any, acreage within the property may be designated as surplus. The surplus assessment performed by FFS involved property evaluation and communications among FFS district and land administration staff. Analysis of aerial photography and various applicable maps; an examination of surrounding land use, accessibility potential, onsite ranch, revenue-producing and forestry resources; and contemplation of compatible public recreational uses and educational opportunities, as well as site-specific management needs, were performed during the assessment. Additionally, potential future or pending nearby or adjacent land exchanges and known applicable county land use exchanges were considered by staff.

FFS has completed an assessment to determine which, if any, areas on BRP may be designated as surplus. All lands on BRP have been deemed necessary for management purposes at this time. Therefore, no state-owned lands on BRP are recommended as having current surplus potential. FFS reserves the right to conduct additional assessments for surplus potential at a later date.

**4. Adjacent Conflicting Uses**

During the development of this management plan, FFS staff identified and evaluated adjacent land uses, reviewed current comprehensive plans, and future land use maps in making the determination that there are currently no known conflicting adjacent land uses. Additionally, FFS staff met with adjacent land owners and maintains liaison with those land owners to ensure that any conflicting future land uses may be readily identified and addressed.

FFS will cooperate with adjacent property owners, prospective owners, or prospective developers to discuss methods to minimize negative impacts on management, resources, facilities, roads, and recreation, and discuss ways to minimize encroachment onto the BRP.

**5. Compliance With Local Comprehensive Plans**

This plan was submitted to the Board of County Commissioners in Charlotte County and Lee County for review and compliance with their local comprehensive plans (See Exhibit AD)

**Comment [d2]:** Cat will do (SEND LETTERS TO COUNTIES) once plan is finalized – & insert letters back from counties once received.

**6. Utility Corridors and Easements**

**Easements on the property include:**

- a. Florida Gas Transmission Company – Multiple easements associated with utilities and infrastructure
- b. AT&T – 0.6 acre regeneration station
- c. Lee County Electric Cooperative – Multiple easements associated with electrical utilities
- d. Florida Power & Light – Multiple easements for overhead and underground electrical utility facilities
- e. United Telephone Company of Florida – Multiple easements for communication utility infrastructure
- f. Agreement with GTE Mobilnet, Inc.

**Sub-Leases on the property include:**

- a. Crown Castle Company - 10.0 acres for communication tower
- b. Charlotte County - 10.0 acres for Crossroads Wilderness Institute
- c. Various license/Use agreements for activities including, but not limited to: agriculture and cattle grazing

Additionally, the South Florida Water Management District (SFWMD) holds multiple permits for environmental resources, water use, and surface water. For more information see <http://mysfwmd.gov/ePermitting/>.

The FFS does not favor the fragmentation of natural communities with linear facilities and discourages them to the greatest extent practicable. When linear facility impacts are unavoidable, the construction of linear facilities will be encouraged in disturbed or otherwise altered areas. The FFS does not consider BRP suitable for any

new linear facilities, unless reserved as part of acquisitions or needed for management of BRP.

Collocation of new linear facilities with existing corridors will be considered, but will be used only where expansion of existing corridors does not increase the level of habitat fragmentation and disruption of BRP management activities. The FFS will further encourage the use of underground cable where scenic considerations are desirable. Depending on the size of easements, easements for such utilities are subject to the review and approval of the TIITF. Requests for linear facility uses will be handled according to the Governor and the Cabinet's linear facilities policy.

#### **E. Agency & Public Involvement**

##### **1. Responsibilities of Managing Agencies**

The FFS is the lead managing agency, responsible for overall resource management and public recreation activities. Pursuant to the Board of Trustees upland management authorization, the lead managing agency may enter into further agreements or to sub-leases on any part of the BRP.

The Florida Fish and Wildlife Conservation Commission has law enforcement responsibilities, enforces hunting regulations, cooperatively sets hunting season dates with FFS, and conducts other wildlife management activities with input from FFS. The Tier I and Tier II hunting areas established on BRP are under FWC's hunt management purview.

The FFS will cooperate with the Department of State – Division of Historical Resources (DOS-DHR) regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, Florida Statutes. DOS-DHR will be notified prior to the initiation of any ground disturbing activities by the FFS or any other agency involved with the BRP.

The South Florida Water Management District (SFWMD) will be consulted and involved in matters relating to water resources as appropriate.

##### **2. Law Enforcement**

Primary law enforcement responsibilities will be handled by law enforcement officers from the FWC. Rules governing the use of BRP are stated in Chapter 5I-4 of the Florida Administrative Code. FWC will enforce fish and wildlife regulations and provide assistance in enforcing rules. The Office of Agricultural Law Enforcement (OALE) will assist with open burning and wildfire investigations as needed. Additional assistance is provided by the Charlotte and Lee County Sheriff's Offices as needed.

Special rules under Rule Chapter 5I-4 of the Florida Administrative Code were promulgated for Florida Department of Agriculture and Consumer Services, Florida Forest Service, to manage the use of state lands and better control traffic, camping, and other uses in the BRP.

### **3. Public and Local Government Involvement**

This plan has been prepared by the FFS and will be carried out primarily by that agency. The FFS addresses public involvement through direct communication with individuals, user groups and government officials via Liaison Committees, Advisory Groups, public hearings and through direct contact with user groups. A Land Management Review Team conducted a review of management plan implementation in 2010 and again in July of 2014 (See Exhibit K). Both of the land management reviews were performed under the BRP management of Babcock Ranch Management. The review team's recommendations were incorporated into this plan as appropriate.

The plan was developed with input from the BRP Management Plan Advisory Group and was reviewed at a public hearing on date. A summary of the advisory group's meetings and discussions, as well as written comments received on the plan, are included in Exhibit AB. The Acquisition and Restoration Council (ARC) public hearing and meeting will serve as an additional forum for public input and review of the plan.

**Comment [d3]:** Cat will insert date once meeting dates are established – Nov 24<sup>th</sup>

**Babcock Ranch Advisory Group** – In 2013, the Florida Legislature created the Babcock Ranch Advisory Group via Chapter 259.1053, Florida Statutes. This nine-member, Commissioner of Agriculture appointed advisory group, is tasked with assisting FDACS by providing guidance and advice concerning the management and stewardship of the Babcock Ranch Preserve.

### **4. Volunteers**

Volunteers are important assets to BRP. Depending upon the type of volunteer service needed, volunteer activities may be one-time events or for long-term recurring projects and routine maintenance. The FFS will conduct volunteer recruitment and will encourage volunteers to assist with other activities to further the FFS's mission.

### **5. Friends of Florida State Forests – Babcock Ranch Preserve**

The Friends of Florida State Forests (FFSF) is a direct-support charitable organization (DSO) of the Florida Forest Service, established by Florida statute to support programs within Florida's 37 state forests, and BRP, and ensure these lands are available for future generations to enjoy. Through community support, the program assists in expanding opportunities for recreation, environmental education, fire prevention and forest management within Florida's state forests and BRP. FFSF is governed by a board of directors representing a variety of interests. FFS may establish an FFSF chapter, Friends of Babcock Ranch Preserve, associated with BRP.

#### **FFSF Organization**

The FFSF, Inc. organization is made up of a nine (9) member Board of Directors. This includes the three (3) Officers; President (FFS Director), Vice President, and a Secretary-Treasurer. The remaining six (6) Board members are at-large seats and there shall be at least one (1) representative from each of the four (4) Florida Forest Service regions. Chapter representation may exist and shall be limited to one (1)

representative per Chapter, and one (1) Program Coordinator and one (1) Fiscal Coordinator to administer the program and provide support to the Board.

### Responsibilities

#### *Board of Directors*

- Establishes policy
- Provides leadership, direction and planning
- Participates with FFSF events
- Maintain a fiduciary relationship with the FFSF
- Required to use the utmost good faith in the exercise of their power in the interests of the organization

#### *Program Coordinator*

- Provides support to Board
- Plans Board meetings and events
- Guides day to day operations
- Directs membership and programs
- Provides information to external and internal customers about FFS and FFSF programs and activities
- Maintains and updates FFSF database, website, social media, and other printed and electronic media
- Prepares the FFSF Annual Operating Budget
- Evaluates finances and project management
- Plans fundraising and promotional activities

#### *Fiscal Coordinator*

- Directs day to day fiscal operations
- Manages approved annual budget
- Ensures financial integrity

The Friends of Florida State Forests program is referenced in Chapter 589.012 of the Florida Statutes. For more information visit: [www.floridastateforests.org](http://www.floridastateforests.org).

### **III. Archaeological / Cultural Resources and Protection**

#### **A. Past Uses**

Originally lured to the area for hunting, Pittsburgh lumber magnate Edward Vose (E.V.) Babcock purchased the 91,361-acre tract of land known as Crescent B Ranch in 1914. At the time, the property was used for logging and agriculture.

Mr. Babcock struggled for several years trying to find the best way to use the longleaf pine pitch found on the property. One of the markets he discovered came from diamond mines in South Africa. The mines were having trouble because the timber forming the mine braces and infrastructure was easily destroyed by African termites. The excessive

pitch in the Crescent B Ranch timber was extremely effective in protecting the timbers from the African termites. He sold the timber to Rue Crate and Lumber Company who then sent the timber to South Africa.

After the timber was removed from the property, Fred C. Babcock, the son of Edward, assumed the day-to-day responsibility of managing the ranch. Fred Babcock began the process of replenishing the depleted forests on the Babcock property and removing non-native invasive plant species. A great advocate for conserving natural spaces, Fred Babcock is credited with establishing the tradition of cattle ranching and stewardship that continues to this day. In the 1940s, Fred Babcock entered into a deal with Florida's Game and Fresh Water Fish Commission (predecessor to FWC) to sell 19,200 acres and donate additional acreage that would become the neighboring BWWMA. Fred Babcock managed the remaining Crescent B Ranch property until his death in 1997. Decades of responsible land management and environmental stewardship by the Babcock family maintained this diverse stretch of cypress domes, swamps, mesic flatwoods, and open pastures as a true environmental treasure.

**B. Archaeological and Historical Resources**

Telegraph Swamp and Telegraph Creek located on BRP were named for the alignment of the first telegraph line constructed and extended into southern Florida by the International Ocean Telegraph Company. This line served as the southernmost telegraph office in the U.S., which was located at Punta Rassa. On February 15, 1898, this office was the first to receive news of the sinking of the U.S. Battleship Maine by the Spanish in Havana Harbor, the event that precipitated the Spanish-American War. This event carries significant historical value in U.S. history, as well as regional public interest.

The BRP has a number of mid-20th-Century buildings characteristic of a working ranch and ecotourism operation. The 1940s lodge, old barn and workshop, and old hunting camps/cabins are characteristic of a mid-20th-Century Florida ranch. One of these cabins, known as the Governor's Cabin, was visited often by Governor Chiles during his term of office. Old logging tram lines and turpentine extraction relics are characteristic of the use of forest resources in Florida in the late 19th and early 20th Centuries. In addition, an old logging town named Rueville, made up of several railroad box cars, was historically located on the property during the time that Rue Crate and Lumber Company was logging pine on Crescent B Ranch. These resources provide opportunities for interpretation of the Florida ranching and forestry traditions of more recent times, which will continue to be of interest as part of the cultural and historical setting of the working ranch that is represented for visitors and tourists at BRP.

Information on historic and cultural resources was requested from and supplied by the Department of State, Division of Historic Resources. The DHR Florida Master Site file indicates that there are no previously recorded archaeological sites, two resource groups, and no standing structures on BRP. The two linear resource sites on BRP, as documented by DHR, are listed in Table 2, below. Please see Exhibit L to view the response from DOS-DHR.

**Table 2: Archaeological and Historical Sites on BRP**

<b>SITE ID</b>	<b>SITE NAME</b>	<b>SITE TYPE</b>
CH01893	Big Island Canal	Linear Resource
LL02618	Big Island Canal	Linear Resource

The Big Island Canal historical resource extends through the BRP property in both Charlotte and Lee Counties, hence the two site identification numbers, one for each county. This structure is approximately 5.6 kilometers long and 20 meters wide. The Big Island Canal dates back to the 1940's, as it was constructed to drain water from the Telegraph Swamp area toward Telegraph Creek. In the 1970's, additional water control devices were added to the structure to retain water during arid times of the year. The canal structure is known to be similar in form and function like many other canals that are situated throughout South Florida.

FFS is aware that unrecorded historic structures and features exist on BRP. FFS intends on completing site files for all applicable historical and archaeological resources discovered onsite on an ongoing basis as sites are discovered. DHR advises that both prehistoric and historic sites may exist on BRP. More than likely, most of the prehistoric and protohistoric (likely Seminole and Miccosukee) sites that may remain undiscovered on BRP, may be found along the uplands, adjacent to Telegraph Swamp. Furthermore, numerous sites related to the lumber and turpentine industries, as well as ranching and hunt clubs that could date back as far as the late 19<sup>th</sup> century may exist on BRP.

DHR reports that 66 historic structures, 39 archaeological sites, nine resource groups, three historic bridges and one historical cemetery are currently listed in the Florida Master Site File within five miles of BRP. The archaeological sites in the region consist of prehistoric campsites and habitations, aboriginal mounds and historic building remains and homesteads. The sites date back from the Middle Archaic period (5,000 to 3,000 B.C.) and also include Late Archaic, Glades (1,000 B.C. – A.D. 1700) and 20<sup>th</sup> century sites.

DHR recommends that FFS may elect to have an Archival and Historical Study conducted on the ranch, from which, a results-based survey may be completed.

### **C. Previous Actions**

There have been numerous efforts over the years related to archaeological and cultural studies. Limited funding has precluded further efforts. The following is a list of former historical/archaeological efforts regarding the property:

1. An archaeological and cultural study was conducted by Kimley-Horn and Associates (KHA) in 2005 as a part of the due diligence study for the acquisition of the Babcock Ranch Preserve. The process included an interview with several long-term employees. No archaeological sites were found.
2. In addition, Dr. William Marquart, Archaeology Professor at the Florida Museum of Natural History, University of Florida, and Director of the Randell Research Center at Pineland in Lee County, reviewed state and local records for the Ranch and found no sites identified in the records.



3. A professionally contracted archaeological study was conducted in the BRP farm field (panther mitigation project) restoration project adjacent to Curry Lake and State Road 31 prior to the beginning of the restoration project as an element of the permit requirement.
4. Kitson & Partners hired Steve Tutko, founder and implementer for Fred Babcock's Ecotour program and who worked with Mr. Babcock to review all the boxed documents in storage at the Ranch and in West Palm Beach searching for logging records, historic documents of significance, deeds, and other relevant legal or business documents to gain a historic perspective and to shed light on any past management practices, timbering, cattle and other related operations. The State Management Review Team suggested that BRM and possibly BRI request that the Division of Historical Resources (DHR) conduct an archaeological site and cultural study, with particular attention focused on the potential of archaeological sites near Jacks Branch and Telegraph Swamp/Creek. In addition, DHR will be requested to identify and evaluate historical structures and features to insure protection from inadvertent demolition.
5. In addition to the Kimley-Horn inventory of cultural structures, locations, and history recognized in the Management Plan as significant resources, BRM in collaboration with Kitson & Partners Babcock Ranch Community planning team, have searched for and identified remnant elements such as logging winches, windmills and other artifacts used in the Ranch past activities that should be preserved and restored. The artifacts found on the BRP property should stay in State possession may be restored and utilized at key interpretive BRP locations in future exhibits and venues.

**D. Ground Disturbing Activities**

Representatives of DHR and FNAI will be consulted prior to the initiation of any proposed significant ground disturbing activity, not listed in this plan, by FFS or any other public agency. The FFS will make every effort to protect known archaeological and historical resources. The FFS will follow the "Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands" (See Exhibit M) and will comply with all appropriate provisions of Section 267.061(2) Florida Statutes. Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of the "List of ARC / Division of State Lands Approved Interim Management Activities".

**E. Survey and Monitoring**

Currently there are four local district FFS personnel trained by DHR as archaeological site monitors. FFS will consult with public lands archaeologists at DHR to determine an appropriate priority and frequency of monitoring at each of the four listed sites, as well as any protection measures that might be required. FFS field staff will monitor the listed sites to note condition and any existing or potential threats.

As information becomes available, and as staffing allows, any known archaeological and historical sites will be identified on maps to aid BRP and law enforcement personnel in patrolling and protecting sites. Applicable surveys will be conducted by FFS staff or others during the process of planning and implementing multiple-use management

activities. FFS personnel will remain alert for any environmentally significant resources and protective actions will be taken as necessary. In addition, FFS will seek the advice and recommendations of DHR regarding any additional archaeological survey needs. Trained monitors will oversee ground disturbing activities in which DHR recommends monitoring. The FFS will utilize the services of DHR Public Lands archaeologists, when available, to locate and evaluate unknown resources, and to make recommendations in the management of known resources.

DHR has recommended that FFS work with DHR to periodically determine the need for a complete historical cultural resource assessment and to determine how it would be completed. A historic architectural evaluation is recommended prior to the demolition of any structures, including barns and cowpens.

All significant ground disturbing projects that are not specifically identified by type of activity and location in this approved management plan will be sent to the Division of State Lands, FNAI, and DHR for review. Recommendations outlined in the Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands (Exhibit M) will be followed.

#### **IV. Natural Resources and Protection**

##### **A. Topography**

The BRP is a fairly flat, low-lying area, with elevations ranging from 15 feet above mean sea level in the southwestern portion where Telegraph Creek exits on the property, to 60 feet at points along the northern boundary. Drainage of the area occurs through sloughs that lead into the central Telegraph Swamp/Telegraph Creek drainage or to the Jack's Branch drainage area at the east-northeast corner of BRP. Both creeks eventually drain into the Caloosahatchee River, about one mile to the south of BRP. Swamps on the Curry Lake tract portion of the BRP drain into Trout Creek, which then flows south off that tract. Water depths in the isolated cypress ponds on BRP may range from a few inches to 5 feet deep.

