

TEN-YEAR LAND MANAGEMENT PLAN

FOR THE

POINT WASHINGTON STATE FOREST

WALTON COUNTY



PREPARED BY

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

FLORIDA FOREST SERVICE

APPROVED ON

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
POINT WASHINGTON STATE FOREST



Approved by:

A handwritten signature in black ink, appearing to read "Jim Karels", written over a horizontal line.

Jim Karels, Director
Florida Forest Service

6/6/2015

Date

**TEN-YEAR LAND MANAGEMENT PLAN
POINT WASHINGTON STATE FOREST**

TABLE OF CONTENTS

Land Management Plan Executive Summary 1

I. Introduction 2

 A. General Mission and Management Plan Direction 2

 B. Past Accomplishments 3

 C. Goals and Objectives for the Next Ten Year Period 3

II. Administration Section 8

 A. Descriptive Information 8

 1. Common Name of Property 8

 2. Legal Description and Acreage 8

 3. Proximity to Other Public Resource 8

 4. Property Acquisition and Land Use Considerations 9

 B. Management Authority, Purpose and Constraints 9

 1. Purpose for Acquisition/Management Prospectus 9

 2. Degree of Title Interest Held by the Board 10

 3. Designated Single or Multiple-Use Management 10

 4. Revenue Producing Activities 10

 5. Conformation to State Lands Management Plan 11

 6. Legislative or Executive Constraints 11

 7. Aquatic Preserve/Area of Critical State Concern 11

 C. Capital Facilities and Infrastructure 11

 1. Property Boundaries Establishment and Preservation 11

 2. Improvements 11

 3. On-Site Housing 12

 4. Operations Infrastructure 12

 D. Additional Acquisitions and Land Use Considerations 13

 1. Alternate Uses Considered 13

 2. Additional Land Needs 13

 3. Surplus Land Assessment 13

 4. Adjacent Conflicting Uses 13

 5. Compliance with Comprehensive Plan 14

 6. Utility Corridors and Easements 14

 E. Agency & Public Involvement 15

 1. Responsibilities of Managing Agencies 15

 2. Law Enforcement 15

 3. Public and Local Government Involvement 16

 4. Volunteers 16

 5. Friends of Florida State Forests 16

III. Archaeological and Cultural Resources and Protection 17

 A. Past Uses 17

 B. Archaeological and Historical Resources 17

 C. Ground Disturbing Activities 17

 D. Survey and Monitoring 17

IV. Natural Resources and Protection 18

 A. Soils and Geologic Resources 18

 1. Resources 18

 2. Soil Protection 18

 B. Water Resources 18

1. Hydrological Resources.....	18
2. Water Classification	19
3. Water Protection.....	19
4. Wetlands Restoration.....	19
5. Hydrological Monitoring.....	19
C. Wildlife Resources	19
1. Rare, Threatened, or Endangered Species	19
2. Florida Natural Areas Inventory.....	21
3. Florida Fish and Wildlife Conservation Commission	22
4. Game Species and Other Wildlife	22
5. Native Groundcover	22
6. Survey and Monitoring.....	23
D. Sustainable Forest Resources	25
E. Beaches and Dune Resources	25
F. Mineral Resources	25
G. Unique Natural Features and Outstanding Native Landscapes	25
H. Research Projects/Specimen Collection.....	25
I. Ground Disturbing Activities	26
V. Public Access and Recreation.....	26
A. Existing Recreational Opportunities	27
1. Public Access and Roads.....	27
2. Trails.....	27
B. Planned Recreational Opportunities.....	27
C. Hunter Access	28
D. Education	28
VI. Habitat Restoration & Management Practices	28
A. Prescribed Fire	28
1. Prescribed Burning Plan.....	28
2. Fire Return Intervals.....	29
3. Community Outreach and Education	29
4. Cooperation with DRP, Walton County, and Landowners	30
B. Wildfires, Prevention, Fire Strategies	30
1. Suppression Strategies.....	31
2. Smoke Management	31
3. Fire Breaks and Firelines.....	31
4. Sensitive Areas	32
6. Adjacent Neighbor Contacts.....	32
7. Post-Burn Evaluations	32
C. Sustainable Forestry & Silviculture	32
1. Strategies	32
2. Silvicultural Operations.....	33
3. Forest Inventory	33
4. Timber Sales.....	34
D. Non-Native Invasive Species Control.....	34
E. Insects, Disease and Forest Health	35
F. Forest Management and Restoration Strategies.....	36
G. Use of Private Land Contractors	38
VII. Proposed Management Activities for Natural Communities / Land Cover Types	38
A. Wet Flatwoods.....	40
B. Mesic Flatwoods	42
C. Sandhill.....	44

D. Scrubby Flatwoods	46
E. Basin Swamp	48
F. Floodplain Swamp.....	49
G. Dome Swamp	51
H. Scrub.....	52
I. Salt Marsh.....	53
J. Coastal Dune Lake	54
K. Wet Prairie.....	54
VIII. References	57
IX. Glossary of Abbreviations.....	57

TABLES

Table 1. Nearby Public Conservation Land and Easements	8
Table 2. Current Easements / Corridors on PWSF.....	14
Table 3. Archaeological and Historical Sites on PWSF.....	17
Table 4. Rare, Threatened, or Endangered Species on PWSF	20
Table 5. Timber Inventory by Stand Type	33
Table 6. Pine Timber Harvest Sustainability	34
Table 7. Non-Native Invasive Species Occurring on PWSF	35
Table 8. Habitat Conditions and Management / Restoration Strategies.....	37
Table 9. Natural Communities Found on PWSF.....	39
Table 10. Altered Landcover Types Found on PWSF	40

EXHIBITS

Ten-Year Management Accomplishment Summary	Exhibit A
Location Map	Exhibit B
Acreage by Parcel.....	Exhibit C
Other Public Lands.....	Exhibit D
Management Prospectus.....	Exhibit E
Optimal Management Boundary Map	Exhibit F
Compliance with Local Comprehensive Plan	Exhibit G
2005 & 2010 Land Management Review Reports	Exhibit H
State Forest Management Plan Advisory Group Summary	Exhibit I
Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands	Exhibit J
Soil Map & Descriptions.....	Exhibit K
Water Resources / Monitoring Well Maps.....	Exhibit L
Florida Natural Areas Inventory Managed Area Element Summary	Exhibit M
Florida Fish and Wildlife Conservation Commission Response	Exhibit N
Wildlife Species	Exhibit O
Recreation and Facilities Map.....	Exhibit P
Roads Map	Exhibit Q
Non-Native Invasive Plant Map.....	Exhibit R
Historic Natural Communities Map	Exhibit S
Current Natural Communities Map.....	Exhibit T
Forest Management / Restoration – Priority Levels.....	Exhibit U
PWSF Budget.....	Exhibit V
Fire History Graph	Exhibit W
Correspondence on Biological Observations	Exhibit X
Arthropod Control Plan.....	Exhibit Y

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services, Florida Forest Service
 COMMON NAME: Point Washington State Forest
 LOCATION: Walton County
 ACREAGE TOTAL: 15,407.35 acres

<i>Historical Natural Communities</i>	<i>Acreage</i>	<i>Historical Natural Communities</i>	<i>Acreage</i>
Wet Flatwoods	3,816	Scrubby Flatwoods	578
Mesic Flatwoods	3,804	Dome Swamp	363
Sandhill	2,714	Scrub	110
Floodplain/Basin Swamp	2,650	Salt Marsh	38
Wet Prairie	939	Coastal Dune Lake	12

LEASE/MANAGEMENT AGREEMENT NUMBER: #3972
 USE: Single ___ Multiple X

MANAGEMENT AGENCY

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

RESPONSIBILITY

General Forest Resource Management
 Wildlife Resources & Laws
 Water Resource Protection & Restoration
 Historical & Archaeological Resource Management

DESIGNATED LAND USE: Multiple-use State Forest

SUBLEASES: None

ENCUMBRANCES: None Known

TYPE ACQUISITION: State Forest – Fee Simple

UNIQUE FEATURES: Old Growth Longleaf Pine Stands, Coastal Dune Lake and Wet Prairies

ARCHAEOLOGICAL/HISTORICAL: Nine archeological sites, including two aboriginal cemeteries

MANAGEMENT NEEDS: Adequate funding for recreation, reforestation, boundary surveying, road maintenance, listed species survey, and ecosystem restoration. Continued efforts to increase fire frequencies on pyrogenic communities

ACQUISITION NEEDS: See Optimal Management Boundary Map (Exhibit F).

SURPLUS LANDS/ACREAGE: None at this time.

PUBLIC INVOLVEMENT: Management Plan Advisory Group and a Public Hearing, and the Acquisition and Restoration Council public hearing.

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

ARC Approval Date: _____ BTITF Approval Date: _____

Comments: _____

I. Introduction

Point Washington State Forest (PWSF) is located in the southern end of Walton County, Florida. It sits south of the Choctawhatchee Bay and north of the Gulf of Mexico. The forest is approximately 9 miles south of the town of Freeport on U.S. Highway 98. PWSF is comprised of one tract; however the western edge of the forest is highly fragmented, making management a challenge. This state forest was acquired as part of the South Walton County Ecosystem Conservation and Recreation Lands project. The forest offers recreational opportunities such as hiking, biking, birding, fishing, hunting and horse trails. Some unique features of the forest include one of Florida's largest populations of Curtiss' sandgrass (*Calamovilfa curtissii*), Eastern Lake - which sits along the southern boundary, and stands of remnant old growth longleaf pine (*Pinus palustris*) forests – which provide insight into the area's ecological history. Some of these old pines show signs of cup trenching, a technique used at the early stages of turpentine, while offering shade as hikers enjoy the Longleaf Trail System.

A. General Mission and Management Plan Direction

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

Management strategies for PWSF center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) F.S. Implementation of this concept will utilize and conserve state forest 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 forest was acquired. Multiple-use management for PWSF will be accomplished with the following strategies:

- Practice sustainable forest management for the efficient generation of revenue and in support of state forest management objectives;
- Provide for resource-based outdoor recreation opportunities for multiple interests.
- Restore and 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, and cultural resources;
- Restore, maintain and protect hydrological functions related water resources and the health of associated wetland and aquatic communities.
- To provide research and educational opportunities related to natural resource management.

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

B. Past Accomplishments

A compilation of management activities and public use on PWSF has been completed monthly and are available from the forest manager. A table has been prepared for this plan that summarizes, in numerical format, the accomplishments for each of the past ten years (Exhibit A). The table does not attempt to account for all activities on the forest, but summarizes major activities that are more readily quantifiable. It does not list the multitude of daily activities and public interactions involved in managing the forest.

Since the approval of the previous management plan in 2002, there have been many events, developments and accomplishments. Among the most noteworthy have been the following:

- The addition of the McQuage Bayou Horse Trail and Trailhead.
- Completion of the Longleaf Greenway Trailhead, including the addition of restroom and a kiosk.
- The addition of private in-holdings throughout the forest.
- Major roads throughout the forest have been hardened with rock.
- Twelve (12) culverts and five (5) road crossings were installed.
- Over 28,300 tons of timber were harvested.
- Visitation to the forest has increased significantly over the last few years. In fiscal year 2014-2015, attendance was over 65,000.
- Over 19,000 acres were prescribed burned.
- 278 miles of roads were maintained or rebuilt.
- 118 miles of boundaries were maintained and marked.
- 125 acres of non-native invasive species were treated.
- A primitive campground was installed.

C. Goals and 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 the wildfire situation during the planning period will determine the degree to which these objectives can be met. Management activities on PWSF during this management period must serve to conserve, protect and enhance the natural and historical resources and manage resource-based public outdoor recreation, which is compatible with the conservation and protection of this forest. The majority of the management operations will be conducted by the FFS, although appropriate activities may be contracted to private sector vendors. All activities will enhance the property's natural resource or public recreational value.

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 are achievable within a two year planning period, and long-term goals are achievable within a ten year planning period. Objectives are listed in priority order for each goal. Cost estimates are provided below for FFS services

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.

➤ **GOAL 1: Sustainable Forest Management**

Objective 1: Continue to update and implement a Five-Year Silviculture Management Plan including reforestation, harvesting, prescribed burning, restoration, and timber stand improvement activities and goals. (Ongoing Goal)

Performance Measures:

- Complete annual updates of Five Year Silviculture Management Plan
- Continued implementation of Silviculture Management Plan (Acres treated)

Objective 2: Continue to implement the FFS process for conducting stand descriptions and forest inventory including a GIS database containing forest stands, roads & other attributes (including but not limited to: threatened & endangered species, archaeological resources, exotic species locations, historical areas, and history areas). (Ongoing Goal)

Performance Measures:

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

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

Objective 1: In order to safely integrate human use into PWSF, implement a 5-Year Outdoor Recreation Plan and update annually. (Ongoing Goal)

Performance Measure: Completion of the 5-Year Outdoor Recreation Plan and update annually.

Objective 2: Maintain existing public access and recreational opportunities to allow for a recreational carrying capacity of 350 visitors per day. (Ongoing Goal)

Performance Measure: Number of visitor opportunities per day.

Objective 3: Develop additional public access and recreational opportunities to expand the recreational carrying capacity up to 450 visitors per day. (Long Term Goal)

Performance Measure: Number of visitor opportunities/day.

Objective 4: Continue to engage the liaison panel which consists of a cross section of local residents, community leaders and special interest group representatives (canoe vendors, hunters, trail hikers, military, organized horse groups, etc.), environmental groups, and other public / private entities to establish communication and seek constructive feedback regarding the management of JMBSF. (Ongoing Goal)

Performance Measure: Liaison group continues to meet.

➤ **GOAL 3: Habitat Restoration and Improvement**

Objective 1: Following efforts to apply dormant / growing season fire, PWSF staff will coordinate with FFS State Forest Ecologist to develop appropriate protocols to assess sites with an unacceptable level of groundcover and/or which have experienced a poor fire response from past efforts to conduct prescribed burns, in order to develop appropriate strategies to improve groundcover on the forest. The extent and success of

these efforts will be dependent on availability of specific contract funding, assistance from Florida Fish and Wildlife Conservation Commission (FWC) biologists, and/or the support of non-profit or volunteer organizations. Prioritize sites where the native ground layer has been heavily impacted from historical land use and where restoration is economically feasible. (Long Term Goal)

Performance Measures:

- Priorities and protocols developed.
- Groundcover evaluations completed.
- If funded, acres of restoration improvements attempted

Objective 2: Work with FFS State Forest Ecologist to further assess historic and current natural community boundaries and management needs through contract with Florida Natural Areas Inventory. Develop a specific assessment approach for identifying at-risk wet prairies for increased management such as mechanical treatment and/or prescribed fire to increase imperiled species. (Long Term Goal)

Performance Measures:

- Determination of need completed for further natural community survey work.
- Field assessment approach developed.
- Natural community mapping updates completed.

➤ **GOAL 4: Fire Management**

Objective 1 Continue to update and implement the Five-Year Prescribed Burning Management Plan. (Ongoing Goal)

Performance Measure: Completion of the annual updates of the Five-Year Prescribed Burning Management Plan.

Objective 2: The PWSF contains approximately 11,821 mapped acres of fire dependent natural communities and 3,203 acres of wetland inclusions. At present, approximately 10,750 acres of the forest burn units have experienced repeat prescribed burns and are considered to be in fire rotation. In order to maintain an average fire return interval of 3 to 4 years across the forest, approximately 2,700 – 3,600 acres will be prescribed burned annually, on average. Continue efforts to increase the amount of land considered to be within the desired fire rotation by establishing a fire regime on an additional 3,600 acres of the forest's Priority Level A sites. (Ongoing Goal/Long Term Goal)

Performance Measures:

- Average number of acres burned each year. (Ongoing)
- Number of acres maintained within target fire return interval. (Ongoing)
- Number of additional 3,600 acres with fire regime established (Long-Term)

Objective 3: Utilize both dormant and growing season prescribed fire to reduce fuel levels and enhance restoration of native groundcover. (This addresses 2010 Land Management Review Team Recommendation #1) (Long Term Goal)

Performance Measure: Number of acres burned in growing and dormant season.

Objective 4: Reduce the threat of wildfire within the Wildland/Urban interface on PWSF and the surrounding community through a comprehensive mitigation strategy that

includes evaluating vegetative fuels near residential areas and identifying potential fuel reduction projects.

Performance Measures:

- Evaluation complete.
- Should the evaluation determine that fuel reduction is necessary, number of projects underway.

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

Objective 1: In cooperation with FWC, incorporate a Wildlife Management Strategy that addresses fish and wildlife species for PWSF, including imperiled species and associated management prescriptions for their habitats. (Long Term Goal)

Performance Measures:

- Imperiled species management strategy completed.
- Baseline listed and rare species list completed for PWSF.

Objective 2: In cooperation with FWC and coordination with the FFS State Forest Ecologist, develop appropriate imperiled species survey (plants and animals) and monitoring protocols based on site-specific occurrences, population data, and sustainability potential where survey protocols do not already exist. The extent and success of these efforts will be dependent on availability of specific contract funding, assistance from FWC biologists, and/or support on non-profit or volunteer organizations. (Long Term Goal)

Performance Measure: Number of listed and rare species 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. (Long Term Goal)

Performance Measure: Number of species for which monitoring is ongoing.

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

Objective 1: Continue to follow and update the Five-Year Ecological Plan for PWSF to locate, identify, prevent, and control non-native invasive plant species. (Ongoing Goal)

Performance Measures:

- Total number of acres identified and successfully treated.
- Completion of the annual updates of the Five-Year Ecological Management Plan.
- Continued implementation of the Five-Year Ecological Management Plan.