BRP is underlain with Miocene-Pliocene sedimentary deposits composed principally of limestone and calcareous sandstone (e.g., Hawthorn group). Marine sands and shell sediments of ancient Plio-Pleistocene seas overlie the calcareous strata. Ancient sea-level fluctuations, caused by the periodic formation and melting of ice caps, are responsible for much of the gentle topography and poor soils of South Florida.

##### **B. Soils and Geologic Resources**

###### **1. Resources**

Soils information for BRP was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). Over 30 different soils are listed on the BRP. The predominant soils listed by the NRCS include: Immokalee sand, Oldsmar sand, Malabar fine sand, Pineda fine sand, Wabasso sand,

and Winder sand. For detailed information on all soils present on BRP, see Exhibit N.

**2. Description**

BRP soils are predominantly poorly drained (hydric), acidic sandy soils with an organic or clay hardpan at various depths below the surface. In some lower areas, a layer of organic muck or peat has accumulated. The clay substratum has a profound influence on drainage, preventing water from seeping into the ground when the overlying sand is saturated and interfering with the capillary passage of water up into the topsoil from below the clay substratum during dry periods. The result is that such soils are excessively wet during rainy periods and excessively dry during periods of drought.

The flat, acidic sands over organic or clay hardpans are consistent with the vegetation that is seen on BRP. Pine flatwoods, wet prairie, and dry prairie occur on relatively flat, moderately-to-poorly drained acidic soils while swamps, marshes, and forested wetlands are typically confined to poorly drained neutral sands and mucks.

**3. Soil Protection**

Currently, the FFS is not aware of any known soil or erosion problems present on BRP. Management activities will be executed in a manner to minimize soil erosion. If problems arise, corrective action will be implemented by FFS staff under the direction of the FFS Forest Hydrology section in conjunction with recommendations as contained in the most current version of the Florida Silviculture Best Management Practices Manual.

**4. Soil Management**

Most of the natural communities on BRP, including wetlands, have been managed to support ranch operations. Restoration projects that may occur on BRP will be designed to enhance ecological integrity. These projects will occur in conjunction with ranch operations and public access opportunities, requiring considerations of compatibility among activities.

Soil disturbing activities shall be confined to areas disturbed prior to acquisition and that have the least likelihood of experiencing erosion problems, or as specified in this plan. Soil disturbing activities will follow landform contours to the greatest extent practicable. On areas that have been disturbed prior to state acquisition, such as the row crop tenant farms, an assessment will be requested from NRCS to determine if soil erosion is occurring, and if so, appropriate measures will be implemented to stop or control the effects of this erosion.

Prior to ground disturbing activities (e.g., construction of buildings, parking lots, and new roads), FNAI, DHR, and Lee County (for projects occurring in Lee County) will be consulted. Establishment of new pre-suppression fire lines should be avoided where possible, but if necessary should be located away from wetlands and ecotones

areas between wetlands and uplands as much as possible. See Section VI Forest Management Practices on the use and installation of fire lines.

### **C. Water Resources**

The water resources on BRP perform essential roles in the protection of water quality, groundwater recharge, flood control and aquatic habitat preservation. The BRP and the waters of the Telegraph Swamp and Telegraph Creek are extremely important to the health of the Everglades ecosystem, particularly the Caloosahatchee River and its estuary. In addition, the entire property is within the Charlotte Harbor National Estuary Program's study area. Water resources on BRP consist of surface water features including wetlands, creeks, canals, and open water areas, as well as the subsurface groundwater aquifers.

In addition, Chapter 259, Florida Statutes authorized the acquisition of the state's portion of the BRP in order to protect and preserve for future generations the scientific, scenic, historic, and natural values of the ranch, including rivers and ecosystems; to protect and preserve the archaeological, geological, and cultural resources of the ranch; and to provide opportunities for public recreation compatible with the working ranch and agricultural activities conducted on the property. The Department of Agriculture and Consumer Services, Florida Forest Service shall, with the cooperation of the Florida Fish and Wildlife Conservation Commission, be the lead managing agency responsible for the management of BRP. In the interest of maintaining these valuable resource functions, management personnel will work with the Florida Forest Service Hydrology Section to incorporate wetland restoration into the overall resource management program as opportunities arise, particularly where wetland systems have been impaired or negatively impacted by previous management activities or natural disasters.

#### **1. Resources**

Babcock Ranch Preserve is located north of the Caloosahatchee River in Charlotte and Lee Counties and is generally bounded on the north by State Road 74, along the west by State Road 31 and along the east by Glades County. Historically known as the Crescent B Ranch, BRP has been in operation since the early 1900s. Initially, BRP included lands now known as the Fred C. Babcock-Cecil M. Webb Wildlife Management Area (WMA) and the Babcock Ranch Communities (BRC) properties that exceeded over 100,000 acres.

From its beginnings, BRP was utilized primarily for timber production with cattle production on native range. Surface water drainage improvements in the early 1900s were limited, and given the absence of significant development in the region, were of little consequence. During the mid-1900s, onsite drainage efforts intensified likely in an effort to manage surface waters to allow greater access to more of the site during most of the year. Shortly thereafter, land conversion to improved pasture and row crop farming began, thus increasing the need for drainage. These efforts have over the years resulted in an overall shift in vegetative cover in some areas due to changes in the hydrologic regime.

The site is designated by the South Florida Water Management District as being within two separate watersheds, the Tidal Caloosahatchee watershed, which discharges to the Caloosahatchee River, and the Western Caloosahatchee watershed, which discharges upstream of the Army Corps of Engineers S-79 locks. Historically, storm water runoff from the property reached the Caloosahatchee via one of six named tributaries: Trout Creek, Owl Creek, and Telegraph Creek, that are in the Tidal portion of the Caloosahatchee, and Fichter Branch, Cypress Creek, and Spanish Creek, which are within the Western Caloosahatchee basin, upstream of Structure S-79.

There are no Outstanding Florida Waters located in or near the site (Rule 62-302.700, Florida Administrative Code (FAC)). Any surface waters on the site are classified as Class III waters (subparagraphs 62-302.400(16)(b)8 and 62-302.400(16)(b)36, FAC, which is the statewide default classification (Exhibit F).

Historically, the Babcock Ranch Preserve was dominated by mesic flatwoods, dry prairie and cypress swamps. Other wetland communities, particularly hydric flatwoods, herbaceous marshes and wet prairies were also located throughout the property. Therefore, it is likely the majority of the BRP was seasonally flooded during normal wet years.

Prior to the mid-1940s, development of the working ranch created a system of ditches/canals/culverts to drain and control surface runoff on portions of BRP. The drainage network altered historic hydroperiods and seasonal high water levels, resulting in: (1) the encroachment of flatwood/hammock species such as cabbage palm (*Sabal palmetto*), South Florida slash pine (*Pinus elliottii* var. *densa*) and hardwoods; (2) invasion by non-native invasive vegetation such as Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquefolia*) into cypress swamps; and (3) the movement of transitional wetland plant species into areas that were once open water features such as the centers of marshes and cypress domes and openings in cypress strands.

The installation of a dam across the southern portion of Telegraph Swamp allowed for control and retention of surface water from the property. Timber harvesting, agriculture and prescribed burning have eliminated portions of pines in the flatwoods and cypress trees in swamps, converting these areas to early shrub successional stages of upland or wetland plant communities. Past management activities on the ranch have left large tracts of flatwoods intact, replanting pines and limiting the harvest of cypress. A prescribed burning program was initiated in areas of timber management; and non-native invasive plant and animal controls were implemented.

Forested wetlands on the BRP are dominated by cypress and other mixed hardwoods. Historically, there was more hardwood swamp on BRP than occurs today. The majority of this wetland forest type now appears to be cypress swamp. The cypress communities are circular depressions and elongated flow-ways or cypress strands.

Telegraph Swamp, which occurs in the western half of the property, is the largest wetland flow-way system on BRP and is oriented from the northwest to the southeast. The majority of the surface water runoff is diverted by a network of ditches, canals and channelized streams into Telegraph Swamp that ultimately discharges to the southwest into the Caloosahatchee River in Lee County.

The majority of Telegraph Swamp still remains, but in recent years, portions have been cleared or thinned of cypress leaving openings across the forested landscape. Since 1914, all of the cypress trees on the property were harvested, except for only one “old growth” stand of 100-foot tall cypress which remains on the east side of Babcock Ranch.

The surface waters on BRP consist of natural features such as: open water areas in cypress strands, deep water depression marshes and cypress domes, and creeks and man-made features such as canals/ditches, cattle ponds, and borrow ponds. Natural creeks occur onsite such as Telegraph Creek, Clay Gully, etc. Telegraph Creek is the southern outflow for Telegraph Swamp. Clay Gully is a partially channelized creek system which drains areas in the northeast toward the central part of Telegraph Swamp. The site has few remaining natural streams. For the most part, historic streams within the limits of the site have been replaced by a primary and secondary canal and ditch system. The primary canal system has significantly altered the hydrologic regime for the overall site by redirecting surface runoff. Please see Exhibit O for a map of BRP’s water resources.

## **2. Water Protection**

Water resource protection measures, at a minimum, will be accomplished through the implementation of Silviculture Best Management Practices (BMPs) as described in the current version of FDACS Silviculture Best Management Practices Manual. All pertinent ranch activities shall be conducted in accordance with all applicable BMPs and other appropriate measures, and will meet or exceed standards of all applicable BMPs for public conservation lands.

Management activities shall be conducted in a manner to minimize soil erosion and wetland degradation. In addition, if future soil and water resource problems arise, they shall immediately be assessed and the appropriate action will be proposed and implemented. The BRP manager shall cooperate with the SFWMD to monitor quantity and quality of groundwater and surface water resources.

Furthermore, water resource protection activities will be coordinated with the SFWMD and accomplished mostly by avoidance of impacts to on-site wetlands and surface waters (where possible), and the use of all applicable BMPs. Any new activities planned for BRP will be evaluated for impacts to wetlands, surface water features, and groundwater. Permit conditions shall be complied with to minimize adverse impacts to water resources. If adverse impacts occur, existing permits shall be modified or new permits acquired, to address the proposed activity.

Land managers shall protect ground water and surface water quality by identifying potential sources of surface water, ground water, soil contamination from existing ranch operations, and other future uses on BRP. Managers shall ensure compliance with all federal, state, and local laws involving storage, handling and disposal of chemicals. This includes pesticides, herbicides, petroleum products and equipment used to apply these chemicals.

FFS shall review and approve SFWMD activities associated with the BRP Water Storage Project which may occur on and adjacent to the southern and eastern BRP property boundaries in the area of the four county corners. The project will potentially mitigate large, uncontrolled discharges associated with high-rate releases from Lake Okeechobee and the surrounding basin area, from the BRP watershed to the Caloosahatchee River. The discharges can cause adverse impacts to the Caloosahatchee Estuary and adjacent landowners. Associated water storage project activities may include, but are not limited to: permit authorizations, ground disturbing activities associated with berm improvement, berm construction, modification of existing water control structures and construction of new water control structures. All implemented construction will be designed in accordance with applicable engineering standards for minor aboveground impoundment facilities. As mentioned in section IV.J, FFS will consult with the applicable entities regarding any ground disturbing activities onsite. Additional information regarding the water storage project can be found in Exhibit P.

FFS will work with the SFWMD to update information and management activities associated with the evaluation of current conditions of water resources, any outstanding use permits, and proper management of water resources. The 2008 FNAI assessment is a tool utilized by FFS regarding the condition of wetland communities. FFS will follow BMPs and coordinate with the SFWMD regarding the conditions of swamps, marshes and wetlands on BRP. Currently, the SFWMD monitors and manages all water use permits pertaining to BRP resources and the surrounding areas. All management of water resources on BRP will comply with all applicable BMPs, including, but not limited to: silvicultural, cow/calf, agricultural, equine operations, sod operations and state imperiled species.

**3. Hydrological Plan**

FFS will review the 2009 hydrological analysis prepared by Environmental and Consulting Technology, Inc. and determine whether its recommendations will be followed or revised to better suit the current needs of FFS management on BRP.

**4. Maintenance**

FFS, as applicable and necessary, maintain existing culverts, ditches, drains, swales, and other control structures on BRP.

Additionally, FFS, or its designated lessees or contractors, may excavate ponds in the Improved Pasture Area for the benefit of livestock and wildlife. Any future pond

excavations will be performed in accordance with applicable BMPs. Ponds will not be excavated in natural areas.

**D. Wildlife Resources**

**1. Threatened and Endangered Species**

The intent of the FFS is to manage BRP in a fashion that will minimize the potential for wildlife species to become imperiled. FFS employees will monitor BRP for rare, threatened and endangered species while conducting management activities.

The Florida Forest Service has developed a list of rare, threatened and endangered species that either occur, or have been observed, on the Babcock Ranch Preserve (Table 3). Data has been gathered from the FNAI Managed Area Tracking Record (Exhibit Q), from the Florida Natural Areas Inventory (2008) Final Report on Listed and Rare Plant (Exhibit R) and Animal (Exhibit S) Inventory of Babcock Ranch.

**Table 3: Rare, Threatened, Endangered or Species of Special Concern Documented on Babcock Ranch Preserve (FNAI 2008).**

Scientific name	Common name	Global rank	State rank	Federal status	State status
<b>Insects</b>					
<i>Bolbocerosoma hamatum</i>	Bicolored burrowing scarab beetle	G3G4	S3	N	N
<i>Eucanthus alutaceus</i>	Red mat globe scarab beetle	G2G3	S1S2	N	N
<i>Mycotrupes pedester</i>	Southwest Florida mycotrupes beetle	G1G2	S1S2	N	N
<b>Reptiles</b>					
<i>Crotalus adamanteus</i>	eastern diamondback rattlesnake	G4	S3	N	N
<i>Drymarchon couperi</i>	eastern indigo snake	G3	S3	LT	FT
<i>Gopherus polyphemus</i>	gopher tortoise	G3	S3	C	LT
<b>Birds</b>					
<i>Accipiter cooperii</i>	Cooper's hawk	G5	S3	N	N
<i>Amiophila aestivalis</i>	Bachman's sparrow	G3	S3	N	N
<i>Ajaia ajaja</i>	roseate spoonbill	G5	S2	N	LS
<i>Ammodramus henslowii</i>	Henslow's sparrow	G4	SNRN	N	N
<i>Aramus guaranauna</i>	limpkin	G5	S3	N	SSC
<i>Ardea alba</i>	great egret	G5	S4	N	N
<i>Athene cunicularia floridana</i>	Florida burrowing owl	G4T3	S3	N	SSC
<i>Buteo brachyurus</i>	short-tailed hawk	G4G5	S1	N	N
<i>Caracara cheriway</i>	crested caracara	G5	S2	LT	FT
<i>Egretta caerulea</i>	little blue heron	G5	S4	N	SSC
<i>Egretta thula</i>	snowy egret	G5	S3	N	SSC
<i>Egretta tricolor</i>	tricolored heron	G5	S4	N	SSC
<i>Elanoides forficatus</i>	swallow-tailed kite	G5	S2	N	N
<i>Eudocimus albus</i>	white ibis	G5	S4	N	SSC
<i>Falco columbarius</i>	merlin	G5	S2	N	N
<i>Grus canadensis pratensis</i>	Florida sandhill crane	G5T2T3	S2S3	N	LT
<i>Haliaeetus leucocephalus</i>	bald eagle	G5	S3	N	N
<i>Ixobrychus exilis</i>	least bittern	G5	S4	N	N



<i>Mycteria americana</i>	wood stork	G4	S2	LT	FT
<i>Nyctanassa violacea</i>	yellow-crowned night-heron	G5	S3	N	N
<i>Nycticorax nycticorax</i>	black-crowned night-heron	G5	S3	N	N
<i>Pandion haliaetus</i>	osprey	G5	S3S4	N	N
<i>Picoides borealis</i>	red-cockaded woodpecker	G3	S2	LE	FE
<i>Picoides villosus</i>	hairy woodpecker	G5	S3	N	N
<i>Plegadis falcinellus</i>	glossy ibis	G5	S3	N	N
<b>Mammals</b>					
<i>Eumops floridanus</i>	Florida bonneted bat	G1	S1	LE	FE
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	G5T3	S3	N	SSC
<b>Plants</b>					
<i>Bletia purpurea</i>	pinepink	G5?	S3	N	LT
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	LE
<i>Harrisella porrecta</i>	needleroot airplant orchid	GU	SNR	N	LT
<i>Lilium catesbaei</i>	pine lily	G4	S4	N	LT
<i>Matelea spp.</i>	spiny pod	G2/G5	S2/NR	N	E or T
<i>Myrcianthes fragrans</i>	twinberry	G4	S4	N	LT
<i>Ophioglossum palmatum</i>	hand fern	G4	S2	N	LE
<i>Pinguicula lutea</i>	yellow butterwort	G4G5	S3	N	LT
<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	LT
<i>Sacoila lanceolata</i>	leafless beaked orchid	G4	S3	N	LT
<i>Tillandsia balbisiana</i>	northern needleleaf	G5	S3	N	LT
<i>Tillandsia fasciculata</i>	cardinal airplant	G5	SNR	N	LE
<i>Tillandsia utriculata</i>	giant airplant	G5	S3	N	LE

**\* STATUS/RANK KEY**

- Federal Status (USFWS): LE= Listed Endangered, LT= Listed Threatened, N= Not currently listed, nor currently being considered for listing, C=Candidate for Listing.
- State Status (FWC): FE = Listed as Endangered Species at the Federal level by the USFWS, FT = Listed as Threatened Species at the Federal level by the USFWS, ST = State population listed as Threatened by the FFWCC, SSC = Listed as Species of Special Concern by the FFWCC, LE= Listed Endangered, LT=Llisted Threatened, N= Not currently listed, nor currently being considered for listing.
- FNAI Global Rank: G1= Critically Imperiled, G2 = Imperiled, G3= Very Rare, G4= Apparently Secure, G5= Demonstrably Secure; T# = Taxonomic Subgroup - numbers have same definition as G#'s, G#Q= Rank of questionable species - ranked as species but questionable whether it is species or subspecies (numbers have same definition as above - e.g., G2Q), GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.
- FNAI State Rank: S1= Critically Imperiled, S2= Imperiled, S3= Very Rare, S4= Apparently Secure, SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered.