Objective 2: Contact and coordinate with the FWC Upland Invasive Plant Biologist for the area and begin utilization of the FWC herbicide bank to control non-native invasive plant species. (Short Term Goal)

Performance Measures:

- Contact made with FWC Biologist.
- Herbicide bank utilized.

➤ **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: Number of recorded sites.

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.

Objective 3: Maintain at least one qualified staff member as an archaeological site monitor. (Ongoing Goal)

Performance Measure: Number of local staff trained.

Objective 4: Increase the number of staff trained by DHR as archaeological site monitors. (Long Term Goal)

Performance Measure: Number of local staff trained increases.

➤ **GOAL8: Hydrological Preservation and Restoration**

Objective 1: Conduct or obtain a site assessment/study to identify potential hydrology restoration needs. (Short Term Goal)

Performance Measure: Assessment conducted.

Objective 2: Protect water resources during management activities through the implementation of Silvicultural Best Management Practices (BMPs) for public lands. (Ongoing Goal)

Performance Measure: Compliance with state BMPs.

Objective 3: Close, rehabilitate, or restore those roads and trails that have evidence of erosion into surrounding water bodies causing alterations to the hydrology. (Short Term Goal)

Performance Measure: Total number of roads and trails closed, rehabilitated, or restored.

➤ **GOAL9: Capital Facilities and Infrastructure**

Objective 1: Construct a new permanent forest headquarters on site, complete with office, shop, and storage capabilities. (Short Term Goal)

Performance Measure: Completion of construction of on-site headquarters facility.

Objective 2: PWSF staff along with help from volunteers and/or user groups will continue maintenance of: eight primitive camp sites at Eastern Lake Campground; three parking areas / trailheads; 27 miles of trails; and 57 miles of primary, secondary and tertiary roads. (Ongoing Goal)

Performance Measure: The number of existing facilities, miles of roads, and miles of trails maintained.

Objective 2: Annually update the Five-Year Boundary Survey and Maintenance Plan for the PWSF and continue maintenance of 146 miles of state forest boundary. The entire

boundary will be reworked every five years including harrowing, reposting signage and repainting boundary trees. (Ongoing Goal)

Performance Measures:

- Update of the Five-Year Boundary Survey and Maintenance Management Plan completed annually.
- Continued implementation of the Five-Year Boundary Survey and Maintenance Management Plan.
- Annual maintenance of the state forest boundary completed.

Objective 3: Annually update the Five-Year Road and Bridge Management Plan and continue maintenance of roads and bridges at PWSF. (Ongoing Goal)

Performance Measures:

- Completion of the annual updates of the Five-Year Road and Bridges Management Plan.
- Continued implementation of the Five-Year Road and Bridges Management Plan.

II. Administration Section

A. Descriptive Information

1. Common Name of Property

The common name of the property is the Point Washington State Forest (PWSF). It is named after a small sawmill community at the eastern end of Choctawhatchee Bay founded in the late 19th century.

2. Legal Description and Acreage

The PWSF is comprised of one tract totaling 15,407.35 acres in Walton County, Florida, see Exhibit B. It is located south of Choctawhatchee Bay, and makes up the majority of the South Walton Community. Highway 98 runs east and west, splitting the forest. The legal description is found in lease agreement number 3972. The property is located in all or part of Sections 3S – 18W, 3S – 19W, 3S – 20W, 2S – 19W, 2S – 20W and 2S – 21W. Exhibit C lists the PWSF acreage by parcel and funding source.

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (BOT) as part of PWSF is on record at the PWSF Forestry Station office, Florida Department of Environmental Protection (DEP), and the FFS state office in Tallahassee.

3. Proximity to Other Public Resources

Lands managed by state, federal or local government for conservation of natural or cultural resources that are located within approximately 20 miles of the PWSF are included in Exhibit D as well as the table below:

Table 1. Nearby Public Conservation Land and Easements

TRACT	AGENCY	DISTANCE
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TRACT	AGENCY	DISTANCE
Grayton Beach State Park	DEP	Adjacent S
Topsail Hill State Preserve	DEP	Adjacent SW
Deer Lake State Park	DEP	Adjacent SE
Eden Gardens State Park	DEP	Adjacent NE
Choctawhatchee River WMA	NFWWMD	1 mile NE
Choctawhatchee River Delta Preserve	TNC	2 miles NE
Camp Helen State Recreation Area	DEP	5 miles E
Eglin Air Force Base	DOD	6 miles NW
Henderson Beach State Recreation Area	DEP	8 miles W
Pine Log State Forest	FFS	10 miles NE
Rocky Bayou State Recreation Area	DEP	10 miles NW
Naval Coastal System Center	DOD	20 miles E

DEP – FL Department of Environmental Protection DOD – U.S. Department of Defense
FFS – Florida Forest Service NFWWMD- Northwest Florida Water Management District
TNC – The Nature Conservancy

4. Property Acquisition and Land Use Considerations

The Board of Trustees of the Internal Improvement Trust Fund (BOT) via its agent, The Nature Conservancy, acquired 18,000 acres from the Resolution Trust Corporation (RTC) on May 19, 1992 through a Special Master’s Deed at a public sale. A total of 15,181 acres of this land became the Point Washington State Forest. The remaining 2,819 acres was assigned to DEP’s Division of Recreation and Parks (DRP) for management in the Florida Park System. Funding was provided through the Presentation 2000 Program and the property was ranked through the CARL program process.

Since the original 1992 purchase from RTC, a dozen acquisitions, multiple donations and exchanges, receipt of Murphy Act land and court judgment that have added approximately 490 acres to PWSF. The most recent acquisition was a purchase of 9.43 acres in 2012. During the same period of time approximately 263 acres have been removed from the PWSF lease as the result of exchanges, a settlement agreement, and transfers to Walton County and to the Florida Division of Recreation and Parks. At this time, the current lease is for 15,407.35 acres.

B. Management Authority, Purpose and Constraints

1. Purpose for Acquisition/Management Prospectus

Acquisition of PWSF began in 1992 and utilized mitigation, exchange, Murphy Act, P2000, and Florida Forever funding. The Forest was acquired as part of the South Walton County Ecosystem Conservation and Recreation Lands project (Exhibit E). The primary goals of the project are to: 1) conserve a part of this unique coast and

the forests behind it, linking three state parks; 2) protecting several rare plants and rare animals such as the Choctawhatchee beach mouse and red-cockaded woodpecker; and 3) providing residents and tourists a scenic area in which to enjoy many recreational activities, ranging from hunting and fishing to hiking, picnicking, and sunbathing.

The Florida Forest Service (FFS), Department of Agriculture and Consumer Services (DACS) designated PWSF for multiple-use management. The FFS is the lead-managing agency as stated in Management Lease Number 3972 (DACS Contract Number 2039) with the Florida Fish and Wildlife Conservation Commission (FWC) listed on the Lease as a Cooperating Agency. FWC acts as a technical advisor on this tract in addition to enforcing wildlife regulations and overseeing the hunts that take place. The Division of Historical Resources (DHR) is the agency responsible for any historical and archaeological sites.

2. Degree of Title Interest Held by the Board

The Board of Trustees of the Internal Improvement Trust Fund holds fee simple title to the property.

3. Designated Single or Multiple-Use Management

The PWSF is managed under a multiple-use concept by the FFS, under the authority of Chapters 253 and 589, Florida Statutes. The FFS is the lead managing agency as stated in Management Lease Number 3972.

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, or 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 the relative values of the various resources. Local demands, acquisition objectives, and other factors influence the array of uses that are compatible with and allowed on any specific area of the forest. This management approach is believed to provide for the greatest public benefit, by allowing compatible uses while protecting overall forest health, native ecosystems and the functions and values associated with them.

4. Revenue Producing Activities

Numerous activities on the state forest 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 forest. Current and potential revenue producing activities for PWSF include, but are not limited to: timber harvest, biomass harvest, hiking, biking, horseback riding, paddling, primitive camping and apiaries.

- *Recreation* - Honor fees are collected for all day use activities and camping. Other recreation receipts include commercial vendor permits, annual passes, and palmetto drupe collection permits, if allowed. For Fiscal Year 2014-15, recreation revenue was \$11,081.

- *Timber/Biomass Harvests* - Amounts received from timber sales vary each year, but as a general rule, timber sales on PWSF are infrequent. Biomass harvests may be held depending on future market prices.
- *Apiaries* – As of Fiscal Year 2015/16, there is one special use permit issued (six sites) for apiary use on the state forest.

5. Conformation to State Lands Management Plan

Management of the forest 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

There are no known legislative or executive constraints specifically directed towards the PWSF.

A Settlement Agreement on a portion of Point Washington State Forest land was executed on June 5, 1992 as part of the Resolution Trust Corporation’s sale of lands.

7. Aquatic Preserve/Area of Critical State Concern

This area is not within an aquatic preserve or an area of critical state concern, nor is it in an area under study for such designation.