Please see Exhibit T for FWC's response to FFS's request for listed species occurrence records and critical habitats on BRP. As can be seen on the appended maps, FWC data indicates that portions of the southern end of the BRP property in both Charlotte and Lee counties are a part of the secondary range-type for black bears in the vicinity. This secondary range extends to the south and southeast beyond the BRP property. Additionally, FWC data indicates that BRP is adjacent to and perhaps a part of multiple expanses of Strategic Habitat Conservation Areas. FWC data also shows that a portion of the North End Tract is adjacent to a Priority 1 Strategic Habitat Conservation Area. Furthermore, many portions of BRP are adjacent to multiple Priority 2 and 3 Strategic Habitat Conservation Areas.

BRP is documented as a site with varying levels of species richness. Areas on BRP that encompass the most diversity include the northern portion of the South End Tract, as well as multiple areas throughout the Jack's Branch Tract. Several listed species or evidence of their presence, have been documented on BRP and are within FWC's species location data for the site including, but not limited to: wading bird rookeries, panther locations, black bear telemetry data, and eagle nests. Additionally, Priority Wetlands exist on BRP, as shown in FWC's associated map, Exhibit T.

## **2. Game Species and Other Wildlife**

Wildlife management will play an important role in the management of resources on BRP. The BRP is considered a miscellaneous use area by FWC, as opposed to a traditional Wildlife Management Area or Wildlife Environmental Area. The FWC provides cooperative technical assistance in managing fish and wildlife populations, setting seasons, establishing bag and season limits, and enforcement of laws pertaining to fish and wildlife.

The FFS and FWC cooperatively maintain approximately 55 permanent wildlife openings and planted food plots on the BRP ranging in size from 0.75 to 11 acres. Wildlife openings and food plots will be established and maintained in accordance with the FFS State Forest Handbook. Game species on BRP may include, but not be limited to: white-tailed deer, Florida wild turkey, and northern bobwhite.

Non-game species will be managed through the restoration and maintenance of native ecosystems found on the BRP. The current State Forest Handbook gives additional details for related resource management such as snag management and retention.

## **3. Survey and Monitoring**

In 2007-2008, FNAI staff conducted a comprehensive inventory for rare, threatened and endangered animal species, performed during all seasons and within appropriate habitats. This inventory used information from a preliminary land cover map, published literature, the FNAI database, and staff expertise to develop a list of species that may occur on BRP. An initial reconnaissance of the survey area confirmed potential habitats, their condition, and thus the site's potential for rare species. A survey plan was then developed using the reconnaissance information, the preliminary land cover map, and the best season of survey for each animal species. Drift fence surveys, aerial surveys and Sherman's live trap small mammal surveys were all conducted to detect the presence of rare species. The complete results of the survey, along with management recommendations, can be found in the Listed and Rare Animal Inventory of Babcock Ranch Preserve Final Report (FNAI 2008, Exhibit S).

In the future, FFS will consult with FWC to update the 2008 baseline inventory list. FFS will additionally work with FNAI, FWC and other stakeholders to develop monitoring surveys for imperiled species.

Currently, there is a small breeding population of red-cockaded woodpeckers (RCW) (*Picoides borealis*) present on BRP, found primarily in and adjacent to the intact mesic flatwoods, wet prairie and dry prairie communities in the northeastern portion of the ranch. Since acquisition by the state, FWC has developed an interim RCW management plan (2008) and has been conducting limited monitoring on the population, which is less than ten miles from the Fred C. Babcock-Cecil M. Webb WMA RCW population also managed by FWC. During this ten-year planning period, FFS will work with FWC to develop, update and implement strategies and goals associated with the interim RCW management plan that maintain and improve habitat for the species, but are also consistent with ranch operations.

In addition to the 2007-2008 comprehensive inventory for rare animal species, FNAI staff also conducted a comprehensive inventory for rare plant species. This inventory used habitat information from a preliminary land cover map, the *County Distribution and Habitats of Rare and Endangered Species in Florida*, the state tracking list for Florida, predictive range maps, the FNAI database, and other online resources to generate a search list of potential rare plants for the BRP, their habitats, and the best survey periods. Once the potential species and habitats were identified, sites were surveyed systematically on foot during the appropriate survey period. Data was also collected opportunistically during natural community mapping activities. Although two federally endangered plants [beautiful pawpaw (*Deeringothamnus pulchellus*) and Carter's warea (*Warea carteri*)] were thought to potentially occur on the property, neither species was found during the course of the surveys. The complete results of this survey, along with management recommendations, can be found in the Listed and Rare Plant Inventory of Babcock Ranch Final Report (FNAI 2008, Exhibit R).

#### **E. Sustainable Forest Resources**

The FFS practices sustainable multiple-use forestry to meet the BRP resource needs and values of the present without compromising those needs and values in the future. Sustainable forestry involves practicing a land stewardship ethic that integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics. This is accomplished by maintaining and updating accurate estimates of standing timber in order to assure that the timber resources retain their sustainability. Inventories will be updated on a continual basis according to guidelines established by FFS's Forest Management Bureau.

#### **F. Beaches and Dune Resources**

No beaches or dunes occur on the BRP.

**G. Mineral Resources**

Mineral production in Charlotte and Lee Counties includes crushed stone and construction sand and gravel as well as crushed limestone rock. There is an active limestone rock and sand/shell aggregate mine (named Earthsource, Inc.) just south of the BRP entrance along SR 31.

**H. Unique Natural Features and Outstanding Native Landscapes**

Scenic resources on the BRP include an extensive example of a relatively large south Florida flatwoods ecosystem. This ecosystem comprises a pineland and wetland complex, including mesic flatwoods, wet flatwoods, dry prairie, wet prairie, basin marsh, cypress strands and dome swamps. As a mostly undeveloped rural ranch and natural landscape, BRP has significant scenic resources of interest to both visitors and residents of Florida.

Wetlands are numerous and varied on the BRP, including cypress domes and strands, depression and basin marshes and sloughs (Exhibit O). In total, these wetlands comprise 18.25% of the land cover on the property. The major wetland feature on the BRP is Telegraph Swamp and its associated Telegraph Creek, which flows through the swamp system. This wetland system is a major natural feature that roughly runs north to south through the western half of the BRP. This swamp system is fed by numerous cypress domes, freshwater marshes, and wet prairies. Water quality has been judged as excellent and the creek supports a healthy population of aquatic insects. A 1997 assessment of the Big Island Canal water quality and aquatic insect indicators was rated as good. See Section IV.C Water resources for more detailed information on water quality.

**I. Research Projects / Specimen Collection**

Research projects may be performed on BRP on a temporary or permanent basis for the purpose of obtaining information that furthers the knowledge of forestry, ranch management and related fields. The FFS cooperates with other governmental agencies, non-profit organizations, and educational institutions, whenever feasible, on this type of research. The FFS will consider assisting with research projects when funds and manpower are available.

All research projects to be considered on BRP must be considered in accordance with the guidelines stated in the most current version of the State Forest Handbook. Any requests for research projects should be submitted in writing to the appropriate field staff to be forwarded to the Forest Management Bureau for approval. Requests must include: a letter outlining the purpose, scope, methodology, and location of the proposed research project. Requests are subject to review by FFS Foresters, Biologists, the Forest Health Section, and the Forest Hydrology Section, as appropriate. Authorization to conduct research will require that the investigator provide copies of any reports or studies generated from research projects to the BRP staff. Other special conditions may be applicable and the authorization may be terminated at any point if the study is not in compliance.

#### **J. Ground Disturbing Activities**

Although the FFS's approach to handling ground disturbing activities is identified in various sections of this plan, the FFS's overall approach to this issue is summarized here. The FFS recognizes the importance of managing and protecting sensitive resources and will take steps to ensure that such resources are not adversely impacted by ground disturbing activities. This includes areas such as known archaeological, fossil, and historical sites, ecotones, wetlands, and those containing sensitive species.

When new pre-suppression firelines, recreational trails, or other low-impact recreational site enhancements are necessary, their placement will be reviewed by BRP field staff to avoid sensitive areas. Such activities may include but are not limited to construction of buildings, parking lots and new roads.

#### **V. Public Access and Recreation**

The FFS will develop and implement a Five-Year Outdoor Recreation Plan for the BRP. The primary recreation objective will be to provide the public with dispersed outdoor recreational activities that are dependent on the natural environment. The FFS will continue to promote and encourage public access and recreational use by the public while protecting natural resources, taking various user groups' needs into consideration and practicing multiple-use management.

The BRP annual public recreational carrying capacity will be determined in cooperation with FWC after FFS takes over management authority on BRP in August 2016. Once all approved and funded recreational opportunities that do not negatively impact the natural resources and ranch operations are established, an accurate figure will be determined. This will occur during the ten-year planning period beginning August 1, 2016.

Additionally and similarly, the BRP annual carrying capacity for Tier I hunting and Tier II hunting will be determined in cooperation with FWC after FFS takes over management authority on BRP in August 2016. A component of the overall recreational uses on BRP included both Tier I and Tier II hunting opportunities. Administered by FWC, Tier I hunting includes limited entry (quota hunt) opportunities for Archery, Muzzleloading Gun, Family Hunt, General Gun, Mobility-Impaired, Spring Turkey, and Small Game hunting seasons. Tier II hunting, organized by assigning hunting zones by permit, allows visitors to hunt BRP throughout the year consistent with statewide hunting regulations. The tiered hunting structure is designed to achieve the management plan public-use goal that is compatible with ranch operations, and conform to 259.1053(5)(c) FS. Tier I hunts, Tier II hunts and hunting allowed under Youth Hunting Program of Florida will continue.

Management of public access on BRP will be an adaptive process requiring time and patience in order to strike a balance between visitors' desired experiences and the ongoing ranch operations. New recreational opportunities and facilities, which are compatible with the primary goals and responsibilities of the FFS, will be considered only after compatibility with ranch operations, agricultural operations, and natural resources impacts have been

determined by FFS. Periodic evaluations will be conducted by FFS staff to monitor recreational impacts on ranch operations and natural resources. Should significant negative impacts be identified, modifications to recreational uses will be implemented.

Currently, the use of Off-Highway Vehicles (OHV) on BRP is allowed in authorized areas only, or for the purpose of management activities, emergency situations, for utilization during Operation Outdoor Freedom events and when necessary for compliance with the Americans with Disabilities Act.

**A. Existing**

Currently, BRP offers multiple recreational opportunities, including, hiking trails, ecotours, and hunting. There are two hiking trails: A trail (approximately 1 mile in length), leaving the Ecotours area on the North End Tract, just northwest of the Telegraph Swamp Recreation Area Tract; and the Footprints Trail (approximately 4.5 miles in length), located on the Bermont Crossing Recreation Area Tract leaving the Forestry Tower at State Road 74. See maps in Exhibit C for BRP Tract locations. Please see Exhibit U for a BRP Recreation Map.

**B. Planned**

New recreational opportunities and facilities, which are compatible with the primary goals and responsibilities of the FFS, will be considered only after the FFS determines their compatibility with a working ranch, agricultural operations and leasing possibilities. Such development will involve stakeholders and other agencies, a review of the Pandion Management Plan (2008) and the Genesis Recreation Plan (2009), and will take into account lease-holdings and other operations and management needs on the property.

BRP may offer additional recreational opportunities in the future. These may include, but are not limited to, wildlife viewing, hiking, bicycling, horseback riding, camping, self-guided nature study, and other recreational uses compatible with ranch operations.

The hiking trails will be evaluated for inclusion in the FFS's Trailwalker Hiking Program. Any future equestrian trails on BRP will be evaluated for inclusion in the FFS's Trailtrotter Program. Any horseback riding trail or multiple use trail development that may occur in the Tier I hunt area may be placed over existing trails, firebreaks and tertiary roads. The FFS may consider potential recreational trail connectivity during planning stages. Additionally, BRP may be considered for inclusion into the Florida National Scenic Trail and the Great Florida Birding Trail Plans.

The FFS will seek to expand recreational opportunities in the northeast corner of the BRP within the Jack's Branch Recreation Tract. This area currently has limited recreation and offers the most potential for expanding recreational opportunities while preserving the ranch operations. Additionally, FFS may consider allowing general public access for recreational purposes, OOF and disabled veteran events, and youth-oriented outdoor activity events on both the southwestern portion of the North End Tract where Tier II hunt permits are not granted, and the Telegraph Swamp Recreation Area Tract. Further

expansion for public recreational opportunities will be determined and outlined in the FFS Recreation Plan. In the FWC Tier I Hunt Area, camping may be offered by BRP Use Permit.

The current Tier II hunt areas throughout the North End Tract, South End Tract and Lee County Tract include the opportunity for Tier II permittees to camp as well. Tier II areas currently have associated hunt camps, which may be exclusively occupied by permittees during hunting season. The FFS permits all designated non-hunting related recreation all year long, but will coordinate with FWC to minimize user conflicts during hunting season.

Additionally, permits may be offered for special or group recreational activities, and can be obtained from the FFS BRP Headquarter's Office.

The BRP may also provide recreational hunting opportunities to disabled veterans through the Florida Forest Service's OOF Program. OOF events may be hosted on the southwestern portion of the North End Tract where Tier II hunt permits are not granted, as well as the Telegraph Swamp Recreation Area Tract. These hunts will be coordinated with FWC. The OOF hunts provide veterans with unique, specialized opportunities for recreation, rehabilitation and socialization. These events may involve many aspects of outdoor recreation activities including, but not limited to: hunting, hiking, fishing, horseback riding, recreational shooting sports and other activities developed for disabled veterans. The supporting participants may include volunteers and any support personnel necessary for the operation, support or funding of such events. Events can be for recreational, fundraising or planning purposes. The OOF program needs may include the upgrading of existing facilities or constructing new facilities for lodging and recreation of participants, and logistical and operational needs of the program. On-site fundraising for the benefit of OOF may occur to assist in these efforts and will be performed under the coordination of, and consistent with the guidelines of the Friends of Florida State Forests.

FFS may develop a comprehensive greenway system for use by the public, which may be connected to a greenway system planned for the Retained Property. The potential greenway system may also be connected to Caloosahatchee Regional Park to provide access to the Caloosahatchee River by the public.

### **C. Hunting**

The Florida Fish and Wildlife Conservation Commission, in cooperation with the Department of Agriculture and Consumer Services, Florida Forest Service, shall:

1. Establish and implement public hunting and other fish and wildlife management activities. Tier I and Tier II public hunting opportunities shall be provided consistent with the management plan and the recreation master plan. Tier I public hunting shall provide hunting opportunities similar to those offered on wildlife management areas with an emphasis on youth and family-oriented hunts. Additional youth hunting opportunities may be provided through FWC's Youth Hunting Program of Florida, in

coordination with FFS. Tier II public hunting shall be provided specifically by fee-based permitting and coordinated between FFS and FWC to ensure compatibility with livestock grazing and other essential agricultural operations on the Preserve.

2. Establish and administer permit fees for Tier II public hunting to capitalize on the value of hunting on portions of the preserve and to help ensure BRP is financially self-sufficient. The fees shall be deposited into the State Game Trust Fund of the Florida Fish and Wildlife Conservation Commission and used to offset the costs to provide public hunting opportunities, to support fish and wildlife management and other land management activities on BRP, pursuant to paragraph 259.1053(5)(c) FS.
3. FWC will be responsible for managing and regulating all aspects of the Tier I and II hunting and the hunt-camp areas, including but not limited to the hunt-camp facilities, grounds and perimeters.

Any and all references to hunting will be superseded by FWC guidelines and Florida Statutes governing FWC practices on state-owned lands. All entities will abide by Section 259.1053, F.S., and state and federal guidelines regarding fish and wildlife management.

Hunting on the Lee County portion of BRP is pursuant to the Hunt Memorandum of Agreement (MOA) between FWC and Lee County, Exhibit AG.

#### **D. Education**

FFS may create partnerships with local K-12 schools and/or universities for the purpose of the development and implementation of educational opportunities on BRP. Once developed, the Five-Year Recreation Plan may lend more insight to management activities as they pertain to future educational opportunities BRP may provide to the public.

### **VI. Forest Management Practices**

#### **A. Prescribed Fire**

Forest management practices on BRP are important to the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians.

Management practices on BRP include a prescribed fire program that is a highly effective tool in wildfire mitigation, controlling the growth of hardwood trees, stimulating the recovery of native herbaceous and grassy ground cover, and promoting the regeneration of native pines.

The annual forest prescribed burning program produces multiple benefits. The purposes of prescribed burning on BRP are to facilitate forest and ranch management operations and enhance wildlife and listed species habitat, to decrease fuel loading, consequently enhancing public safety, and to restore, maintain, and improve the health of native ecosystems, ecotones, and their ecological processes. FFS personnel are responsible for planning and implementing the annual prescribed burn program for BRP, which will consist of growing and dormant season burns. Burns are planned by the BRP staff with



input from cooperating agencies as appropriate. A BRP annual Prescribed Burn Plan is developed each year, which identifies the individual burn unit prescriptions, whether the unit is on a growing or dormant season rotation, map of burn unit, and other information specific to that burn unit. The smoke screening system will be used as a smoke management tool to minimize the adverse impact of smoke that may affect residential communities, public roads, schools, and other smoke sensitive areas.

Historic, fire dependent natural communities on BRP are estimated to have occupied approximately 64,677 acres, and to have burned at approximately 2-10 year intervals, depending on the community. Past land uses have left some of these historically fire dependent communities in a condition unable to carry prescribed fire. Based on current conditions and management objectives, BRP will plan for 12,000 to 24,000 acres to be prescribed burned annually at approximately 2-4 year intervals. Restoration of these areas by removal of the off-site species and reforestation will increase prescribed burn acreage goals over time. Meeting prescribed fire goals will be largely dependent on weather conditions, personnel, and statewide emergency situations such as wildfires, hurricanes and other natural disaster response and relief.

The southern portion of the state has an extended growing season for pines and other vegetation. There is also an extended wet season that could limit the frequency of prescribed burns. Therefore, the objective is to encourage year-round prescribed burning whenever possible, with the understanding that much of the prescribed fire will be applied, but not limited to, the dormant season. This will meet several resource objectives including management of cattle forage on BRP.

Fires caused by lightning at the end of the dry season and through the rainy season (growing season) represent the natural fire regime in southern Florida. It is believed that native range present at BRP has been subjected to this type of fire for many centuries. Numerous groundcover species found in flatwoods and dry prairie communities are adapted to and dependent upon growing season fires. However, Florida ranchers have typically burned native range in winter or early spring. Prescribed fires conducted in late spring or summer will, over time, aid to decrease coverage of saw palmetto, which in turn will increase space for herbaceous plants to grow. Inclusion of periodic spring and summer prescribed burns in the typical burn regime will likely benefit native plant communities, as well as cattle grazing and wildlife.

Control of wildfires and the proper application of prescribed fire in the Wildland-Urban Interface will become important for FFS to address. Current and future encroachment by residential development in close proximity to BRP will continue to present significant smoke and fire management challenges.

#### **1. Fire Management**

FFS will develop a fire management plan that will serve as a working tool and an informational document for BRP. The plan will provide guidelines in regard to wildfire suppression and prescribed fire management. It will specify burn units,

burn unit prescriptions, appropriate fire return intervals, and fire suppression planning. FFS will coordinate with FWC on developing the fire management plan. The plan may be reviewed and amended as necessary.

The use of prescribed fire in the management of timber, wildlife, and ecological resources on BRP is necessary if the FFS is to fulfill the goals and objectives stated in this plan including: enhancing and restoring native plant communities, managing protected species, producing grazing forage, managing timber, recreation, historical, and other resource values. The fire management plan and its objectives shall reflect and incorporate these multiple-resource objectives.

- a. **Prescribed Fire:** Prescribed fire is the most important land management tool, both ecologically and economically, for managing vegetation and natural communities and perpetuating existing wildlife populations in Florida. Ranch operation records and ranch staff experience should be combined with the FNAI inventory and assessment (2008) to identify areas of excessive saw palmetto or shrub cover that may require mechanical treatments in conjunction with prescribed fire to restore a more natural vegetative structure.
- b. **Burn Unit Plans:** Each prescribed fire will be conducted in accordance with FFS regulations and state law (Rule Chapter 5I-2 F.A.C., Chapter 590 F.S.) and have a burn unit plan (or prescription). Each prescription will contain, at a minimum, the information, as required by Section 590.125(3), F.S., needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

BRP Prescribed Burn Plans should be augmented with the FNAI inventory and assessment (2008) to develop prescriptions for burn units, fire return intervals, and fire suppression planning. Aerial ignition may be considered for large burn units where this tactic can be cost effective. Consideration should be given to shifting the season of burn to the growing season (April-September) for appropriate burn units. Fire return intervals for a burn unit are recommended to fall within the natural, historic range for the dominant natural community or communities within a given burn unit.

Based upon available species survey data, burn units within a prescription that have listed wildlife species shall explicitly state their presence and any restrictions or requirements relative to prescribed burning in proximity to these species or habitats. These may include time of year, pre-burn preparation, fire return intervals, and other burn parameters.

#### **B. Wildfires, Prevention, Fire / Prescribed Fire Strategies**

The FFS utilizes a comprehensive wildfire management approach on state forests that includes an ongoing program of wildfire prevention, detection and suppression, and aggressive prescribed burning. Implementation of this program is the responsibility of the FFS's District Office. Emphasis will be placed on consistently accomplishing the

prescribed burning goals and community outreach to increase public understanding of wildfire prevention and the benefits of prescribed fire.

The FFS has three paramount considerations regarding wildfires, and these are listed in priority order:

- 1) Protection of human lives, both that of the firefighter and the public
- 2) Protection of improvements
- 3) Protection of natural resources

All procedures regarding wildfire will follow the State Forest Handbook and the BRP Fire Management Plan.

### **1. Suppression Strategies**

If a wildfire occurs on BRP there are two alternative suppression strategies as defined below:

- a. **Contain** is defined as a suppression strategy where a fire is restricted to a specific pre-determined area by using natural or constructed barriers that stop the fire's spread under the prevailing and forecasted weather and fire behavior until dead out. This strategy allows the use of environmentally sensitive tactics while monitoring for smoke and fuel conditions that would warrant more aggressive control tactics, described below.
- b. **Control** is defined as a suppression strategy where aggressive suppression tactics are used to establish firelines around a fire to halt its spread and to extinguish all hotspots. This alternative is used whenever there is a threat to human life, property, private lands, and/or critical natural or cultural resources. This strategy should also be used when the total field unit fire load dictates that crews not be involved with individual fires for any longer than absolutely necessary.

Appropriate suppression action will be that which takes into account the three paramount considerations listed above, provides for the most reasonable probability of minimizing fire suppression cost and critical resource damage by taking into consideration probable fire behavior, total fire load, potential resource and environmental impacts, and smoke management issues. The Incident Command System (ICS) will be used for all suppression actions.

### **2. Smoke Management**

Caution will be exercised to prevent a public safety or health hazard from the smoke of any prescribed burn or wildfire. Prescribed burns must pass the smoke screening procedure. If smoke threatens to cause a safety hazard, then direct immediate suppression action will be taken.

Complaints about smoke by residents of suburban and rural housing areas represent a significant threat to the use of prescribed fire by conservation land managers, ranchers, and foresters. The Babcock Residential Community (BRC), as well as any other housing areas near BRP, will be affected by smoke from prescribed burns on the preserve. Without prescribed fire, land managers are denied their most important

tool to manage natural communities and grazing lands in an ecologically sustainable way.

The use of Smoke Management Guidelines can help BRP continue using fire as a land management tool on lands adjacent to residential and commercial areas. Guidelines also include informing and educating the public about the use of fire.

As development in Florida continues to move into areas adjacent to natural areas (the Wildland-Urban Interface (WUI)), concerns arise about protecting homes and property from wildfire. Communities across Florida are being asked to consider adopting policy statements and/or covenants to address smoke management and vegetation management. Communities adjacent to the BRP should be planned with both prescribed fire and wildfire in mind, given the natural role of fire in Florida's ecosystems. This will help BRP to continue to be maintained with fire, which provides indispensable ecological and grazing benefits as well as critical wildfire protection to residents in the WUI.

### **3. Fire Breaks and Firelines**

A system of permanent pre-suppression firelines will be developed and maintained on the BRP for prescribed burning and wildfire suppression. Such firelines will consist of natural barriers, roads, trails, permanent grass strips and where appropriate, well-maintained harrowed lines. All firelines will meet the established Silvicultural BMP criteria.

During wildfire suppression, the use of water and foam, permanent fire breaks, natural barriers and existing roads and trails for firelines can be used when human life safety, property, and resource considerations allow. Plowed and/or bulldozed lines will be used for initial installation of firelines in heavy fuels and in cases where it's considered necessary to protect life, property, or resources and/or to minimize threats to fire-fighters. Plow and bulldozed lines will be rehabilitated and BMPs implemented as soon as practical after the fire is suppressed.

Utilize the map products (e.g., Landmark Systems 2008) illustrating existing firelines and breaks to delineate burn blocks, when feasible, and minimize the need to establish new ones. Utilize these map products to assess the current need and condition for these lines and breaks. Wildfire suppression lines are not recommended to be established in wetlands, ecotones, or other sensitive areas. If placement of such lines in wetlands, ecotones, or other sensitive areas is unavoidable, rehabilitation of those lines shall be considered. New proposed prescribed fire control lines will be assessed prior to installation so as to avoid wetlands, ecotones, or other sensitive areas and to avoid possible impediments to the natural hydrology. All construction and maintenance of firelines shall be in accordance with the applicable BMPs.

### **4. Sensitive Areas**

There are no documented archaeological or historical sites on BRP and DHR indicated that there is a low potential for archaeological resources to occur on this site. If archaeological or historical resources are confirmed within the preserve, care should be to avoid impact to these sites during wildfire suppression or prescribed burning activities (see Section III Archaeological / Cultural Resources and Protection for more detailed information).

All burn crews at BRP will have access to updated maps depicting environmentally sensitive areas such as endangered species locations, wetlands, and historical and archaeological resources. Special precautions will be followed when prescribed burning in sensitive areas on BRP. When possible, fire staff will avoid line construction in wetland ecotones throughout the forest. Prior to native ground disturbing activities, excluding clearing of existing firelines and chopping, DHR will be consulted. Please see Exhibit AF to view the applicable “DOS/DHR Guidelines for Ground Disturbing Activities”.

#### **5. Fire Adapted Communities**

Communities in wildfire prone areas must work together to be fully prepared for wildfire. A “Fire Adapted Community” incorporates people, buildings, businesses, infrastructure, cultural resources, and natural areas to prepare for the effects of wildfire. The Fire Adapted Community concept serves as an umbrella to the various programs that help communities become more fire adapted. The FFS has implemented the Fire Adapted Community concept for prevention statewide. Specifically, in the area adjacent to or nearby BRP, efforts have included identifying Communities at Risk through the web-based SouthWRAP (Southern Area Wildfire Risk Assessment Portal) and working with communities to become Firewise.

#### **6. Adjacent Neighbor Contacts**

The staff at BRP maintains a list of neighbors that have requested they be notified in advance of prescribed burns. These families are contacted by telephone or email with potential sites and dates of anticipated prescribed burns.

#### **7. Post-Burn Evaluations**

A post-burn evaluation is required for each wildfire and prescribed burn on BRP to assess impacts on timber and habitat. Based on the evaluations, decisions will be made on timber salvage operations. An historical fire record for all fires and prescribed burns will be maintained. This will be accomplished by maintaining the burn plans in the Ranch Manager’s files, and through maintenance of GIS data; these records are intended to provide data for future management decisions. The procedures for conducting post burn evaluations are outlined in the State Forest Handbook.

### **C. Sustainable Forestry & Silviculture**

Timber is a valuable economic and ecological resource, and as such, timber harvesting for the purposes of generating revenue, improving stand viability, forest health, and ecological restoration and maintenance is critical to the silvicultural objectives on BRP.

**1. Strategies**

The following silvicultural strategies will apply to silvicultural practices on BRP:

- a. To restore and maintain forest health and vigor through timber harvesting, prescribed burning, and reforestation, both naturally and artificially, with species native to the site.
- b. To create, through natural regeneration, uneven-aged, and even-aged management, a forest with both young and old growth components that yields sustainable economic, ecological, and social benefits.

**2. Silvicultural Operations**

Silvicultural operations on BRP will be directed toward improving timber management opportunities, forest health, wildlife habitat, ecological and economical sustainability. Stands of off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with the appropriate tree species. Herbicide applications may be necessary to control woody competition and to re-establish desired natural species of both overstory and ground cover. Site preparation methods may include prescribed fire, mechanical vegetation control, and herbicide applications.

Prescribed fire is the most desirable method of vegetation control in fire dependent ecosystems. However, due to the existence of areas where fuel loads have reached dangerous levels or urban interface dictates prescribed fire is not suitable, mechanical or chemical vegetation control may be used. Mechanical and/or chemical vegetation control will be utilized where appropriate as determined by FFS staff for wildlife enhancement, fuel mitigation and reforestation.

Maintenance and restoration of timber stands and natural communities through timber harvesting will include thinning for maintenance, regeneration harvests applicable to the species present, and clear-cutting to remove off-site species and other applicable purposes.

All silvicultural activities, including timber harvesting and reforestation, will meet or exceed the standards in the FFS's Silviculture BMPs and the State Forest Handbook and will follow the Five-Year Silviculture Management Plan.

**3. Forest Inventory**

The purpose of a forest inventory is to provide FFS resource managers with information and tools for short and long range resource management and planning. Ten percent of BRP forest will be re-inventoried annually to provide an accurate estimation of the standing timber and to ensure that stands will be managed sustainably.

Additional timber/forestry resources available on the property may include but are not limited to pine straw, crooked wood, biomass, and other forest resources. At this time, none of these are taking place, but may be considered in the future. See Section II.B.4, Revenue Producing Activities.

#### 4. **Timber and Other Forest Product Sales**

Timber sales are generally advertised for competitive bids and sold on a per unit or lump sum basis. All timber sales are conducted according to guidelines specified in the State Forest Handbook, unless otherwise determined by FFS. Other forest product sales and leases may be considered and will be advertised in the same general manner. Other forest products offered for sale or lease may include cabbage palm harvests, palm frond and palmetto fan harvests, pine straw raking or palmetto drupe picking.

In the case of wildfire, insect, disease, or other catastrophic events, salvage sales may be conducted to harvest dead or dying timber. These sales will typically be per unit sales and advertised for competitive bids as well. The FFS will consult the State Forest Handbook for salvage sale guidance. When conducting salvage cuts, a minimum of 6 snags per acre will be retained where feasible. When possible, the remnant snags shall be greater than 8 inches diameter at breast height (dbh).

All timber related activities and other forest product sales or leases on BRP will comply with the most recent version of the Silviculture BMPs.

All timber and other forest product sales on the Lee County Tract of BRP will be performed according to the provisions set forth in the Agreement between Lee County and State of Florida Department of Agriculture and Consumer Services, Florida Forest Service, dated XXXXXXXX, (see Exhibit AC), including, but not limited to, the following stipulations:

- FFS shall act as lead management entity for the Lee County portion of BRP;
- Timber harvesting will be limited to salvage operations or those activities necessary for forest health improvement;
- FFS may enter into agreements with third parties to implement the Ten-Year Land Management Plan or to subcontract day-to-day management responsibilities to private consultants or contractors, or governmental organizations and agencies consistent with the Ten-Year Land Management Plan;
- The FFS shall retain all revenue generated from the Lee County portion of BRP;

#### D. **Non-Native Invasive Species Control**

FFS employees continually monitor the forest for non-native invasive species while conducting management activities. These occurrences are recorded in the GIS database and updated as new plants are discovered (see Exhibit V). FFS will locate, identify, and apply control measures with the intent to eradicate or control non-native invasive species.

**Comment [d4]:** Cat will insert info once Lee county signs off

**Comment [d5]:** Re: everything between the 2 blue portions; this is in and stays depending on whether or not Lee County signs management agreement; if Lee County changes stuff in agreement, then some of this verbiage may need to be amended. (Karels indicated in his review of plan that verbiage is fine as is...)

When these species are discovered, an eradication or management plan will be developed with the assistance of the Forest Management Bureau's Forest Health Section as needed. The plan will be implemented based upon the severity of the infestation and the availability of personnel and funding. Adjacent landowners who are known to have these species on their property will be approached in an effort to cooperate on control measures.

FFS works to control the spread of non-native invasive species by decontaminating agency equipment and equipment used by private contractors according to the State Forest Handbook. Guidelines are already in place for private contractors doing work on the state forests, allowing language to be inserted in contracts to accommodate for cleaning of equipment prior to ingress, and other protocols as appropriate, to prevent the introduction and spread of invasive plants.

BRP has a moderately dense population of non-native invasive feral hogs (*Sus scrofa*). Feral hogs cause negative impacts on agricultural operations, as well as native plant and animal populations. A variety of management techniques may be necessary to maintain this population at reduced densities that minimize impacts to natural resources. The FFS will enlist support from the FWC in the effort to control these and other non-native invasive animals. FWC has issued a feral hog control trapping permit to FFS for all FFS lands and the FFS will encourage hog removal on BRP through trapping and hunting.

Training in the identification and control of invasive species will be scheduled for personnel as time and resources permit. Training concerning non-native invasive plants will be coordinated with the Forest Management Bureau's Forest Health Section. Control of non-native invasive species will be target specific and use a variety of methods including appropriately labeled and efficacious herbicides.

Melaleuca (*Melaleuca quinquenervia*) has been documented on BRP and periodic efforts at chemical control have been undertaken since the early 1990s. Brazilian pepper (*Schinus terebinthifolius*), while not prevalent in natural areas, is common in the farm ditches and other disturbed areas. Old world climbing fern (*Lygodium microphyllum*) is prevalent throughout Telegraph Creek Swamp. Several hundreds of thousands of dollars has been spent in recent years in an effort to control old world climbing fern with limited results. Many other non-native invasive species can be found on BRP, including but not limited to: torpedo grass (*Panicum repens*), cogongrass (*Imperata cylindrical*), tropical soda apple (*solanum viarum*), Caesar's weed (*Urena lobata*), Peruvian primrose willow (*Ludwigia peruviana*) and natal grass (*Rhynchelytrum repens*).

Currently, much of the non-native invasive plant control efforts, such as with cogongrass, on BRP are conducted through FWC's invasive plant management section. These efforts are coordinated with other management activities to achieve optimum control. Prior to conducting a prescribed burn in a given unit, for example, melaleuca trees are cut and the stumps are treated with herbicide. By doing so, seeds are concentrated in the immediate area of the stumps and seedlings are then easier to locate for follow-up treatments. With



only old world climbing fern as the exception, non-native invasive plants on the BRP are under control, but will require vigilance and continued treatment efforts.