C. Capital Facilities and Infrastructure

1. Property Boundaries Establishment and Preservation

The PWSF boundary lines (146 miles total) are managed by state forest personnel in accordance with the guidelines stated in Chapter 10 of the State Forest Handbook.

2. Improvements

Infrastructural improvements on PWSF include (see Exhibit P):

- | | |
|------------------------------------------|-------------------|
| • Headquarters office (old FFS homesite) | • Ranger Room |
| • Ranger Homesite | • Storage shed |
| • Pole barn | • Fire tower |
| | • Well pump house |

Public recreational improvements include:

- Eastern Lake Trailhead / Parking Area with a restroom and picnic tables.
- Longleaf Greenway Trailhead / Parking Area with a restroom and kiosk.
- McQuage Bayou Trailhead / Parking Area with kiosks and a pavilion with pitcher pump.
- 13 trail bridges and 11 kiosks.
- Eight primitive camping sites with restrooms.

Another home site on the property has been updated and is now serving as onsite housing for employees. A discussion was held in the past with South Walton Fire District (SWFD) to build a joint forestry station / forest headquarters office, but due

to recent economic constraints, SWFD has to date been unable to partner with FFS on this project.

3. On-Site Housing

There is currently one occupied ranger house onsite. Future plans call for returning the office into housing quarters. FFS may also establish onsite housing (mobile / manufactured home) on PWSF if deemed necessary to alleviate security and management issues. The need and feasibility will be evaluated and established, if considered appropriate, by the Chipola Forestry Center Manager and approved by the FFS Director.

Prior to the occurrence of any ground disturbing activity for the purpose of establishing onsite 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 with the possibility of more than one onsite housing location occurring if considered necessary by the Chipola Forestry Center Manager and approved by the FFS Director.

4. Operations Infrastructure

a. Budget

The total annual budget for Fiscal Year 2014-2015 is \$353,732. This amount includes salaries and expenses. A summary budget is contained in Exhibit V. This budget allows for work to be completed across the forest and any small unknowns that may arrive. However, this operating budget does not allow for major road work, reforestation, or any large projects that may need attention. Implementation of any of the activities within this management plan is contingent on availability of funding, other resources, and other statewide priorities.

b. Equipment

To carry out the resource management work on the state forest as well as to maintain forest improvements such as trails, roads and facilities the following equipment has been assigned or is immediately available for work on PWSF:

- Front End Loader
- Road Grader
- Farm Tractor
- Two Overhead Pickups
- Two Tractor/Plow Units (Chipola Forestry Center Operations)
- Type VI Engine (Chipola Forestry Center Operations)

Additional equipment can be used from Pine Log State Forest and other resources throughout the Chipola Forestry Center, if needed.

c. Utilities

The following utilities serve the public and forest staff:

- Electric services for PWSF is provided by Chelco
- Water and sewage is provided by Regional Utilities

- Telephone service is provided by Florida Department of Management Services (DMS)

d. Staff

Eight staff members are currently assigned to PWSF, including one Forest Area Supervisor, one Forester, one OPS Park Ranger, two Senior Forest Rangers, and three Forest Rangers. All staff assigned to PWSF have offices at 5865 Highway 98 East, Santa Rosa Beach, Florida 32459.

The Forestry Operations Administrator located at Panama City will work to achieve the goals outlined in this management plan. Day-to-day resource management (timber cruising, planning, etc) is the responsibility of the Forester. Day-to-day forest operations (road maintenance, prescribed burning, etc) are the responsibility of the FFS fire control personnel, under the direction of the Walton Forest Area Supervisor at PWSF. Biological support is coordinated through the FFS State Forest Ecologist.

D. Additional Acquisitions and Land Use Considerations

1. Alternate Uses Considered

No alternate uses are being considered at this time. Alternate uses will be considered as requests are made and will be accommodated as appropriate if they are determined to be compatible with existing uses and with the management goals and objectives of the forest. Uses determined as incompatible include but are not limited to: water resource development projects, water supply projects, storm-water management projects, pivot irrigation, sewage treatment facilities, linear facilities, sustainable agriculture, off highway vehicle use, dumping, mining, and oil well stimulation (e.g. hydraulic fracturing/fracking), or as determined by law, regulation or other incompatible uses as described elsewhere in the management plan.

2. Additional Land Needs

Purchasing of in-holdings within the PWSF identified in the optimal management boundary (Exhibit F) would facilitate restoration, protection, maintenance, and management of the resources on PWSF.

3. Surplus Land Assessment

Over the past several years the FFS has not had the ability to consolidate its managed lands due to limited land acquisition monies. With the inability to close the “holes” in the forest, the FFS is actively evaluating outlying state owned parcels that may be suitable exchanges for the privately held in-holdings. Should these exchanges succeed, it would form a more manageable boundary for species restoration, prescribed fire management, and public access.

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 will meet with adjacent land owners and maintain liaison with those landowners to ensure that any conflicting future land uses may be readily identified and addressed.

FFS will cooperate with adjacent property owner(s), prospective owner(s), or prospective developer(s) to discuss methods to minimize negative impacts on management, resources, facilities, roads, recreation, etc., and discuss ways to minimize encroachment onto the forest.

The majority of PWSF boundary is surrounded by homes and well-traveled roads, making certain management activities very difficult. The western portion of the forest is highly fragmented, ranging from 10 to 40-acre blocks. This fragmentation negatively impacts management operations such as prescribed burning and timber management. This fragmentation also creates more boundary lines which can be difficult to maintain. Encroachment is a constant issue that has to be monitored closely. The dumping of household materials is also a continuing problem on the forest.

5. Compliance With Comprehensive Plan

This plan was submitted to the Board of County Commissioners in Walton County for review and compliance with their local comprehensive plan (Exhibit G).

6. Utility Corridors and Easements

The FFS does not favor the fragmentation of natural communities with utility lines - consequently, easements for such uses will be discouraged to the greatest extent practical. The FFS does not consider PWSF suitable for any new linear facilities. Current linear facility easements on PWSF are listed in Table 3 below.

Table 2. Current Easements / Corridors on PWSF

Lessee	Name	Type	Acres	Term (years)	Effective Date	Expires
Walton County School	Future Elem. School	County	0.62	50	3/18/2008	3/17/2058
Mad-Destin, LLC	Mad-Destin, LLC	Private	0.18	50	9/1/1995	8/31/2045
Chelco	Choctawhatchee Electric Coop	Private	5.81	50	7/15/1998	2/14/2048
Alabama Elec. Co	Alabama Electric Co	Private	5.81	50	7/15/1998	7/14/2048
FL Community Services	Sewer Force Main	Private	1.07	39	1/28/2005	9/27/2044
Pearl Morgan	Private Access	Private	0.18	99	3/2/2006	03/02/2105
Junior Food Stores	Drainage Area	Private	0.03	50	12/31/2009	12/2/2059

Lessee	Name	Type	Acres	Term (years)	Effective Date	Expires
Powersouth & Chelco	Electric Substation	Private	2	50	7/15/2009	7/14/2059
Powersouth & Chelco	Electric Substation	Private	1.81	50	7/15/2009	7/14/2059
Powersouth & Chelco	Electric Trans Line	Private	3.12	50	7/15/2009	7/14/2059
FDOT	SR30 (US 98) Row Easement	State	79.32		11/6/2000	
FDOT	SR 30 (US 98) Peach Creek	State	25.97	99	11/6/2000	11/06/2099
FDOT	Highway 331	State	4.48	99	1/7/2008	01/07/2107
FDOT	Temporary	State	0.01	5	1/2/2008	1/1/2013

When such encroachments are unavoidable, previously disturbed sites will be the preferred location. The objectives, when identifying possible locations for new linear facilities, will be to minimize damage to sensitive resources (e.g., listed species and archaeological sites), to minimize habitat fragmentation, and to limit disruption of management activities and resource-based multiple use activities, such as recreation.

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 management and multiple use activities. The FFS will further encourage the use of underground cable where scenic considerations are desirable. Easements for such utilities are subject to the review and approval of the BOT. Requests for linear facility uses will be handled according to the Governor and the Cabinet's linear facilities policy and coordinated through the State Forest Ecologist.

E. Agency & Public Involvement

1. Responsibilities of Managing Agencies

FFS is the lead managing agency, responsible for overall forest management and public recreation activities, as stated in Board of Trustees Management Lease Number #3972. Pursuant to the management lease, the lead managing agency may enter into further agreements of sub-leases on any part of the forest. The Florida Fish and Wildlife Conservation Commission (FWC) has law enforcement responsibilities, enforces hunting regulations, cooperatively sets hunting season dates with FFS, and conducts other wildlife management activities with input from FFS. FFS will cooperate with the Department of State, Division of Historical Resources (DHR) regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, Florida Statutes. DHR will be notified prior to the initiation of any ground disturbing activities by the FFS or any other agency involved with the forest. The Northwest Florida Water Management District (NFWFMD) 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 FWC under an agreement with FFS. Rules governing the use of PWSF are stated in Chapter 5I-4 of the Florida Administrative Code. FWC will enforce fish and wildlife regulations and provide assistance in enforcing state forest rules. The Office of Agricultural Law Enforcement (OALE) will assist with open burning and wildfire investigations as needed. Additional assistance is provided by the Walton County Sheriff's Offices, as needed.

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

3. Public and Local Government Involvement

This plan has been prepared by FFS and will be carried out primarily by that agency. The FFS responds to public involvement through direct communication with individuals, user groups and government officials.

The FFS responds to public involvement through its 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 December 2005 and August 2010 (Exhibit H). The review team's recommendations were incorporated into this plan as appropriate.

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

4. Volunteers

Volunteers are important assets to PWSF. Depending upon the type of volunteer service needed, volunteer activities may be one-time events, long-term projects or recurring operational task. Volunteers have assisted with trail maintenance, food plots, inventory, cleaning up dump sites and road maintenance. Additional volunteer recruitment will be encouraged to assist with other state forest activities to further the FFS's mission.

5. Friends of Florida State Forests

The Friends of Florida State Forests (FFSF) is a Direct Support Organization (DSO) of the Florida Forest Service. The FFSF supports recreation and reforestation projects on Florida's state forests. FFSF is an organization established by Florida statute that supports programs within Florida's state forests and is governed by a board of directors representing all areas of the state. Through community support, the FFSF assists the

Florida Forest Service to expand opportunities for recreation, environmental education, fire prevention, and forest management within Florida's state forests.

III. Archaeological/Cultural Resources and Protection

A. Past Uses

St. Joe Paper Company acquired the entire property in the 1930s. It was managed for timber production. In 1986, the property was sold to a development corporation. After purchase by the development corporation, extensive timber harvesting occurred. Little or no effort was put into regeneration. The property was managed by a hunting club for quail and deer hunting. Some prescribed burning was conducted. Several of these burns escaped causing damage to the remaining natural timber and understory species. The state acquired the property and established the Point Washington State Forest in 1992.

B. Archaeological and Historical Resources

A review of information contained in the DHR's Florida Master Site file has determined that there are nine (9) known recorded sites on PWSF.

Table 3. Archaeological and Historical Sites on PWSF

SITE ID	SITE NAME	SITE TYPE
WL26	Eastern Lake	Artifact Scatter
WL32	Choctawhatchee Beach II	Village Midden
WL33	Pt. Washington Cemetery	Aboriginal Cemetery
WL52	Floyd Mound	Aboriginal Burial Mound
WL63	East Deer Lake	Artifact Scatter
WL75	Rosin Bayou West	Lithic Workshop
WL103	Camp Creek	Scatter / Possible Village
WL336	NWR3	Artifact Scatter
WL543	Little's Bayou West	Village Midden

C. Ground Disturbing Activities

Representatives of DHR and FNAI will be consulted prior to the initiation of any proposed significant ground disturbing activity 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" (Exhibit J) 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". FFS staff will review and follow the guidelines for archeological and historical site protection found in the State Forest Handbook.

D. Survey and Monitoring

Currently there are two (2) local district FFS personnel trained by DHR as archaeological site monitors. FFS will pursue opportunities for getting additional personnel trained. FFS has consulted with public lands archaeologists at DHR to determine that all nine (9) listed sites should be monitored annually. FFS field staff will monitor the listed sites to note the condition and any existing or potential threats and consult with DHR regarding any protection measures that might be required.

As information becomes available, and as staffing allows, any known archaeological and historical sites will be identified on maps to aid state forest 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. DHR trained forest staff may conduct limited monitoring activities during site disturbing activities. 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.

IV. Natural Resources and Protection

A. Soils and Geologic Resources

1. Resources

Soils information for PWSF was obtained from the Walton County Soil Surveys. For detailed descriptions of soil resources and characteristics, see Exhibit K.

2. Soil Protection

Currently there are no known soil or erosion problems present on PWSF. 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.

B. Water Resources

The water resources on PWSF (Exhibit L) perform essential roles in the protection of water quality, groundwater recharge, flood control and aquatic habitat preservation. In the interest of maintaining these valuable resource functions, state forest management personnel will work with the FFS's 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. Hydrological Resources

The PWSF contains one named creek, Peach Creek, one named lake, Eastern Lake, and portions of six named bayous: McQuage, Littles, Bowman, Churchill, Hewett,

and Mack Bayous. There are numerous small creeks and drains throughout the forest. None of these stream courses are navigable. All have been known to go dry during periods of extended drought. Approximately 30% of the PWSF land area is occupied by wetlands, with 86% of these wetlands being basin swamp.

2. Water Classification

All surface waters on PWSF are classified as Class III Surface Waters - Recreation, Propagation, and Maintenance of a Healthy Well-Balanced Population of Fish and Wildlife in accordance with Rule 62-302.400 Florida Administrative Code. All waters within the boundaries of PWSF have been designated as Outstanding Florida Waters (OFW).

3. Water Protection

Water resource protection measures, at a minimum, will be accomplished through the use of Best Management Practices (BMPs) as described in the most current version of Silviculture Best Management Practices Manual. All waterways in PWSF are designated as Outstanding Florida Waters and will be treated as such according to the guidelines in the Florida BMPs.

4. Wetlands Restoration

Soil and water resources are currently protected, maintained and restored using several practices. Culvert replacement and installation and hard surface, low water crossings are used along wetland road crossings or in areas to improve natural sheet flow. Road projects such as road closures, road removals, road shoulder and ditch maintenance and roadside seeding will also be considered for soil and water resource protection.

5. Hydrological Monitoring

The Northwest Florida Water Management District (NFWFMD) has a 610 foot well at the far eastern end of PWSF which monitors the Floridan aquifer groundwater. NFWFMD also has drilled and monitor three shallow (less than 32 feet) surficial aquifer wells located at the center and western end of the forest. See Exhibit L for the site locations of these monitoring wells. PWSF and NFWFMD cooperate whenever needed for access and information regarding any groundwater monitoring. PWSF staff is not aware of any surface water monitoring sites on the state forest.

C. Wildlife and Botanical Resources

1. Rare, Threatened, or Endangered Species

The intent of the FFS is to manage PWSF in a fashion that will minimize the potential for wildlife and botanical species to become imperiled. FFS employees continually monitor the forest for rare, threatened, or endangered species while conducting management activities. Specialized management techniques will be used, as necessary, to protect or increase endangered and threatened species and species of special concern, as applicable for both plants and animals.

Presence of listed species is based on information compiled from FNAI tracking records and FWC as well as field observations by NFWFMD and FFS. See also the FNAI Report (Exhibit M) and FWC Report (Exhibit N).

Table 4. Rare, Threatened, or Endangered Species Documented by FNAI on PWSF

Common Name	Scientific Name	Federal Status *	State Status *	FNAI Global Rank *	FNAI State Rank *
Birds					
Bald Eagle	<i>Haliaeetus leucocephalus</i>	N	N	G5	S3
Least Tern	<i>Stemula antillarum</i>	N	ST	G4	S3
Red-cockaded Woodpecker	<i>Picoides borealis</i>	LE	FE	G3	S2
Reptiles					
Eastern Diamondback Rattlesnake	<i>Crotalus adamanteus</i>	N	N	G4	S3
Green Sea Turtle	<i>Chelonia mydas</i>	LE	FE		S2
Gopher Tortoise	<i>Gopherus polyphemus</i>	N	ST	G3	S3
Leatherback Sea Turtle	<i>Dermochelus coriacea</i>	LE	FE	G2	S2
Amphibians					
Reticulated Flatwoods Salamander (page 23)	<i>Ambystoma bishop</i>	LE	FE	G2	S2
Invertebrates					
Elegant Spreadwing	<i>Lestes inaequalis</i>	N	N	G5	S2
Large Pocket Gopher Aphodius Beetle	<i>Aphodius laevigatus</i>	N	N	G3 G4	S3?
Schwarz' Pocket Gopher Ptomaphagus Beetle	<i>Ptomaphagus schwarzi</i>	N	N	G3	S3
Seminole Skipper**	<i>Hesperia attalus slossonae</i>	N	N	G3 G4 T3	S3
Small Pocket Gopher Aphodius Beetle	<i>Aphodius aegrotus</i>	N	N	G3 G4	S3?
Plants					
Cruise's Goldenaster	<i>Chrysopsis gossypina</i>	N	LE	G5T2	S2
Godfrey's Goldenaster	<i>Chrysopsis godfreyi</i>	N	LE	G2	S2
Curtiss' Sandgrass	<i>Calamovilfa curtissii</i>	N	LT	G3	S3

Common Name	Scientific Name	Federal Status *	State Status *	FNAI Global Rank *	FNAI State Rank *
Gulf Coast Lupine	<i>Lupinus westianus</i>	N	LT	G3	S3
Harper's Yellow-eyed Grass	<i>Xyris scabrifolia</i>	N	LT	G3	S3
Large-leaved Jointweed	<i>Polygonella macrophylla</i>	N	LT	G3	S3
Panhandle Spiderlily	<i>Hymenocallis henryae</i>	N	LE	G2	S2
Southern Milkweed	<i>Asclepias viridula</i>	N	LT	G2	S2
Spoon-leaved Sundew	<i>Drosera intermedia</i>	N	LT	G5	S3
White-top Pitcherplant	<i>Saccharacenia leucophylla</i>	N	LE	G3	S3
Wiregrass Gentian	<i>Gentianna penneliana</i>	N	LE	G3	S3

*** STATUS/RANK KEY**

Federal Status (USFWS): LE= Listed Endangered, LT= Listed Threatened, LT(S/A) = Listed Threatened due to similarity of appearance, SAT = Treated as threatened due to similarity of appearance, N= Not currently listed

State Status (FWC): LE= Listed Endangered, LT=Listed Threatened, LS= Listed Species of Special Concern, FT(S/A) = Federal Threatened due to similarity of appearance, SSC = Listed as Species of Special Concern by FWC.