A monitoring program is in place whereby known populations of non-native, invasive species, treatment strategies, observation dates, and GPS locations are recorded and tracked using a GIS database. When new populations of non-native, invasive species are discovered they are recorded in the database and mapped.

The 2008 FNAI Non-Native Invasive Inventory of Babcock Ranch is attached as Exhibit V. In the future, FFS, and any applicable lessees, will work with FNAI to update the inventory and location of all non-native, invasive species on BRP.

**E. Insects, Disease and Forest Health**

Currently, there are no known insect or disease problems on BRP. In the event of any outbreak or infestation, consultation with the Forest Management Bureau's Forest Health Section will occur to formulate an appropriate and effective response.

In compliance with Section 388.4111, Florida Statutes and in Rule 5E-13.042, F.A.C., all lands have been evaluated and subsequently designated as environmentally sensitive and biologically highly productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from arthropod control practices that would impose a potential hazard to fish, wildlife and other natural resources existing on this property. The local arthropod control agencies in Charlotte and Lee Counties will be notified of the approval of this plan documenting this designation.

As a result, prior to conducting any arthropod control activities on BRP, the local agencies must each prepare a public lands control plan that addresses all concerns that FFS may have for protecting the natural resources and ecosystem values on the state forest. In this regard, FFS will provide the local agencies details on the management objectives for BRP. These public lands control plans must be in compliance with FDACS guidelines and use the appropriate FDACS form. The plans must then be approved and mutually adopted by the applicable county, FFS, and FDACS prior to initiation of any arthropod control work. Should a local mosquito control district not propose any arthropod control operations on the property, no arthropod control plan is required. See Exhibit W.

**F. Use of Private Contractors**

The ranch manager will make ongoing evaluations of the use of private contractors and consultants to facilitate the total resource management activities of this property. The opportunities for outsourcing land management work may include, but not be limited to:

1. Herbicide application
2. Timber stand improvement activities
3. Tree planting and site preparation
4. FNAI for surveying

5. Timber harvests
6. Bahia planting
7. Seed harvesting
8. Sod harvesting
9. Hay production
10. Palmetto harvesting
11. Row cropping
12. Cattle management

**VII. Proposed Management Activities for Current Natural Community Cover Types**

In 2008, the Florida Natural Areas Inventory completed an inventory and natural community mapping project on 73,559 acres (acreage mapped included the conservation easement that connects the Curry Lake Tract to the larger contiguous piece of BRP) of the BRP and, as a result, produced data relating to historic natural communities (Exhibit X) and a current (2008) natural community map (Exhibit Y). The results of this survey are summarized in Table 4. For the purposes of this management plan, restoration is defined as the process of returning ecosystems or communities to the appropriate structure, function and species composition, based on soil type. Management during this ten-year period will begin with a forest wide assessment of the fuel loading, timber densities, reforestation needs and groundcover in order to develop a five-year comprehensive operational plan for prescribed burning across the property. Strategies may include thinning of overly dense pine stands, mowing or chopping in areas of heavy fuel buildup and/or application of cool dormant season fires. The results of these initial efforts will be monitored and more refined and detailed restoration plans will then be made. Fire return intervals are included as a guide and may vary depending upon specific conditions. The intention is to use fire in a manner and frequency that will attain the desired goals and objectives for each natural community.

For the purposes of this plan, FFS utilized the 2008 FNAI natural community delineation information, specifically the Natural Community Descriptions (Exhibit Z) and the Babcock Ranch Natural Community Mapping Project (Exhibit AA), for management and planning purposes.

**Table 4: Natural Communities Found on BRP**

<b>Vegetation Type</b>	<b>Acres Mapped (Historic)</b>	<b>Acres Mapped (Current)</b>	<b>Acres Mapped (Current Pine Plantation)</b>	<b>Historical Burn Interval (Years)</b>
Mesic Flatwoods	39,807	31,206	502	2 - 4
Strand Swamp	7,567	7,566	--	Varies
Wet Flatwoods	5,934	6,477	--	2 - 5
Wet Prairie	4,571	2,810	--	2 - 3
Dry Prairie	8,929	2,491	--	1 - 2

Vegetation Type	Acres Mapped (Historic)	Acres Mapped (Current)	Acres Mapped (Current Pine Plantation)	Historical Burn Interval (Years)
Depression Marsh	2,150	2,078	--	1 - 5
Basin Marsh	1,880	1,845	--	1 - 10
Dome Swamp	1,203	1,201	--	3 - 150
Slough	680	682	--	N/A
Hydric Hammock	425	464	--	N/A
Mesic Hammock	212	257	--	N/A
Scrubby Flatwoods	122	113	--	8 - 15
Scrub	81	69	--	5 - 20

**Table 5: Altered Landcover Types Found on BRP**

Altered Landcover Type*	Current Acres Mapped
Pasture Improved	10,143
Pasture – Semi-Improved	1,169
Abandoned Field / Abandoned Pasture	638
Agriculture	2,885
Canal / Ditch	56
Clearcut Pine Plantation	2
Clearing / Regeneration	447
Developed	104
Invasive Monoculture	321
Impoundment	29
Spoil Area	3

\* Protocol as described in Exhibit 2 of FNAI’s “Guide to the Natural Communities of Florida”, 2010 Edition.

The following community descriptions, existing condition descriptions, and management recommendations are taken from this FNAI mapping project report and the Guide to the Natural Communities of Florida (FNAI 2010), as well as from the knowledge and experience gained by FFS during forest inventory efforts and routine field work on BRP (FNAI 2008). To achieve the objectives in this plan, management activities for each natural community described below will be performed during the next ten-year planning period as necessary.

Goals, desired conditions, standards and guidelines provide management area direction. These goals and desired conditions may take many planning cycles to attain.

#### **A. Mesic Flatwoods**

##### **Description:**

Mesic flatwoods are pine forests, varying from moderately dense to open, with a diverse understory of shrubs and herbs occurring in acid sands on generally flat terrain. Mesic flatwoods are the dominant upland natural community on Babcock Ranch Preserve, occupying roughly 31,708 acres. Pine plantations are uncommon on BRP, and range from fewer than ten acres to more than 240 contiguous acres in size, totaling 502 acres across the property. For the purposes of this plan, pine plantation acreage is considered within this community, as they occur in areas that were historically mesic flatwoods and will be managed as such. Saw palmetto (*Serenoa repens*) and wiregrass (*Aristida stricta*) are the characteristic shrub and herb species. In addition to these dominant species, there is often a high diversity of shrubs, particularly herbs. Frequent fire is an important factor in maintaining vegetation structure and high diversity in mesic flatwoods. Fires naturally occurred every two to four years during the late spring/early summer lightning season. Mesic flatwoods that have not burned regularly tend to have dense tall shrub layers and sparse to absent herbaceous vegetation.

##### **Current Conditions:**

The primary canopy species in mesic flatwoods on Babcock Ranch Preserve is south Florida slash pine (*Pinus elliottii* var. *densa*) except in the northeast corner of the property where longleaf pine (*Pinus palustris*) dominates. The pines, oaks (*Quercus* spp.), and cabbage palm (*Sabal palmetto*) are typical subcanopy species. Shrubs and herbs are typically co-dominant in the understory, although wetter areas favor greater shrub development, and denser canopy trees. Most shrubs are under six feet tall; common species include saw palmetto, wax myrtle (*Myrica cerifera*), dwarf live oak (*Quercus minima*), coastalplain staggerbush (*Lyonia fruticosa*), and netted pawpaw (*Asimina reticulata*). Frequent among herbs are wiregrass, lopsided indiangrass (*Sorghastrum secundum*), chaffheads (*Carphephorus* spp.), bluestems (*Andropogon* spp.), tickseeds (*Coreopsis* spp.), and yellow-eyed grasses (*Xyris* spp.).

Large areas of the historic mesic flatwoods on Babcock Ranch Preserve have been converted to agricultural fields and pastures. Boundaries between these areas and mesic flatwoods often have infestations of non-native invasive species, especially melaleuca (*Melaleuca quinquenervia*), Brazilian pepper (*Schinus terebinthifolius*), Caesar weed (*Urena lobata*), cogongrass (*Imperata cylindrica*), and old world climbing fern (*Lygodium microphyllum*). Other disturbances in mesic flatwoods on the property include soil disturbance by feral hogs, which can contribute to the spread of weedy and non-native species, wildlife food plots, OHV trails, firebreaks, ditches and canals. Lack of fire in a few areas has resulted in heavy woody encroachment. Relatively recent timber harvests and subsequent stump removal have resulted in soil disturbances that have reduced the cover of wiregrass and other native non-weedy species. This may allow for the establishment of weedy and non-native invasive plants and potentially hinder the spread of fire during prescribed burns.

**Management Needs:**

The primary management tool for BRP mesic flatwoods is prescribed fire. Prescribed fire will continue on a three-year fuel reduction burn cycle in previously burned stands. Stands out of the 2 to 4 year recommended burn cycle will be added into the annual burn plan each year to increase the amount of acreage in burn frequency. Before initiating prescribed burning, some areas may need additional fuel treatments, such as chemical applications, chopping or mowing of the palmetto/gallberry understory to reduce fuel loads. Burning intervals may be interrupted to allow for the establishment of natural regeneration after a seed catch. All operations will be conducted in a manner that minimizes impacts to the residual stands with little or no ground-disturbing impacts.

Even-aged slash and longleaf stands will be prioritized for thinning. Burning in these stands will continue (one-year pre-thin or post-thin) to reduce fuel loads and enable transition to more seasonal burning. Mechanical treatment of fuels may be needed. Timber management on the mesic flatwoods of BRP will continue to focus primarily on creating uneven-aged stands of longleaf pine and even aged management of south Florida slash pine. Stands of longleaf pine will be thinned to the appropriate basal area. Natural regeneration is the preferred method of regeneration. However, in larger openings where tree planting is necessary, longleaf seedlings will be planted at densities of approximately 726 trees per acre. Site preparation may include prescribed fire, chopping and/or herbicide applications.

Restoration of mesic flatwoods communities on BRP will focus on identifying, mapping and treating non-native invasive plant species. All known locations of invasive plant species will be re-visited and treated as necessary, ensuring that all updates to records provided by FNAI (2008) are made current. Restoration activities will also focus on addressing impacts to hydrology where feasible and practical.

**B. Strand Swamp****Description:**

Strand swamps are shallow, forested, usually elongated depressions or channels situated in a trough within a flat limestone plain, and dominated primarily by bald cypress (*Taxodium distichum*); though smaller strand swamps and shallow edges may instead contain pond cypress (*T. ascendens*). Small, young cypress trees at the outer edge of strand swamps grade into large old ones in the deeper interior, giving a strand a distinctly rounded cross-sectional profile. The variable woody understory contains a mixture of temperate and tropical elements, while herbaceous ferns, grasses and vines are also present. The warm, humid climate creates ideal habitat for epiphytic orchids and bromeliads throughout the swamp, though greater species diversity is generally found along the deeper sloughs. The normal hydroperiod ranges from 100-300 days, with water levels rising with increasing rainfall around June and then subsequently decreasing to the lowest levels during winter and early spring. Strand swamps burn very infrequently, usually as the result of wildfire during drought conditions.

**Current Conditions:**

The Telegraph Swamp and Jack's Branch wetland systems represent examples of strand swamp on Babcock Ranch, which occurs on roughly 7,566 acres. Telegraph Swamp covers a large area in the western half of Babcock Ranch Preserve. Pure stands of pond cypress and bald cypress dominate the strand swamp canopy. Some areas also have red maple (*Acer rubrum*), Carolina ash (*Fraxinus caroliniana*), dahoon holly (*Ilex cassine*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), swamp bay (*Persea palustris*), south Florida slash pine (*Pinus elliottii* var. *densa*), diamondleaved oak (*Quercus laurifolia*), and cabbage palm (*Sabal palmetto*) in the canopy and subcanopy. The shrub strata varies from open to dense and may include pond apple (*Annona glabra*), common buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), wax myrtle (*Myrica cerifera*), coastalplain willow (*Salix caroliniana*), and climbing aster (*Symphotrichum carolinianum*). The herbaceous plant cover is greater on the swamp edges and lesser in the center where water is deeper. Dominant herbs are toothed midsorus fern (*Blechnum serrulatum*), clustered sedge (*Carex glaucescens*), sawgrass (*Cladium jamaicense*), maidencane (*Panicum hemitomon*), millet beaksedge (*Rhynchospora miliacea*), lizard's tail (*Saururus cernuus*), Hottentot fern (*Thelypteris interrupta*), and Virginia chain fern (*Woodwardia virginica*). Epiphytes are common and include several species of airplants (*Tillandsia* spp.), some of which are state-listed. Common vines are white twinevine (*Sarcostemma clausum*), laurel greenbrier (*Smilax laurifolia*), eastern poison ivy (*Toxicodendron radicans*), and the non-native invasive old world climbing fern (*Lygodium microphyllum*). The State-endangered pinepink (*Bletia purpurea*), a terrestrial orchid, occurs at one location.

Most of Telegraph Swamp remains intact but portions were clearcut of cypress trees in past years. No evidence of logging can be seen along Jack's Branch. Some clearcut areas are infested with non-native invasive plant species such as West Indian marsh grass (*Hymenachne amplexicaulis*), old world climbing fern (*Lygodium microphyllum*), Peruvian primrosewillow (*Ludwigia peruviana*), and Caesar's weed (*Urena lobata*). Other non-native invasive species, including melaleuca (*Melaleuca quinquenervia*) and Brazilian pepper (*Schinus terebinthifolius*), occur in a few relatively undisturbed areas of the swamp.

**Management Needs:**

Overall, this community is in maintenance condition. Primary management action in this community will focus on landscape level restoration to re-establish natural hydrology where altered, and maintaining high quality surrounding uplands. In order to establish and maintain a natural ecotone between the strand swamp and the surrounding communities, prescribed fires should be encouraged to naturally extinguish on the edges of the swamp margin wherever possible. Additionally, established populations of non-native invasive plant species will be treated and maintained using chemical or mechanical means, or some combination of both.

**C. Wet Flatwoods**

**Description:**

Wet flatwoods are pine forests with a sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The pine canopy typically consists of one

or a combination of longleaf pine (*Pinus palustris*), and South Florida slash pine (*P. elliottii* var. *densa*). The species richness and composition within wet flatwoods benefit from fire on a two to five year interval during the late spring/early summer lightning season. Wet flatwoods on Babcock Ranch Preserve occupy from one to more than 500 contiguous acres, totaling roughly 6,477 acres. This community often occurs as a mosaic with mesic flatwoods, basin marshes, depression marshes, hydric hammocks, dome swamps, strand swamps, and wet prairies.

**Current Conditions:**

The canopy consists mostly of south Florida slash pine (*Pinus elliottii* var. *densa*), with occasional pond cypress (*Taxodium ascendens*) or longleaf pine (*Pinus palustris*). The subcanopy is open but has greater species diversity. Pines and pond cypress occur in the subcanopy with cabbage palm (*Sabal palmetto*), swamp bay (*Persea palustris*), and various oaks (*Quercus spp.*). Some wet flatwoods on BRP have dense shrub layers while others have a scarcity of shrubs and dense herbaceous groundcover. Common shrubs are wax myrtle (*Myrica cerifera*), cabbage palm (*Sabal palmetto*), saw palmetto (*Serenoa repens*), and St. John's wort (*Hypericum spp.*). Outside of areas with a dense shrub cover, the herb layer is generally well developed and quite diverse. Species include blue maidencane (*Amphicarpum muhlenbergianum*), wiregrass (*Aristida stricta*), clustered bushmint (*Hyptis alata*), tickseeds (*Coreopsis spp.*), tenangle pipewort (*Eriocaulon decangulare*), pineland heliotrope (*Heliotropium polyphyllum*), and hairawn muhly (*Muhlenbergia capillaris*). Epiphytes and vines are infrequent in wet flatwoods on Babcock Ranch Preserve. Rare plants include yellow-flowered butterwort (*Pinguicula lutea*), northern needleleaf (*Tillandsia balbisiana*), common wild-pine (*Tillandsia fasciculata*), and giant air-plant (*Tillandsia utriculata*). Disturbances to wet flatwoods on Babcock Ranch include feral hog digging, fire exclusion and infestations of non-native invasive plants. Notable occurrences of non-native invasive species include melaleuca (*Melaleuca quinquenervia*) and Brazilian pepper (*Schinus terebinthifolius*).

**Management Needs:**

Prescribed fire will be utilized every two to five years to reduce woody encroachment and encourage herbaceous species growth. Dormant season burns will be used initially to reduce fuel loads in areas with evidence of fire exclusion. Prescribed fires will be encouraged when soil conditions permit burning into the ecotone of the wetter sites. Management of fire-excluded wet flatwoods involves thinning of pines and removal of undesirable hardwoods. During mesic flatwoods timber sales, the potential to harvest into the edge of wet flatwoods sites will be evaluated. Mechanical and herbicide treatments may be used for reforestation or restoration efforts. Site preparation may include prescribed fire, chopping and / or herbicide applications.

Restoration of wet flatwoods communities on BRP will also focus on identifying, mapping and treating non-native invasive plant species. All known locations of invasive plant species will be re-visited and treated as necessary, ensuring that all updates to records provided by FNAI (2008) are made current. Restoration activities will also focus on addressing impacts to hydrology where feasible and practical.

#### **D. Wet Prairie**

##### **Description:**

Wet prairie is a nearly treeless, poorly drained flatland with few shrubs and dominated by a diverse array of wetland herbs. Fires every one to three years are important for maintaining species diversity and composition and for limiting woody encroachment and colonization by invasive plants. Wet prairies differ from wet flatwoods in that they have a longer hydroperiod, which tends to hinder the growth of pines, leaving them susceptible to the frequent fires. On BRP, wet prairie occurs between and along the edges of depression and basin marshes. Wet prairie occurs in association with dry prairie, wet flatwoods and mesic flatwoods. In some locations, the absence of a wet prairie ecotone between wet flatwoods and swamp communities suggests an alteration in natural hydrology. Wet prairies on BRP are typically less than 50 contiguous acres but a few examples approach or even exceed 200 acres, totaling 2,810 acres.