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.

FNAI State Rank: S1= Critically Imperiled, S2= Imperiled, S3= Very Rare, S4= Apparently Secure, S#? = Tentative rank.

**Florida Listed Element Occurrences (FLEO)

2. Florida Natural Areas Inventory

The Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and significant ecological resources. FNAI has reported the following:

- a. **Element Occurrences:** The Florida Natural Inventory reports multiple documented element occurrences of rare or endangered species on or near the property [See Exhibit M]. Currently, just one federally-listed species, Reticulated Flatwoods Salamander, is listed (Please see page 23 for information regarding this species). A list of imperiled species that have in the past or are currently known to actually occur on the property are listed in Table 5, Page 19.
- b. **Likely and Potential Habitat for Rare Species:** The PWSF is located near other rare species and natural communities. Likely or having potential to occur here include approximately 50 additional wildlife and botanical species and four imperiled natural communities, including bird rookeries, sandhill upland lake, seepage slope, and coastal dune lake.
- c. **Land Acquisition Projects:** Portions of the site appear to be located within the South Walton Ecosystem Florida Forever Project of the State of Florida's Conservation and Recreation Lands Acquisition Program. (See Exhibit E)
- d. FNAI states that this property appears to be located on or very near a significant region of scrub habitat, a natural community in decline that provides important

habitat for several rare species within a small area. Additional consideration should be given to avoid and/or mitigate impacts to these natural resources and to design land uses that are compatible with these resources.

3. Florida Fish and Wildlife Conservation Commission

The Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute report several records of listed species occurrences or critical habitats within or near the state forest. This includes state and federally listed species such as the red-cockaded woodpecker, which has been observed near several parcels at the western end of the state forest [See Exhibit N].

Other findings by the FWC include:

- a. The property is adjacent to multiple Strategic Habitat Conservation Areas and multiple Prioritized Strategic Habitat Conservation Areas – particularly east of US Highway 98 at the eastern end of the state forest.
- b. The PWSF is located in areas of low to moderate Species Richness.
- c. Multiple Priority Wetlands are located throughout PWSF with higher priority (greater number of species) wetlands located at the eastern end of the forest.

This data represents only those occurrences recorded by FWC staff and other affiliated researchers. The database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species, such as gopher tortoises, is not entered into the database on a site-specific basis. Therefore, one should not assume that an absence of occurrences in our database indicates that species of significance do not occur in the area. [See Exhibit N]

4. Game Species and Other Wildlife

Wildlife management plays an important role in the management of resources on PWSF. The state forest currently makes up 15,247 acres of the Point Washington Wildlife Management Area (WMA). FWC provides cooperative technical assistance in managing the wildlife and fish populations, setting seasons, establishing bag and season limits, and overall wildlife and fish law enforcement. Many game and non-game species inhabit the various natural communities and disturbed sites found throughout the forest (Exhibit O).

FFS and FWC cooperatively maintain approximately 35 acres of permanent wildlife openings and planted food plots on PWSF ranging in size from several small strips of wildlife openings up to one 15 acre dove field. Wildlife openings and food plots will be established and maintained in accordance with the FFS State Forest Handbook.

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

The FWC recommends the use of management guidelines in the published FWC Gopher Tortoise Species Management Plan to guide management actions for the

gopher tortoise (*Gopherus Polyphemus*) on the area. The FWC Gopher Tortoise Species Management Plan provides beneficial resource guidelines for habitat management and monitoring of the gopher tortoise. For your reference, the FWC Gopher Tortoise Species Management Plan can be accessed at this web address: <http://myfwc.com/wildlifehabitats/managed/gopher-tortoise/management-plan/>

The FWC recommends the use of management guidelines in FWC's published Species Action Plans for the management of imperiled, rare, and focal bird species. The FWC Species Action Plans provide beneficial resource guidelines for habitat management and monitoring of the respective species. For your reference, the FWC Species Action Plans can be accessed at this web address:

<http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/>

5. **Native Groundcover**

At PWSF there is a long history of agriculture and industrial silviculture on the site and subsequent diminishment of native groundcover. The Forest Manager assesses the groundcover prior to site-preparation recommendations and depending on the quality of the existing groundcover, modifies site-preparation treatments accordingly. This assists in determining the presence of remnant sensitive native species, reduces soil disturbances, and reduces impacts to native groundcover and associated fauna. However, any detailed critical assessment of native groundcover quality will require the funding of additional botanical expertise to complete field analysis and mapping.

Working in cooperation with FWC, habitat improvements are being prescribed and implemented. Prescribed fire continues to be the preferred management tool, although herbicide has been effective in controlling encroaching scrub oaks (*Quercus* spp.) on sandhill habitat where prescribed fire is impractical or ineffective

6. **Surveying and Monitoring**

Species-specific management plans will be developed when necessary, with assistance from FWC. Such plans will be consistent with rule and statute promulgated for the management of such species. Wildlife and botanical species of special note or those currently receiving special attention as it relates to surveys and/or management activities are discussed below.

One federally-listed wildlife species *with potential* to occur on PWSF is the **Reticulated Flatwoods Salamander**. A FNAI Elemental Occurrence (EO) record exists where in 1998 Hildreth Cooper (USFWS) dip-netted a purported flatwoods salamander larva but was not sure of the identification. Mr. Cooper took a photo of the salamander in a jar that was not diagnostic. Kevin Enge, the State Herpetologist with FWC (See Exhibit X), strongly suspects it was a mole salamander which he states are common in ponds on PWSF. Mr. Enge also reports that years of dip-netting over 200 ponds and drift fencing ponds in winter have failed to detect the species. The uplands and wetlands look suitable for flatwoods salamanders, better than the nearby Pine Log State Forest, but there are no credible records. Mr. Enge concludes that it is not a verified population and should not be included as a *known site*.

Local FWC staff report that they continue to annually sample potential herpetofaunal breeding ponds from November to April in an effort to identify flatwoods salamander breeding sites and document any breeding populations. Ponds are mapped and ranked as “highly likely,” “potential,” “unlikely,” or “unsuitable,” based primarily on a suitable hydroperiod (holding enough water to support amphibian larvae for at least three months) and the presence of wiregrass (*Aristida stricta*) or other grasses at the edge of the pond. Methods used include drift fences, set parallel to the edges of ponds, as well as sampling the ponds with dip nets and/or minnow traps. All amphibian and reptile species captured, recorded, and released. A recent taxonomic change has elevated the conservation priority of these salamanders and highlights the need for more active management to avoid extinction. In 2009, the species received critical habitat designation by the United States Fish and Wildlife Service (USFWS). FWC continues to work with FFS to improve potential breeding pond habitat through prescribed fire, mowing, thinning, and chopping. A management plan for the habitat of flatwoods salamander on PWSF was developed by FWC in 2005. FWC has also provided recommendations for mitigation on the eastern section of PWSF that includes mowing, burning, or a combination of both. These recommendations continue to be employed. FWC provides annual progress reports.

FWC has annually surveyed, monitored, and assessed the status of the **Gopher Tortoise** (*Gopherus polyphemus*) on PWSF since 1993. Aerial photos are used to identify suitable gopher tortoise habitat, primarily sandhill areas, and divided into clusters for management purposes. PWSF's sandhill habitat is grouped into 33 sampling clusters and is surveyed on a three year schedule so that approximately 1/3 of the area is visited each year. Data collected each year provides practical comparative information used to determine population trends and demography of the gopher tortoise populations within the WMAs.

Two historical elemental occurrence records for **Red-Cockaded Woodpecker** (RCW) exist in the FNAI database as occurring in the “checkerboard” western sections of PWSF. The date for these historical observations were in 1993 (EO #208) and 1996 (EO #217). The latter observation appears to have been an inactive cavity tree. Because of possible subsequent sightings, FNAI's Katy Nesmith requested an update (EO #208) from FFS in 2009. At that time, FFS's Plant Conservation Biologist Mike Jenkins surveyed the site for two hours one morning and found no activity. This was reported to FNAI. This particular forested parcel is small, in an area of intensive residential development, and has experienced no recent fire management activity.

There are multiple occurrence records for **Curtiss' Sandgrass** on PWSF, which when taken together, make this one of the largest known populations in Florida. Curtiss' sandgrass has been documented throughout most of PWSF since 1987 by several organizations and private citizens, though no species-specific survey has ever been conducted. Good populations of this pyrophytic species can be found on PWSF in open, sunny ecotones between uplands and wetlands. The best populations are found in areas under normal management regimes where the application of prescribed fire

has helped to stimulate flowering and reduce competing woody vegetation that can shade this species out. This plant may also be found in the open, sunny mowed rights-of-ways for power line and gas line corridors. Non-native, invasive plants such as Chinese tallow (*Sapium sebiferum*, syn. *Triadica sebiferum*) need to be treated where they have infested the normally open, wetter areas where the Curtiss' sandgrass form large colonies.

Another plant of interest is the state-endangered **White-Top Pitcherplant** which has been documented in the wet prairies and seepage slope communities of PWSF. In December 2010, Tom Greene resurveyed PWSF to update the 24 FNAI EO sightings for white-top pitcherplant population recorded and mapped in the 1990's (See Exhibit X). He and six Florida Native Plant Society volunteers could only relocate half of the original populations, but did identify three new locations. A total of 12 populations were confirmed with the number of individual plants ranging from one to over 100 at each site. Greene observed that where a decline in the pitcherplant population was observed, it appeared to be associated with increased growth and size of shrubs, such as titi, resulting from the lack of frequent fire which helps maintain seepage slope in an open, grassy condition.

D. Sustainable Forest Resources

FFS practices sustainable multiple-use forestry, to meet the forest resource needs and values of the present without compromising the similar capability of 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.

PWSF is mostly compromised of deep sandy soils, causing most forest tree species to be slower growing and have less height. The majority of the pine timber on the forest is longleaf pine, however, a few sand pine stands remain. Some options may exist for biomass harvesting for fuelwood, which could be explored as a management tool for the smaller western tracts of the forest where prescribed burning is difficult, and fuel loading is high. FFS staff will continue to seek opportunities to increase fire frequency at these seepage slope / wet prairie sites, to include a growing season component when possible, and to help reduce titi competition.

E. Beaches and Dune Resources

No beaches or dunes occur on the PWSF.

F. Mineral Resources

There are no known significant mineral deposits of commercial value on PWSF.

G. Unique Natural Features and Outstanding Native Landscapes

Unique features on the forest include one of the largest populations of Curtiss' sandgrass in Florida which can be found throughout the forest in large pockets. An old-growth stand of virgin longleaf pine also occurs on the forest. These flat-topped trees give visitors an impressive look at an outstanding native landscape which has become increasingly rare in the Florida panhandle.

H. Research Projects/Specimen Collection

Research projects may be performed on the forest on a temporary or permanent basis for the purpose of obtaining information that furthers the knowledge of forestry 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 PWSF must be considered accordance with the guidelines stated in 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 staff, 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 PWSF staff. Other special conditions may be applicable and the authorization may be terminated at any point if the study is not in compliance.

Research projects / specimen collections that have been initiated on the property include the monitoring and evaluation of ecosystem restoration on a coastal wet flatwoods site. This project looked at cutting off-site slash pine, site preparation, and the establishment of longleaf pine.

I. 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 sensitive species.

When new pre-suppression firelines, recreational trails, or other low-impact recreational site enhancements are necessary, their placement will be reviewed by state forest field staff to avoid sensitive areas. For ground disturbing activities such as construction of buildings, parking lots, and new roads, FFS will consult with the FNAI, DHR, and when necessary, DEP's Acquisition and Restoration Council (ARC).

V. Public Access and Recreation

The primary recreation objective is to provide the public with dispersed outdoor recreational activities that are dependent on the natural environment. FFS will continue to promote and

encourage public access and recreational use by the public while protecting resources and practicing multiple-use management. Recreation activities available on PWSF include hiking, biking, paddling, horseback riding, birding, picnicking, fishing, and hunting (See Exhibit P). PWSF is part of the Great Florida Birding Trail. Overnight camping is currently permitted on the forest at four designated primitive campsites. Camping is also available at both the Grayton Beach State Park and the Topsail Hill Preserve State Park. These areas are located adjacent to the forest. An effort will be made not to duplicate recreational services that exist or are planned on adjacent state park properties unless the demand for those amenities exceeds what the Florida Park Service can provide.

Periodic evaluations will be conducted by FFS staff to monitor recreational impacts on resources. Modifications to recreational uses will be implemented, should significant negative impacts be identified. New recreation opportunities and facilities, which are compatible with the primary goals and responsibilities of the FFS, will be considered only after FFS determines their compatibility with other forest uses and forest resources.

A. Existing Recreational Opportunities

1. Public Access and Roads

PWSF is intersected or bound by eight paved roads: U.S. Highways 98 and 331, County Roads 30A, 395, 283, 393, 83, and 457, as well as numerous other county graded dirt roads. Approximately 42 miles of graded dirt roads, woods roads, and trails access the interior portions of PWSF. These state forest roads are maintained by FFS. Access into PWSF is through eleven (11) public entrance roads. Vehicular traffic is allowed throughout the forest on open forest roads (Exhibit Q).

2. Trails

Eastern Lake Trail System – The Eastern Lake Trail System was the first trail established on the forest. This trail system consists of three double track loop trails. A hiker or bicyclist can travel the 3.5, 7, or 11 mile loop. The Eastern Lake Bike / Hike Trail is included in the Florida Forest Service's Trailwalker Hiking Program. Access to the trail system is located off County Road 395 and contains available parking, restrooms, and picnic tables. This trail also provides pedestrian access to Florida Scenic Highway 30A and the Gulf beaches. The trail now includes four primitive campsites.

Longleaf Greenway Trail – This trail has a new trailhead located off Satinwood Road in the community of Blue Mountain Beach. This trail is roughly 8 miles in length and provides users with a hike through a stand of virgin longleaf timber. However, this trail is not a loop and will guide the visitors to the Eastern Lake Trailhead. Future plans for this trail call for connecting with the trail system through to Grayton Beach State Park.

McQuage Bayou Horse Trail – This trail is located off of County Road 283. The horse trail consists of two loops east and west of the trailhead giving users the option of 3 or 5 miles of riding. The east trail is a 3 mile loop that connects back to the

trailhead. The west side consists of a 5 mile loop that also connects back to the trailhead.

B. Planned Recreational Opportunities

FFS will continue to assess plans for additional recreational opportunities based on demand, carrying capacity, demographics, and impact to the resources on the forest. Both terrestrial and aquatic resources and relative activities will be evaluated. Any specific plans will be incorporated into the Five-Year Recreational Plan on file at PWSF.

Stabilizing the bank of the Eastern Lake along the area of the old bridge and picnic area will be evaluated to see if it will provide for a viable kayak / paddleboard launching area.

The McQuage Bayou Horse Trail is under evaluation to make it a multiple use trail system. Currently, there is very limited use on the trail and revenue is minimal. The possibility of converting it to a pet “off leash area” is also being considered.

C. Hunter Access

Hunting season dates, limits, quota allocations and methods are established annually by FWC, in consultation with FFS. The PWSF WMA currently consists of the main southern tract of the forest. FWC law enforcement officers routinely check hunters for the proper permits and licenses due to the fact there are no check stations located on the forest. In cooperation with FWC, blocking and cabling secondary roads is reducing illegal year-round vehicular access to portions of PWSF. This practice has been carried out since 1992 to control illegal hunting and lessen the possibility of negative impacts on wildlife during the breeding season.

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 PWSF. Once developed, the Five-Year Outdoor Recreation Plan may lead more insight to management activities as they pertain to future educational opportunities PWSF may provide to the public. Additionally, FFS intends to establish an educational program for the public which will highlight to visitors ranch operations, the natural environment and the preservation of PWSF.

The Friends of Florida State Forests program is referenced in Chapter 589.012 of the Florida Statutes. For more information visit: www.floridastateforests.org.

VI. Forest Management Practices

A. Prescribed Fire

Forest management practices on Point Washington State Forest are important in the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians. Management practices on PWSF include a prescribed fire program that is an effective tool in controlling the growth of hardwood trees, limiting fuel accumulation to prevent wildfires, stimulating the recovery of native herbaceous and grassy ground cover, and promoting the regeneration of native pines.

FFS utilizes a total fire management program on state forests that includes wildfire prevention, detection and suppression, and prescribed burning. This program is the responsibility of the FFS's Chipola Forestry Center and is detailed in the Five-Year Prescribed Burning Management Plan. Emphasis will be placed on prescribed burning, wildfire prevention, and education to help reduce wildfire occurrence on the forest.

A Fire History graph detailing the recent history of prescribed burns and wildfires at PWSF is available in Exhibit W.