##### **Current Conditions:**

The canopy and subcanopy are mostly absent from wet prairies on Babcock Ranch Preserve, although a few south Florida slash pine (*Pinus elliottii* var. *densa*), longleaf pine (*Pinus palustris*), and pond cypress (*Taxodium ascendens*) are sometimes present. Shrub cover is generally low but may become dense in fire-excluded areas. Typical shrubs are peelbark St. John's wort (*Hypericum fasciculatum*), wax myrtle (*Myrica cerifera*), and water toothleaf (*Stillingia aquatica*). Herbs are the primary component of wet prairies on BRP. The dominant species include blue maidencane (*Amphicarpum muhlenbergianum*), broomsedge bluestem (*Andropogon virginicus*), longleaf threeawn (*Aristida palustris*), wiregrass (*Aristida stricta*), pineland rayless goldenrod (*Bigelovia nudata*), spadeleaf (*Centella asiatica*), cypress witchgrass (*Dichantheium ensifolium*), flattened pipeworts (*Eriocaulon* spp.), clustered bushmint (*Hyptis alata*), hairawn muhly (*Muhlenbergia capillaris*), rosy camphorweed (*Pluchea rosea*), Baldwin's milkwort (*Polygala baldwinii*), sand cordgrass (*Spartina bakeri*), queensdelight (*Stillingia sylvatica*), and yelloweyed-grasses (*Xyris* spp.). There are few epiphytes or vines in wet prairies. Disturbances to wet flatwoods on BRP include feral hog digging, fire exclusion and infestations of non-native invasive plants. Notable occurrences of non-native invasive species include torpedo grass (*Panicum repens*), melaleuca (*Melaleuca quinquenervia*) and Brazilian pepper (*Schinus terebinthifolius*).

##### **Management Needs:**

This community is largely in maintenance condition. Management action should focus on the use of prescribed fire (1-3 year intervals) to prevent encroachment of woody shrubs. Management activities should minimize disturbance of the soils such that hydrology of the site is not disturbed. Soil rutting, trampling, vehicles, plowed firelines, heavy equipment, roads, ditches and hog rooting can cause major changes in species composition which can be expensive to restore. Further management action will be taken to locate, identify and control non-native invasive species.

#### **E. Dry Prairie**

##### **Description:**



Dry prairies are nearly treeless flatlands dominated by a diverse assemblage of herbs and low shrubs. This is a fire-dependent community with a natural fire return interval of one to two years. Fires typically occur during the late spring/early summer lightning season. The treeless landscape of dry prairie may be attributable to flooding immediately following these fires, where slightly increased soil saturation inhibits pine seedling recruitment, though no definitive explanation exists to account for the inability to support pines. On Babcock Ranch Preserve, associated communities include mesic flatwoods, wet flatwoods, wet prairie, basin marsh, and depression marsh. Dry prairie historically occupied a larger percentage of Babcock Ranch Preserve (8,929 acres) than it does today (2,491 acres) as evidenced by General Land Survey Office maps and surveyor notes from 1872. Portions of this community are now agricultural fields (i.e., croplands, pasture and pine plantations).

**Current Conditions:**

Shrubs in dry prairies are typically less than three feet tall and are dominated by saw palmetto, dwarf live oak (*Quercus minima*), dwarf wax myrtle (*Myrica cerifera* var. *pumila*), Coastal plain staggerbush (*Lyonia fruticosa*), Atlantic St. John's wort (*Hypericum reductum*), and netted pawpaw (*Asimina reticulata*). The diverse herb layer includes wiregrass (*Aristida stricta*), bottlebrush threeawn (*Aristida spiciformis*), slender flattop goldenrod (*Euthamia caroliniana*), wild pennyroyal (*Piloblephis rigida*), yellow hatpins (*Syngonanthus flavidulus*), and yellow-eyed grasses (*Xyris* spp.). Several rare species occur on BRP dry prairies, including pine lily (*Lilium catesbaei*), yellow-flowered butterwort (*Pinguicula lutea*), and giant orchid (*Pteroglossaspis ecristata*). A few south Florida slash pine (*Pinus elliotii* var. *densa*) and longleaf pine (*Pinus palustris*) may be present. Currently areas of dry prairie on Babcock Ranch Preserve exhibit minor disturbances; these include roads, firelines, and OHV trails. There are limited occurrences of non-native invasive plant species such as cogongrass (*Imperata cylindrica*), melaleuca (*Melaleuca quinquenervia*), and Brazilian pepper (*Schinus terebinthifolius*). It is worth noting, however, that FNAI considers dry prairie on Babcock Ranch Preserve as a reference/exemplary site.

**Management Needs:**

Management actions should focus on the use of frequent prescribed fire (1-2 year intervals) to reduce and/or exclude woody species encroachment. Restoration of any long unburned dry prairie may require growing season burns to reduce woody species. Mechanical treatments may be evaluated in areas where fire is insufficient to restore natural conditions. Further management action will be taken to locate, identify and control non-native invasive plant species.

**F. Depression Marsh**

**Description:**

Depression marshes are typically rounded, shallow, herb-dominated wetlands in sand substrate. As water depth increases toward the center, distinctive zones of vegetation develop that correspond to depth and hydroperiod. Depression marshes on Babcock Ranch Preserve are typically less than 10 acres, but total roughly 2,078 acres across the property. Because this community is filled by rainfall or seepage from surrounding

uplands, it is not uncommon for depression marshes to dry out during periods of low rainfall. As a result, they may burn more frequently and more completely than basin marshes. The substrate in depression marshes is usually acid sand, possibly with peat development toward the center or deeper areas. Depression marshes are a frequent feature on Babcock Ranch Preserve and are found in association with wet prairie, wet flatwoods, mesic flatwoods and, occasionally, dry prairie and improved pasture.

**Current Conditions:**

Pickerelweed (*Pontederia cordata*), bull tongue arrowhead (*Sagittaria lanceolata*), and maidencane (*Panicum hemitomon*) are typical dominant plants in the center of depression marshes. Carolina willow (*Salix caroliniana*) and fireflag (*Thalia geniculata*) may also occur in the deepest areas. Away from the center frequently encountered species are blue maidencane (*Amphicarpum muhlenbergianum*), witchgrasses (*Dichanthelium spp.*), sundews (*Drosera spp.*), spikerushes (*Eleocharis spp.*), St. John's worts (*Hypericum spp.*), clustered bushmint (*Hyptis alata*), bluejoint panicum (*Panicum tenerum*), combleaf mermaidweed (*Proserpinaca pectinata*), and beaksedges (*Rhynchospora spp.*). Ecotones between depression marshes and wet flatwoods, mesic flatwoods and wet prairies can support woody species such as common buttonbush (*Cephalanthus occidentalis*), swamp rosemallow (*Hibiscus grandiflorus*), St. John's worts (*Hypericum spp.*), melaleuca (*Melaleuca quinquenervia*), wax myrtle (*Myrica cerifera*), cabbage palm (*Sabal palmetto*), and coastalplain willow (*Salix caroliniana*). Disturbances to depression marshes on Babcock Ranch Preserve include agricultural and forestry operations, fire exclusion, livestock grazing, hog digging, ditching and hydrologic alterations, OHV trails, roads, firebreaks, and invasion by non-native invasive species, including Peruvian primrosewillow (*Ludwigia peruviana*), Caesar's weed (*Urena lobata*), Brazilian pepper (*Schinus terebinthifolius*), para grass (*Urochloa mutica*), and West Indian marsh grass (*Hymenachne amplexicaulis*).

**Management Needs:**

Management activities for depression marshes on BRP should focus on allowing prescribed fires from surrounding uplands to burn into or through the community with a return interval averaging between 1 to 5 years. Prescribed fire will be used to decrease woody species abundance and hydrologic and soil disturbances will be minimized. Appropriate prescribed burns will aid in decreasing woody species abundance. Marshes with substantial shrub cover (either within the marsh or on the surrounding edges) will be burned on a shorter return interval than herbaceous sub types, in order to allow conversion to an herb dominated situation. Existing firelines, ditches, beds, berms and other ground-disturbing structures with potential hydrological impacts will be evaluated for restoration opportunities and avoided within and around this community in the future. Additional management consideration will be given to locating, identifying and controlling non-native invasive species.

**G. Basin Marsh**

**Description**

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 matrix community. 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. This fire-maintained community usually burns every one to ten years. Basin marshes are distinguished from depression marshes by their irregular shape, large size, deep peat areas, and longer periods of saturation. The largest basin marshes on Babcock Ranch Preserve exceed 50 contiguous acres in size and total 1,845 acres property-wide. Basin marshes may grade into wet prairies, wet flatwoods, mesic flatwoods, dry prairies, hydric hammocks or strand swamps.

**Current Conditions:**

Basin marshes often have concentric zones of vegetation that reflect water depth, hydroperiod, or the amount of peat buildup. The deepest zones typically occur in the center but may also exist in pockets throughout the marsh. Open water is often present in these deep areas. In and around the deepest zones and extending into the deepest sand bottom areas are yellow pondlily (*Nuphar advena*), pickerelweed (*Pontederia cordata*), bulltongue arrowhead (*Sagittaria lancifolia*), alligatorflag (*Thalia geniculata*), and maidencane (*Panicum hemitomon*). The large but shallower central zones of the marshes support Tracy's beaksedge (*Rhynchospora tracyi*), water toothleaf (*Stillingia aquatica*), longleaf threeawn (*Aristida palustris*), bluejoint panicum (*Panicum tenerum*), yellow-eyed grasses (*Xyris spp.*), and peelbark St. John's wort (*Hypericum fasciculatum*). The shallowest zone, occurring near the edges of marshes, supports marshpennywort (*Hydrocotyle spp.*), southern umbrellasedge (*Fuirena scirpoidea*), turkey tangle fogfruit (*Phyla nodiflora*), camphorweeds (*Pluchea spp.*), and sand cordgrass (*Spartina bakeri*). The perimeters of some basin marshes may support trees and shrubs. These woody species include dahoon (*Ilex cassine*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), swamp bay (*Persea palustris*), south Florida slash pine (*Pinus elliotii*), cabbage palm (*Sabal palmetto*), and pond cypress (*Taxodium ascendens*). Disturbances to basin marshes on BRP include invasion by non-native invasive species such as Peruvian primrosewillow (*Ludwigia peruviana*), West Indian marsh grass (*Hymenachne amplexicaulis*), and Brazilian pepper (*Schinus terebinthifolius*), as well as hog digging, livestock grazing, hydrological alteration by ditching or canals, fire exclusion, agricultural and forestry operations, OHV trails, and encroachment by wax myrtle (*Myrica cerifera*) and coastalplain willow (*Salix caroliniana*). Historically, basin marshes on BRP had notably fewer woody plants. Frequent fires from the surrounding uplands would likely have carried into the marshes, particularly during dry periods, slowing woody encroachment.

**Management Needs:**

Prescribed fire will be periodically introduced into the wetlands to maintain wetland vegetation and to keep woody vegetation from encroaching. Fire will be more frequent at the margins than in the center of the ponds. The grassy fringes will be burned with a frequency of one to four years. Periodic burning should be sufficient to maintain native groundcover. This area is not appropriate for silviculture or ranch operations. No artificial plantings, site prep or grazing will take place in these habitats. Ground

disturbance will be avoided when possible to prevent impacts on hydrological processes. Invasion of shrubs and trees and the formation of peat will be restricted by prescribed fire. Management action will be taken to locate, identify and control non-native invasive plant species.

## **H. Dome Swamp**

### **Description:**

Dome swamps are typically small, rounded, forested wetlands with a characteristic dome-like profile created by a gradient of tree size, where taller trees grow in the deeper, central portion of the swamps and shorter trees are at the edges. 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 subsoils, 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. This peat layer is generally underlain with acidic sands or marl and then limestone or a clay lens. In southern Florida, dome swamps also occur on peat directly overlying limestone. On Babcock Ranch Preserve, dome swamps are generally less than 10 contiguous acres but total to 1,201 acres across the property. They are usually embedded within mesic flatwoods and wet flatwoods but may also occur in wet prairies. Some dome swamps exist as islands within basin marshes.

### **Current Conditions:**

Dome swamps on BRP typically have a dense canopy of pond cypress (*Taxodium ascendens*). Less frequently red maple (*Acer rubrum*), south Florida slash pine (*Pinus elliotii* var. *densa*), diamond-leaved oak (*Quercus laurifolia*), and cabbage palm (*Sabal palmetto*) can be found in the canopy or subcanopy. Shrub abundance varies among dome swamps, ranging from sparse in some, to quite dense in others. Typical shrubs include common buttonbush (*Cephalanthus occidentalis*), Carolina ash (*Fraxinus caroliniana*), dahoon (*Ilex cassine*), wax myrtle (*Myrica cerifera*), swamp bay (*Persea palustris*), and myrsine (*Rapanea punctata*). Herb cover is similarly variable with typical species including false nettle (*Boehmeria cylindrica*), maidencane (*Panicum hemitomon*), camphorweed (*Pluchea* spp.), smartweed (*Polygonum* spp.), Canadian germander (*Teucrium canadense*), and a variety of fern species, especially toothed midsorus fern (*Blechnum serrulatum*). Epiphytes are present on trees in some dome swamps and are represented by golden polypody (*Phlebodium aureum*), various species of air plants (*Tillandsia* spp.), and shoestring fern (*Vittaria lineata*). Disturbances to dome swamps on Babcock Ranch Preserve include invasion by non-native invasive species, particularly Brazilian pepper (*Schinus terebinthifolius*), old world climbing fern (*Lygodium microphyllum*), sword fern (*Nephrolepis cordifolia*), and Caesar's weed (*Urena lobata*). Other disturbances include tree thinning or clearing, hog digging, cattle grazing, hydrologic alterations, woody encroachment, OHV trails, firebreaks, and fire exclusion.

### **Management Needs:**

Most domes are in maintenance condition and do not need management other than including them within the prescribed fire units when planning a burn. Dome swamps ringed with firelines or otherwise altered hydrology will be assessed for restoration. FFS staff will work with the FFS Forest Hydrology section to assess sites for such restoration and remediate as resources permit. Efforts during this planning period will address fire-suppressed dome swamp margins. New firelines will not typically be constructed around dome swamps, and will be rehabilitated if they are constructed during wildfire suppression activities. Silviculture in surrounding uplands will follow Silvicultural BMPs. Management actions will also include efforts to locate, identify and control non-native invasive species.

## I. Slough

### **Description:**

Sloughs are the deepest drainage-ways within swamps and marsh systems. They are broad channels inundated with slow moving or nearly stagnant water, except during extreme droughts. The vegetation structure is variable with some sloughs dominated by floating aquatics, others by large emergent herbs, and still others by a low or sparse canopy. Sloughs occur in irregular linear arrangements within the strand swamp community, often forming an intricate mosaic of wetland communities. Sloughs are often aligned with the lowest part of troughs in the underlying limestone bedrock. While they may be common features within a swamp, sloughs are usually not described separately from the swamp vegetation. The soils in a slough are peat, unless consumed by catastrophic fires that may occur during droughts. On Babcock Ranch Preserve, slough occurs as natural openings in the Telegraph Swamp and Jack's Branch strand swamps. These openings are typically less than 10 acres in size but sloughs may also exceed 50 contiguous acres, totaling 682 acres on BRP.

### **Current Conditions:**

Canopy trees occur mainly around the periphery of sloughs on Babcock Ranch Preserve and are limited to pond cypress (*Taxodium ascendens*) and bald cypress (*Taxodium distichum*). The sub-canopy has young cypress, Carolina ash (*Fraxinus caroliniana*), and coastal plain willow (*Salix caroliniana*). Shrubs are infrequent but are represented by pond apple (*Annona glabra*), common buttonbush (*Cephalanthus occidentalis*), Peruvian primrose willow (*Ludwigia peruviana*), wax myrtle (*Myrica cerifera*), coastal plain willow, and climbing aster (*Symphytotrichum carolinianum*). The herb layer is often quite extensive, dominated by toothed midsorus fern (*Blechnum serrulatum*), sawgrass (*Cladium jamaicense*), bulltongue arrowhead (*Sagittaria lancifolia*), and alligator flag (*Thalia geniculata*). Common epiphytes on the trees include northern needle leaf (*Tillandsia balbisiana*), common wild-pine (*Tillandsia fasciculata*), ballmoss (*Tillandsia recurvata*), southern needle leaf (*Tillandsia setacea*), and Spanish moss (*Tillandsia usneoides*). Occasional vines include white twinevine (*Sarcostemma clausum*), laurel greenbrier (*Smilax laurifolia*), and eastern poison ivy (*Toxicodendron radicans*). Non-native invasive plants include water hyacinth (*Eichhornia crassipes*), West Indian marsh grass (*Hymenachne amplexicaulis*), Peruvian primrosewillow (*Ludwigia peruviana*), melaleuca (*Melaleuca quinquenervia*), and water-lettuce (*Pistia stratiotes*).

**Management Needs:**

This community, for the most part, is considered to be in maintenance condition. Management actions will primarily focus on improving and maintaining the proper hydrology for these systems. Sloughs with altered hydrology will be evaluated for further restoration. Management will also focus on locating, identifying and controlling non-native invasive plant species.

**J. Hydric Hammock****Description:**

Hydric hammock is an evergreen hardwood and/or palm forest with 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. Soils are variable, usually somewhat acidic to slightly alkaline with little organic matter, and in all cases, alkaline materials are available in the substrate. Deeper soils over limestone (Aripeka series) and deep sands with calcium carbonate nodules and shell fragments underlie many hammocks in peninsular Florida. These substrates are conducive for the growth of calciphiles characteristic of hydric hammock (red cedar, rattan vine, etc.) Hydric hammock is inundated only for short periods following heavy rains. The normal hydroperiod is seldom over 60 days per year. Fires are infrequent but may reach the edge of a hydric hammock with saturated soils and humid, shaded conditions typically limiting the extent of burning into the hammock. Hydric hammocks on Babcock Ranch Preserve occur along or within strand swamps, or as islands within basin marshes. Associated communities include wet flatwoods, mesic flatwoods, wet prairies, and basin marshes. Hydric hammock comprises 464 acres on BRP.

**Current Conditions:**

Canopy cover is usually dense and dominated by diamond-leaved oak (*Quercus laurifolia*). The sub-canopy is more species rich, but cabbage palm (*Sabal palmetto*) is nearly always present. The dense canopy and subcanopy limit available sunlight for lower strata. Shrubs include wax myrtle (*Myrica cerifera*), swamp bay (*Persea palustris*), myrsine (*Rapanea punctata*), cabbage palm (*Sabal palmetto*), and saw palmetto (*Serenoa repens*). Herbs include toothed midsorus fern (*Blechnum serrulatum*), false nettle (*Boehmeria cylindrica*), climbing hempvine (*Mikania scandens*), and hottentot fern (*Thelypteris interrupta*). Epiphytes can occasionally be found in the canopy, and include golden polypody (*Phlebodium aureum*), resurrection fern (*Pleopeltis polypodioides* var. *michauxiana*), numerous air-plants (*Tillandsia* spp.), and shoestring fern (*Vittaria lineata*). The major disturbance to hydric hammocks on Babcock Ranch Preserve is feral hog digging; the extensive ground disturbance in the hammocks allows colonization by non-native invasive plant species such as old world climbing fern (*Lygodium microphyllum*), Brazilian pepper (*Schinus terebinthifolius*), and Caesar's weed (*Urena lobata*). Other disturbances include OHV trails, roads and drainage ditches and

canals.

**Management Needs:**

This community is largely considered to be in maintenance condition and no large scale management actions are needed in this community, outside of invasive species management (i.e., herbicide treatments, mechanical treatments). Improvements in roads or culverts that impact this community will follow Silvicultural BMP guidelines.

**K. Mesic Hammock**

**Description:**

Mesic hammock is a well-developed evergreen hardwood and/or palm forest on soils that are rarely inundated. 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 uplands communities. Historically, mesic hammocks were likely restricted to naturally fire-protected areas such as islands and peninsulas of lakes. Other landscape positions that can provide protection from the spread of fire from one or more directions are thus likely places for mesic hammock development. These include edges of lakes, sinkholes, other depressional or basin wetlands, and river floodplains. Soils of mesic hammock are sands mixed with organic matter and may have a thick layer of leaf litter. Rock outcrops are common in some hammocks, especially where limestone is near the surface. In South Florida, tree islands in the Everglades occasionally develop mesic hammock on organic soils, while further west in the Big Cypress, soils supporting mesic hammock are sandier. Mesic hammocks occupy soils that, although well-drained, maintain high moisture by heavy shading of the ground layer and accumulation of litter. 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 infrequently throughout BRP, bordering depression marshes, basin marshes, strand swamps, or rarely imbedded within strand swamps. In the southernmost portion of Babcock Ranch Preserve, mesic hammocks adjoin scrub and scrubby flatwoods and comprise roughly 257 acres total on the property.

**Current Conditions:**

The canopy is dense and typically dominated by live oak (*Quercus virginiana*) and cabbage palm (*Sabal palmetto*), sometimes with south Florida slash pine (*Pinus elliotii* var. *densa*) and other oaks (*Quercus spp.*). The sub-canopy is less dense but consists of a similar suite of species. Shrubs less than six feet tall are often quite dense and are the dominant component of the understory. Primary species include saw palmetto (*Serenoa repens*) and wax myrtle (*Myrica cerifera*). Herbs are relatively sparse and include blue maidencane (*Amphicarpum muhlenbergianum*), toothed midsorus fern (*Blechnum serrulatum*), slender flattop goldenrod (*Euthamia caroliniana*), toothpetal false rein orchid (*Habenaria floribunda*), and clustered bushmint (*Hyptis alata*). Epiphytes are present in most mesic hammocks on Babcock Ranch Preserve and include golden polypody (*Phlebodium aureum*), resurrection fern (*Pleopeltis polypodioides* var. *michauxiana*), and air plants (*Tillandsia spp.*). The major disturbances in mesic hammocks on BRP are feral hog digging and infestations of non-native invasive plant

species, such as Brazilian pepper (*Schinus terebinthifolius*), cogongrass (*Imperata cylindrica*), Peruvian primrose willow (*Ludwigia peruviana*), old world climbing fern (*Lygodium microphyllum*), and Caesar's weed (*Urena lobata*).

**Management Needs:**

This community is essentially in maintenance condition and active management in mesic hammock will be minimized to preserve this community. Prescribed burns in the adjacent natural communities will naturally extinguish along the hammock edge, so fire does not need to be excluded from these mesic hammocks. New firebreaks will be discouraged to help minimize invasion by weedy or non-native invasive species. Actions will also be taken to locate, identify and control any non-native plant species.

**L. Scrubby Flatwoods**

**Description:**

Scrubby flatwoods have an open canopy of widely spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. 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 a spodic horizon. Scrubby flatwoods occur in five locations at the south end Babcock Ranch on small, elevated ridges of about 50 acres or less, totaling 113 acres.

**Current Conditions:**

Scrubby flatwoods on Babcock Ranch Preserve have a canopy of widely scattered south Florida slash pine (*Pinus elliottii* var. *densa*) and occasional sand live oak (*Quercus geminata*). Tall shrubs are dominated by Chapman's oak (*Quercus chapmanii*), sand live oak, myrtle oak (*Quercus myrtifolia*), and coastal plain staggerbush (*Lyonia fruticosa*). These are also present in the dense short shrub layer, with saw palmetto (*Serenoa repens*), netted pawpaw (*Asimina reticulata*), tarflower (*Bejaria racemosa*), Atlantic St. John's wort (*Hypericum reductum*), gopher apple (*Licania michauxii*), fetterbush (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), and shiny blueberry (*Vaccinium myrsinites*). In addition to terrestrial lichens (*Cladina evansii* and *Cladonia leporina*), the sparse herbaceous layer includes broomsedge bluestem (*Andropogon virginicus*), wiregrass (*Aristida stricta*), coastal plain honeycomb-head (*Balduina angustifolia*), Elliott's milkpea (*Galactia elliottii*), Florida scrub frostweed (*Helianthemum nashii*), sandyfield beaksedge (*Rhynchospora megalocarpa*), and sweet goldenrod (*Solidago odora*). Occasional vines are earleaf greenbrier (*Smilax auriculata*) and muscadine (*Vitis rotundifolia*). Disturbances to scrubby flatwoods include non-native invasive plant species infestation and fire exclusion. One scrubby flatwoods on the property is reported to be planted with grand eucalyptus (*Eucalyptus grandis*); although the groundcover at this location is disturbed, it nevertheless retains abundant native scrubby flatwoods vegetation.

**Management Needs:**

Scrubby flatwoods will be managed similar to surrounding mesic flatwoods, as they are pyrogenic, infrequent, and small; though fire return intervals for scrubby flatwoods are



generally between 5-15 years, based on local fuel conditions. Burning will be encouraged across transition zones. Areas with heavy fuel build up and thick midstory may require mechanical and herbicide treatments prior to re-introducing prescribed fire.

#### **M. Scrub**

##### **Description:**

Scrub is a fire-maintained community composed of evergreen shrubs, with or without a canopy of pines. A ground cover of terrestrial lichens and herbs is generally sparse. Scrub occurs in only a few locations at the south end of Babcock Ranch, on small, elevated ridges mostly less than 10 acres in size, with the largest area being 33 acres, all totaling 69 acres.

##### **Current Conditions:**

Scrub canopy trees are generally sparse or absent. South Florida slash pine (*Pinus elliottii* var. *densa*), when present, are widely spaced and few in number. Sand live oak (*Quercus geminata*) occasionally reaches 20 plus feet tall. Most scrub on Babcock Ranch Preserve is composed of dense shrubs to 15 feet in height, dominated by coastal plain Chapman's oak (*Quercus chapmanii*), sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*), and staggerbush (*Lyonia fruticosa*). Other species, found primarily in the diverse short shrub layer (<6 feet) are Atlantic St. John's wort (*Hypericum reductum*), fetterbush (*Lyonia lucida*), wild pennyroyal (*Piloblephis rigida*), scrub palmetto (*Sabal etonia*), saw palmetto (*Serenoa repens*), shiny blueberry (*Vaccinium myrsinites*), deerberry (*Vaccinium stamineum*), and hog plum (*Ximenia americana*). The sparse herbaceous layer includes broomsedge bluestem (*Andropogon virginicus*), Florida alicia (*Chapmannia floridana*), Elliott's milkpea (*Galactia elliottii*), Florida scrub frostweed (*Helianthemum nashii*), and sandyfield beaksedge (*Rhynchospora megalocarpa*). The vines earleaf greenbrier (*Smilax auriculata*) and muscadine (*Vitis rotundifolia*) are occasional. The dominance of tall shrubs indicates fire exclusion within the scrub community. Prescribed fire is necessary to reduce the height and percent cover of the woody species.

##### **Management Needs:**

This community will be managed similarly to the scrubby flatwoods. Fire has been excluded from this community in recent years, and FFS will evaluate the best way to re-introduce fire into the scrub.

#### **N. Altered Landcover Types**

Altered landcover types are those that are defined as landscapes that are not in natural condition. These landcover types have been converted, either partially or wholly, from their historic natural community type or severely altered by human impacts, such as fire exclusion or agriculture. For the purposes of this land management plan, those landcover types described herein will be managed and maintained in their current state as part of the ranch function and infrastructure.

##### **1. Pasture – Improved**

###### **Description:**

Improved pasture is generally dominated by planted non-native or domesticated native forage species and evidence of current or recent pasture activity and/or cultural treatments (i.e., mowing, grazing, burning, fertilizing). Improved pastures have been cleared of their native vegetation. Most improved pastures in Florida are planted with bahiagrass (*Paspalum notatum*) and to a lesser extent with Bermudagrass (*Cynodon dactylon*) or pangolagrass (*Digitaria eriantha*). Weedy native species are often common in improved pastures in Florida and include dogfennel (*Eupatorium capillifolium*), many species of flatsedge (*Cyperus spp.*), carpetgrasses (*Axonopus spp.*), crabgrasses (*Digitaria spp.*), and rustweed (*Polypremum procumbens*) among many others.

**Current Conditions:**

Improved pasture is an anthropogenic vegetation type dominated by range grasses planted for the purpose of grazing livestock, with approximately 10,143 acres present on BRP. Improved pastures may have been former row crop fields or natural communities. There may be a few scattered canopy trees including south Florida slash pine (*Pinus elliotii* var. *densa*) and live oak (*Quercus virginiana*), particularly on the edges of the pastures. Shrubs are typically sparse and primarily include wax myrtle (*Myrica cerifera*), the non-native invasive Brazilian pepper (*Schinus terebinthifolius*), and saw palmetto (*Serenoa repens*). Herbaceous cover is usually dominated by Bahiagrass (*Paspalum notatum*). Several weedy species are often present; these include dogfennel (*Eupatorium capillifolium*), slender flattop goldenrod (*Euthamia caroliniana*) turkey tangle fogfruit (*Phyla nodiflora*), smutgrass (*Sporobolus indicus*), and broomsedge bluestem (*Andropogon virginicus*). The non-native invasive Caesar's weed (*Urena lobata*) and tropical soda apple (*Solanum viarum*) are frequently present, particularly under occasional trees or along the pasture edges.

**Management Needs:**

Primary management actions include herbicide application, fertilizer application, liming (or comparable soil pH treatment), mowing, burning, non-native invasive plant control, and grazing.

**2. Pasture – Semi-Improved**

**Description:**

Semi-improved pasture is dominated by a mix of planted non-native or domesticated native forage species and native groundcover, due to an incomplete conversion to pasture, not regeneration. Semi-improved pastures have been cleared of a significant percentage of their native vegetation and planted in non-native or domesticated native forage species, but still retain scattered patches of native vegetation with natural species composition and structure (most often small areas of mesic flatwoods) among the pastured areas. The planted areas are usually dominated by bahia grass (*Paspalum notatum*) and can resemble improved pastures. Seeding of bahia grass can also occur within areas of native groundcover. This cover type comprises roughly 1,169 acres across the BRP.

**Current Conditions:**

Areas mapped as semi-improved pasture have been modified by chopping, pasture grass seeding, and grazing, but retain some characteristics of a natural community. On Babcock Ranch Preserve, most of the semi-improved pasture occurs in areas that were historically mesic flatwoods, and share some attributes with mesic flatwoods. Canopy and sub-canopy cover is sparse, if present at all, and consists of south Florida slash pine (*Pinus elliottii* var. *densa*). Tall shrubs are common and are generally species that invade flatwoods because of fire exclusion. These include laurel oak (*Quercus hemisphaerica*), groundsel tree (*Baccharis halimifolia*), cabbage palm (*Sabal palmetto*), and the non-native invasive, Brazilian pepper (*Schinus terebinthifolius*). Short shrubs are moderately dense to sparse and include saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), coastalplain staggerbush (*Lyonia fruticosa*), wax myrtle (*Myrica cerifera*), and American beautyberry (*Callicarpa americana*). Bahiagrass (*Paspalum notatum*) is usually the dominant species in the herbaceous layer, occurring in open areas within the shrubs. Other common grasses are tropical carpetgrass (*Axonopus compressus*), and blue maidencane (*Amphicarpum muhlenbergianum*). Wiregrass (*Aristida stricta*) is uncommon in most of the semi-improved pastures. Common weeds include dog fennel (*Eupatorium capillifolium*), slender flattop goldenrod (*Euthamia caroliniana*), smutgrass (*Sporobolus indicus*), licorice weed (*Scoparia dulcis*), and broomsedge bluestem (*Andropogon virginicus*). Common non-native invasive herbs include torpedo grass (*Panicum repens*), tropical soda apple (*Solanum viarum*), and Caesar's weed (*Urena lobata*).

**Management Needs:**

Primary management actions include herbicide application, fertilizer application, liming (or comparable soil pH treatment), mowing, burning, non-native invasive plant control, and grazing.

**3. Other Ruderal Sites**

The following ruderal sites (4,485 acres) can be found on BRP:

- **Abandoned Field / Abandoned Pasture** – Old fields, fallow pastures, early successional areas formerly grazed or in agriculture without recent activity to maintain the area as pasture or planted field. These areas are often dominated by weedy native (e.g., *Rubus spp.*, *Myrica cerifera*) and non-native species (e.g., *Indigofera hirsuta*). In old pastures, generally designated when weedy cover from woody species (*Rubus spp.*, *Myrica cerifera*, etc) is greater than 20 percent. (638 acres)
- **Agriculture** – Row crops, citrus groves, and sod fields that are generally being maintained to grow products for human or domesticated animal use. (2,885 acres)
- **Canal / Ditch** – Artificial drainage way. (56 acres)
- **Clearcut Pine Plantation** – Areas of pine plantation that have undergone clear-cutting of the pine canopy but have not yet been replanted with pine trees. These areas are often dominated by weedy native and non-native species. Natural pine dominated communities that have been clearcut but not further altered should be classified as the natural community. (2 acres)

- **Clearing / Regeneration** – Dove fields, wildlife food plots, recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community (old home sites, etc.). (447 acres)
- **Developed** – Check stations, OHV use areas, parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), botanical or ornamental gardens, campgrounds, recreational, industrial, and residential areas. (104 acres)
- **Invasive monoculture** – Stand of non-native invasive plant species that have eliminated the native vegetation, or nearly so. (321 acres)
- **Impoundment** – Stream or watershed impoundment. (29 acres)
- **Spoil area** – Area where dredge or spoil material is deposited, may be re-colonized by plants. (3 acres)

### VIII. Ranch Management

The agricultural heritage of BRP must be protected for current and future generations by continued operation as a working ranch under a unique management approach that protects the land and resource values of the property and surrounding ecosystems, while allowing the ranch to be financially self-sustaining. Those activities necessary to accomplish the goals of multiple-use and sustained yield of the renewable surface resources include, but are not limited to: silviculture operations, pasture management, livestock management, native plant nursery operations, apiary operations, sod farming, ecotourism, tenant farming and hunting leases. FFS will develop and implement a Five-Year Agricultural Management Plan, which will include associated operational activities and goals. FFS will update this living document on an annual basis.

FFS may conduct environmental assessment work on BRP during each ten-year planning period to ensure the protection of the state's investment, as well as the property's environmental resources, including water resources. Any urgent short-term environmental work will be conducted as necessary throughout the planning period. Environmental work may include but not be limited to: performance of an environmental site observation, environmental site assessment, investigative sampling and/or excavation/remediation of contaminants and/or contaminated materials.

While ranch operations include forestry and recreation, the focus of this section is on grazing and agriculture, as other operations are covered in other sections.

#### A. **Historical Practices**

Management of grazing at the ranch utilized both improved pastures and native range. The original ranch property, which had a more expansive acreage than the now State-owned BRP property, ran about 4,000 to 5,000 head of cattle in order to produce high quality beef cattle, which were marketed to feedlots in the western part of the United States of America. Both the pastures and the native range were regularly burned during late winter/early spring to stimulate new growth of forage plants and both are utilized for relatively short-term grazing (flash grazing) to take advantage of succulent re-growth of fresh forage. Later in the year, cattle were left on both pasture and native range for longer periods when forage quality is lower. At such times, supplemental feeds were used as

needed. Cattle were managed in separate herds depending upon where they were in their reproductive cycle and the type of forage they had available to them was dependent upon this.

## **B. Grazing and Ranch Management**

The ranch provides year round grazing using Best Management Practices (BMPs) that will maximize income without sacrificing production or environmental quality.

South Florida native range is generally nutrient poor and thus successful commercial cattle grazing requires careful land management and carefully planned stocking rates. Without regular and frequent fire, or some mechanical means of land clearance, shrubs, particularly saw palmetto, will increase and eventually become almost equivalent to a monoculture over the flatwoods and dry prairies, which is the majority of the range available. Frequent prescribed fires (every 1 – 3 years) are the cheapest way to retard saw palmetto encroachment and thus maintain openings in which annual and perennial grasses, shrubs, and forbs can grow. Frequent fires also encourage higher quality forages for both cattle and wildlife and increase diversity in the ground cover.

Grasses favored by cattle on South Florida range include chalky bluestem (*Andropogon virginicus* var. *glaucus*), creeping bluestem (*Schizachyrium scoparium*), lopsided indianguass (*Sorghastrum secundum*), and maidencane (*Panicum hemitomon*) (in wetter areas). These grasses are categorized by range scientists as “decreasers” because cattle tend to selectively graze these grasses, thus they are likely to decrease on range that is overgrazed.

After a fire, these and other grasses will quickly respond with new growth either from rootstocks, rhizomes, or seed. If several weeks are allowed for establishment, there will be a period of good grazing on young nutritious new growth. Wiregrass, another common grass of South Florida range, is not favored by cattle but the new growth for several weeks after a burn is good forage. Together with other less favorable grasses, including broomsedge and bottlebrush threeawn, wiregrass is classified as an ‘increaser’ grass, which is less palatable. Increasesers, because they tend not to be selected by cattle until the decreasers are in short supply, will tend to increase on overgrazed range. Numerous forb species will grow among the grasses and also be eaten, including spring beauty, red root, and a number of goldenrods.

An important consideration for ranchers as they seek to determine stocking rates and rotational schedules is to determine the existing condition of the range available to them. Range is assessed to determine its “Condition Class” based largely on the ratio of the more desirable grasses to the less desirable grasses. A range can be classified as excellent, good, fair, or poor under this system with excellent range having 76% or more of the forage made up of decreaser grasses, while poor range has less than 25%. In 2002, only about 5% of Florida native range was considered to be excellent according to this scheme and 55% was considered poor (Kalmbacher and Ezenwa 2002).

The types and proportions of grasses produced on different ranges are dependent on a complex of conditions associated with soil type, soil moisture, fire regime, and other ecological processes. Recent work by panels of experts in the *Journal of Range Management* and the National Research Council has proposed that “Rangeland Health” be used to supplant Condition Class assessments. Rangeland Health is defined as “the degree to which the integrity of the soil, vegetation, water, and air as well as ecological processes of the rangeland are balanced and sustained. Integrity is defined as the maintenance of the functional attributes of a locale, including normal variability.” Rangeland Health takes into account dynamic ecological processes, while Condition Class is simply a measure of plants present in a climax community, and is therefore a much more comprehensive assessment. Unfortunately no comprehensive Rangeland Health assessments have been done for South Florida range to date. In lieu of a Rangeland Health assessment, the FNAI habitat assessment, in conjunction with other science-based resources, should be used as a guide by the University of Florida Institute of Food and Agricultural Sciences (IFAS) Range Cattle Research and Education Center, and/or the Natural Resources Conservation Service (NRCS), to establish cattle stocking rates within rangeland areas determined to be below their potential sufficiently such that a temporary reduction in grazing pressure, chopping for shrub control, or some other management input may be appropriate.

Fire has long been used as a tool to improve rangeland health due to its creating conditions for a flush of new growth of young and succulent vegetation. Winter fires (November to February) are traditional on Florida ranches. These fires stimulate a flush of spring growth for cattle feed in the late winter and early spring at a time when older dry forage is of poor quality. Winter fires are easier to manage as they burn cooler and with less intensity. However, the natural fire regime in South and Central Florida is spring and summer fires triggered by lightning. These fires are most common from March through June (burned acreage highest in May and June) and are widely believed to have been a major force in shaping the Florida landscape over many centuries. Plant species in flatwoods and dry and wet prairies are well adapted to frequent fires (every 1 to 5 years); seed production of many grasses is triggered by fires – wiregrass and lopsided indiagrass are two examples. Spring fires also kill new growth of woody perennials including saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), lyonia (*Lyonia* spp.), and oaks (*Quercus* spp.) and as a result are very effective at controlling and reducing their abundance.

### **C. Ranch Administration and Agreement Management**

FFS may award leases for the management of ranch operations including, but not limited to: silviculture operations, pasture management, livestock management, native plant nursery operations, apiary operations, sod farming, seed harvesting, hay contracts, ecotourism, tenant farming, and hunting leases.

All leases and their respective deliverables and any Invitations to Negotiate, Invitations to Bid or Requests for Proposals for those management activities will delineate the details

of the agreements and contain the framework for the responsibilities of all parties. All applicable agreements will use a document approved by FDACS and the FFS.

#### **D. Cattle Operations/Cow-Calf Best Management Practices**

Agricultural BMPs are practical, cost-effective actions that agricultural producers can take to reduce the amount of pesticides, fertilizers, animal waste, and other pollutants entering our water resources, and to conserve water supply. BMPs are designed to benefit water quality and water conservation while maintaining or even enhancing agricultural production. FDACS develops and adopts BMPs by rule for different types of agricultural operations. Most of the BMPs are outlined in specific manuals. Florida law provides for agricultural producers to reduce their impacts to water quality through the implementation of BMPs adopted by FDACS. In some cases, agricultural BMPs are required.

The FFS will require all cattle operations on BRP to follow all applicable BMPs. All relative BMP's may be accessed on the FDACS Office of Agriculture Water Policy website: <http://www.freshfromflorida.com/Divisions-Offices/Agricultural-Water-Policy>.

#### **E. Range and Pasture Management and Grazing Routine**

##### **1. Rangeland Health**

Recent work by panels of experts in the Journal of Range Management and the National Research Council has proposed that "Rangeland Health" be used to supplant Condition Class assessments. Rangeland Health is defined as "the degree to which the integrity of the soil, vegetation, water, and air as well as ecological processes of the rangeland are balanced and sustained. Integrity is defined as the maintenance of the functional attributes of a locale, including normal variability." Rangeland Health takes into account dynamic ecological processes, while Condition Class is simply a measure of plants present in a climax community, and is therefore a much more comprehensive assessment. Unfortunately no comprehensive Rangeland Health assessments have been done for South Florida range to date. In lieu of a Rangeland Health assessment, the FNAI habitat assessment, in conjunction with other science-based resources, should be used as a guide by the University of Florida Institute of Food and Agricultural Sciences (IFAS) Range Cattle Research and Education Center, and/or NRCS, to establish cattle stocking rates within rangeland areas determined to be below their potential sufficiently such that a temporary reduction in grazing pressure, chopping for shrub control, or some other management input may be appropriate.

##### **2. Stocking Rates**

On both pastures and native range, stocking rates are determined dependent upon the soil conditions, weather, and condition of forage in different years and at different times of each year. On pastures the rate will vary between 1 cow per 2 acres and 1 cow per 4 acres, while on native range the ratio switched to 1 cow per 30 acres at best and 1 cow per 50 acres under less favorable conditions.

No matter how good rangeland health may be, lactating cows with calves generally cannot maintain their weight and health on native range alone. They need some form of supplementation for their diet or it is most likely that they will not be able to breed and carry a new calf immediately after the previous one has weaned. This situation can be remedied either through supplemental feeding or pulling cows off range and putting them on improved pasture or both. Research at the University of Florida Research and Education Center at Ona has indicated that South Florida pastures should be substituted for range at a ratio of between 1:8 and 1:10. This means that 1 acre of pasture is about equivalent to 8 to 10 acres of range (Kalmbacher and Ezenwa 2002). The relative amounts of pasture and range available to ranchers as well as an assessment of Rangeland Health can therefore be used to determine stocking densities. Current stocking densities on BRP range from 2 to 4 acres/cow on improved pasture and 30 to 50 acres/cow on native range, depending on rainfall, soil fertility, and other factors. These densities are similar to the ratios recommended by Kalmbacher and Ezenwa (2002).

**3. Pasture Maintenance**

Because fire is critical to nutrient cycling in the soil for maintaining ecological health, the ranch follows guidelines established by the Florida Forest Service in a burning program to enhance the native wood lands located on the ranch.

Native ranges are burned every 3-5 years, generally in the months of November through March. Pastures are also fertilized each year, usually in early spring. Areas of maidencane marsh are available to cattle when they are on the range, particularly on the fringes of Telegraph Swamp. This is choice grazing for the ranch’s cattle and is heavily favored.

The range is utilized for spring grazing on new forage that has sprouted in response to burning and become established. Cows are moved around on these areas frequently to prevent overgrazing and are moved back to pasture in early summer to take advantage of re-growth following burns in spring. As summer progresses and shifts into fall, cows are moved from pasture to pasture and utilize both range and improved pasture depending upon conditions and the judgments of the ranch manager. Grazing is done in compliance with the Florida Cattlemen’s Association BMP Manual. An average year for cattle management at the ranch will follow a schedule similar to that laid out in the Table 6.

**Table 6: An Average Year for Cattle Management**

Action	Notes
Prescribed fire on native range	Up to 25,000 acres per



	year in winter and spring
Breeding season	Later winter – early spring
Branding, vaccination and castration of calves	Spring
Rotation of cattle herds through pastures and native range to take advantage of high quality grazing	Spring-Fall
Calves shipped to feedlots	Late summer
Calving season	Fall and Winter
Pregnant and non pregnant cows on selected range	Winter
Sale of non-productive cows and replacement by best quality heifers	Winter

FFS, or its designated lessees or contractors, may excavate ponds in the Improved Pasture Area for the benefit of livestock and wildlife. Any future pond excavations will be performed in accordance with applicable BMPs. Ponds will not be excavated in natural areas.

**F. Farming Operations / FDACS BMP's**

Efforts will be made to identify and implement alternative revenue and funding sources for the continued responsible management of BRP. The use of tenant farming will be subject to future evaluation and the development and terms of any future management and business / operational plans.

1. **Tenant Farming** - If the acreage under tenant farming licenses increases above the current level, but below the limits set below, only existing improved farm fields or improved pastures will be utilized.
2. **Natural Areas** – Areas identified as natural areas, as defined by FNAI, shall not be converted to farm fields or other uses.
3. **Lee County** – No tenant farming licenses will be considered on the Lee County portion of BRP.
4. **Charlotte County** – The total acreage of lands in tenant farming in the Charlotte County portion of the BRP shall not exceed 4,000 acres.
5. **Alternative Uses: Management and Alternative Use of Tenant Farm Fields Taken out of Production** - An important goal of this Plan is to identify, develop, and establish alternative revenue and funding sources.
  - a. Any current use or proposed alternative use of the fields currently licensed to tenant farming will be evaluated to ensure that degradation of the resources does not occur.
  - b. Whenever active farm fields are taken out of production, specific actions are recommended to be taken to prevent the infestation of these fields by nuisance invasive plants, especially non-native plants. Agricultural lands left fallow can easily become infested with non-native invasive plants.
  - c. Cattle grazing has been demonstrated to be a cost-effective way to manage improved pasture on conservation land while that land awaits restoration to native communities. Without grazing, the land is more likely to be invaded by non-native species and oak shrubs that rapidly convert the land to a community type that is not conducive to prescribed fire. Cattle grazing on public conservation

lands help prevent undesirable outcomes while providing revenue to assist with land management activities.

- d. There are a variety of options for uses of these lands, including restoration to native communities, continuation as agricultural fields under the direct management of BRP, conversion to improved pasture for cattle grazing, raising native seed for environmental restoration projects, and conversion to new agricultural enterprises such as native plant nurseries, bio fuels, cellulose, or forestry plantation.

#### **G. Irrigation, Fertilization, and Pest Management Practices**

The FFS will follow the minimum applications as outlined in agreements for tenant farming and any applicable BMP's for specific crops. Any tenant farming will be subject to applicable BMP's.

Pesticide management strategies are also part of the plan. Integrated Pest Management (IPM) and precision agriculture such as rotational spraying have allowed the ranch to reduce the number of pesticide applications.

#### **H. Other Agricultural Practices**

For all agricultural endeavors, the FFS will follow any applicable BMP's for specific crop.

1. Apiary – There is an apiary operation present on BRP for honey production and harvesting and in some locations to provide pollination services for tenant farmers. Management of apiaries is a common practice on public conservation lands. The combination of flatwoods communities being restored through the potential of implementing all-season fire, causing an increase in native flowering plants, and potential new markets for honey on neighboring property will produce conditions on BRP for continued, and possibly enhanced, apiary operations.

#### **I. Field Rotations**

In addition to cattle grazing, Babcock Ranch Preserve has raised fruit and vegetable crops and low-end sod in a range of periodic rotations, determined according to type of crop, with the cattle pastures. For instance, sod crops are harvested when appropriate prior to new farm leases. The watermelon production on BRP provides a seven-year crop rotation cycle that will potentially provide sod harvesting on a particular field every seven years.

Engineered field drainage systems help to minimize soil erosion, while the planting of cover crops reduces wind erosion. Pasture rotation is a major component of the ranch's soil conservation program. All farm fields are converted to pasture for cattle grazing following the termination of a farm lease.

Pasture-grass sod may be harvested in improved pasture areas as part of ongoing soil stabilization and rotation of grasses for pasture maintenance, provided that no more than twenty percent (20%) of the improved pasture areas are harvested in any one calendar year. Please see Table 7, below, for more information regarding Fruit and Vegetable Crop-Grazing-Sod Harvest Rotation details.

**Table 7: Fruit and Vegetable Crop-Grazing-Sod Harvest Rotation**

Activity	Action
Cultivate watermelons	The pasture is prepared for planting in fall. Fruit and vegetable crops are harvested in spring. Fields are disked.
Plant and manage pasture	Fields are planted with Bahia grass. Field is left to grow and cattle may graze on it for a short time (flash grazing) depending upon condition.
Cattle grazing	Cattle are grazed on the pasture with alternating periods of rest. Specific scheduling is at the discretion of the ranch manager.
Sod harvest	Sod is harvested and marketed to the “low-end” sod market (sod for highway medians and other similar uses). Following sod harvest the field is prepared for fruit and vegetable planting.

**IX. Lee County**

- A. Agreement between Lee County and the State of Florida (See Exhibit AC)**
- B. Timber Practices** – Timber harvesting on the Lee County portion of BRP will be limited to salvage operations or those activities necessary for forest health improvement only, as stated in the Agreement between Lee County and the State of Florida Department of Agriculture and Consumer Service, Florida Forest Service, dated XX XX, 2015 (Exhibit AC). FFS may enter into agreements with third parties to implement the Ten-Year Land Management Plan or to subcontract day-to-day management responsibilities upon the property to private consultants or contractors, or governmental organizations and agencies consistent with the Ten-Year Land Management Plan. The FFS shall retain all revenue generated from the Lee County portion of BRP. Lee County, or its duly authorized agents, shall have the right to inspect the FFS activities to ensure consistency with the Ten-Year Land Management Plan.
- C. Tenant Farming** – No tenant farming licenses extensions on the Lee County portion of BRP.
- D. Hunting** – Hunting activities on the Lee County portion of BRP is pursuant to the Hunt MOA between FWC and Lee County. Please see Exhibit AG.

**Comment [d6]:** Cat– waiting on Lee County sign-off

**Comment [d7]:** Cat will insert date once Lee County signs off

**X. References**

Division of Historical Resources. Revised 2013. Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Lands. Department of the State, Division of Historical Resources. Tallahassee, Florida.

Florida Department of Agriculture and Consumer Services. Revised 2008. Silviculture Best Management Practices (BMPs) for Florida. Florida Department of Agriculture and Consumer Services, Florida Forest Service.

Florida Department of Agriculture and Consumer Services. Revised 2004. State Forest Handbook. Florida Department of Agriculture and Consumer Services, Florida Forest Service.

Florida Natural Areas Inventory (FNAI). 2010. Guide to the natural communities of Florida: 2010 edition. Florida Natural Areas Inventory, Tallahassee, Florida.

Babcock Ranch Ecological Inventories. Final reports to Florida Fish and Wildlife Conservation Commission. May 2008. Florida Natural Areas Inventory, Tallahassee, Florida.

#### **XI. Glossary of Abbreviations**

ARC	Acquisition and Restoration Council
BMP	Best Management Practice
BRC	Babcock Residential Community
BRP	Babcock Ranch Preserve
BWWMA	Babcock-Webb Wildlife Management Area
CARL	Conservation and Recreation Lands
CREW	Corkscrew Regional Ecosystem Watershed
dbh	diameter at breast height
DEP	Department of Environmental Protection
DOS - DHR	Department of State, Division of Historical Resources
DRP	Division of Recreation and Parks
FCWMA	Fisheating Creek Wildlife Management Area
FDACS	Florida Department of Agriculture and Consumer Services
FFS	Florida Forest Service
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
MOA	Memorandum of Agreement
NWR	National Wildlife Refuge
NRCS	Natural Resources Conservation Service
OALE	Office of Agricultural Law Enforcement
OFW	Outstanding Florida Water
OHV	Off-Highway Vehicle
RCW	Red-cockaded Woodpecker
SFWMD	South Florida Water Management District
TIITF	Board of Trustees of the Internal Improvement Trust Fund
UF/IFAS	University of Florida/ Institute of Food and Agricultural Sciences
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area
WMD	Water Management District