1. Prescribed Burning Plan

The annual forest prescribed burning program produces multiple benefits. The purposes of prescribed burning on PWSF are to facilitate forest management operations; enhance wildlife and listed species habitat; decrease fuel loading, consequently enhancing public safety; and to restore, maintain, and protect all native ecosystems, ecotones, and their ecological processes. FFS personnel are responsible for planning and implementing the annual prescribed burn program for PWSF, which will consist of growing and dormant season burns. Burns are planned by PWSF staff with input from cooperating agencies as appropriate. An annual Prescribed Burn Plan is developed each year as part of the PWSF Five-Year Prescribed Burning Plan. The Prescribed Burn Plan identifies the individual burn unit prescriptions and whether each unit is on a growing or dormant season rotation, and contains a map and other information specific to each burn unit. An FFS 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.

2. Fire Return Intervals

GIS data estimates that historic, fire dependent natural communities on PWSF occupied approximately 80 percent, or around 11,800 acres of the forest. Over 3,200 acres of dome, basin, floodplain swamp, and other non-fire maintained inclusions are estimated to occur throughout the forest. These pyrogenic upland communities and the ecotone edges of the wetland inclusions would have burned at varying frequencies based on the natural community type and local habitat conditions.

Past land uses have left some of these historically fire dependent communities in a condition unable to carry prescribed fire. Some burn units include very poor sites with low and non-contiguous groundcover which make it difficult for these zones to carry a fire. FFS staff report prescribed burn accomplishments based on the boundaries of clearly defined *burn units* – whose acreage are inclusive of both upland and wetland habitat. As discussed later in the management plan, FFS considers the long-term ecological goal for fire return interval to be achieved on an average burn cycle of 2 to 4 years. Given current fuel conditions, the lack of a long fire history, and anthropogenic and fire safety concerns, the local FFS staff has established a goal of

achieving an average fire return interval of 3 to 4 years across the forest at this point in time.

Over the past five years (through June 2015), PWSF personnel have averaged nearly 2,000 acres burned per year. This has served to increase the amount of the forest that is considered to be within the desired fire return interval to approximately 10,750 acres. Based on the above burn rotation goal, FFS will attempt to average 2,700 – 3,600 acres per year across this acreage to maintain it in its current fire maintenance condition. This leaves nearly 3,600 acres of Priority Level A forest land (see Table 9) where a fire regime needs to be established and included within the forest's annual burning goals. Getting these additional acres into fire rotation will be a goal for staff over the next ten years. Meeting prescribed fire goals will be largely dependent on favorable weather conditions, available personnel, and statewide emergency situations such as wildfires, hurricanes, and other natural disasters requiring PWSF staff involvement to respond and provide needed relief.

It should be noted here that as addressed in the Forest Management and Restoration Strategies section and Table 9 later in the plan, there are also approximately 1070 acres of PWSF where management conflicts and habitat conditions create huge challenges to re-establishing a fire regime and therefore have a much lower priority for burning over the next ten years – especially where mechanical or chemical treatment will have to precede any attempt at burning.

3. Community Outreach and Education

The PWSF is a participant in two Firewise community programs, which include both public and private landowners, and holds multiple outreach programs each year to educate the public and area land owners.

The Hidden Dunes Community Association is located in Miramar Beach in South Walton County, Florida on twenty-seven acres. The Resort is designed, constructed, and landscaped to enhance the natural beauty of the woodland areas and beaches. Planning for Firewise efforts began in 2011. In 2012, Hidden Dunes became a Firewise Community. Since 2012, the FFS Wildfire Mitigation Specialist has met with the Hidden Dunes Community Association Firewise Committee to investigate alternative means of beautification of cottages including replacing the use of pine straw, replacing wire screening with smaller dimension holes, and installing coiled and hanging hoses with fire prevention signage on all cottages with water outlets. The committee has worked hard this year to reduce the fire hazard by thinning the community's underbrush, vines, and palmettos.

The Cypress Dunes Community, located in Santa Rosa Beach in South Walton County, Florida, is bordered by Topsail Hill State Preserve. The neighborhood is designed, constructed, and landscaped to enhance the woodland areas and beaches. The landscaping features a variety of native plants, including a cypress head and two natural water features. Cypress Dunes became a Firewise Community in 2013. Since 2013, the FFS Wildfire Mitigation Specialist has given two presentations and the

community is investigating alternative means of beautification of houses including replacing the use of pine straw and palmetto near structures with a native, fire resistant plant. The Cypress Dunes Community Firewise Committee has worked with the builder to ensure wire screening is placed behind the wood facing on all new homes and houses have installed coiled, hanging hoses with fire prevention signage in strategic locations throughout the neighborhood. FFS suggested that property owners attach a hose on the outside faucets on the front of homes and have educated property owners on how to use these hoses in case of an emergency.

Each Firewise Community continues to reduce the fire hazard throughout the properties to a “Low Hazard” status by implementing best practices that lead to effective fire safety. Hidden Dunes and Cypress Dunes plan and participate in activities that promote an awareness of preventive actions with regard to wildfires and safety among property owners and neighboring communities.

4. Cooperation with DRP, Walton County, and private adjacent landowners

PWSF personnel are constantly vigilant for wildfires and have developed continuous communications with personnel at adjacent state parks, the South Walton County Fire Department, and private corporations, such as St. Joe Timberlands. Adjacent state parks include Camp Helen, Grayton, and Topsail. Such cooperation is essential in efforts to suppress and fight wildfires.

B. Wildfires, Prevention, Fire Strategies

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 Chipola Forestry Center. Emphasis will be placed on consistent accomplishment of prescribed burning goals and community outreach to increase public understanding of wildfire prevention and the benefits of prescribed fire.

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 PWSF Five-Year Prescribed Burning Plan.

1. Suppression Strategies

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

- a. **Contain** is defined as a suppression strategy where a fire is restricted to a certain area by using existing natural or constructed barriers that stop the fires spread under the prevailing and forecasted weather until it is out. This strategy allows the

use of environmentally sensitive tactics based on fuels, fire behavior and weather condition that keep a wildfire from burning a large area or for a long duration.

- 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 district fire load dictates that crews not be involved with individual fires for any longer than absolutely necessary.

Appropriate suppression action will be that which provides for the most reasonable probability of minimizing fire suppression cost and critical resource damage, consistent with probable fire behavior, total fire load, potential resource and environmental impacts, safety and smoke management considerations. If a wildfire is within prescription then consider letting it act as a prescribed burn. 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 and be conducted by a certified burner. If smoke threatens to cause a safety hazard then direct immediate suppression action will be taken.

3. Fire Breaks and Firelines

A system of permanent fire breaks will be developed and maintained around and within the boundaries of PWSF to guard against fires escaping from and entering the forest. Such fire breaks will consist of natural barriers, roads, trails, permanent grass strips and where appropriate, well maintained harrowed lines. All fire breaks will meet the established Silvicultural Best Management Practices (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 approved firelines in heavy fuels and in cases where it's considered necessary to protect life, property, or resources and/or to minimize threats to firefighters. Plow and bulldozed lines will be rehabilitated and BMPs implemented as soon as practical after the fire is suppressed.

4. Sensitive Areas

The PWSF has on file in the state forest headquarters an Environmentally Sensitive Area Map that identifies protected sites such as critical wetlands and archaeological and historical sites known to occur on the state forest. Personnel are aware of these areas in the event of a wildfire. Special precautions will be followed when prescribed burning or fighting wildfires in sensitive areas on PWSF. When possible, fire staff will avoid line construction in wetland ecotones throughout the forest.

5. Adjacent Neighbor Contacts

The staff at PWSF 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.

6. Post-Burn Evaluations

A post-burn evaluation is required for each wildfire and prescribed burn on the state forests 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 through the burn plans in the Forest Supervisor's files, and through maintenance of GIS data; these records are intended to provide data for future management decisions.

C. Sustainable Forestry & Silviculture

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

1. Strategies

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

- 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 old growth components that yields sustainable economic, ecological, and social benefits.

2. Silvicultural Operations

Silvicultural operations on PWSF will be directed toward improving forest health, wildlife habitat, biological and economical sustainability, as well as toward recovery from management practices by previous owners that were not in accordance with the current conservation objectives identified in this plan. Any remaining stands of off-site species with merchantable volume will be scheduled for harvest, followed by subsequent 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 groundcover. Site preparation methods may include prescribed fire, mechanical vegetation control, and/or herbicide applications.

Prescribed fire is the most desirable method of vegetation control for 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 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 plant communities through timber harvesting will include but is not limited to thinning for maintenance, natural regeneration harvests, and clear-cutting to remove off site species.

All silvicultural activities (including timber harvesting and reforestation) will meet or exceed the standards in the FFS’s Silviculture Best Management Practices (BMPs) and the State Forest Handbook.

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. On average, 10 percent of PWSF forest is re-inventoried annually to provide an accurate estimation of the standing timber and to ensure that stands will be managed sustainably. As of 2015, the timber volumes and projections for PWSF are:

Table 5. Timber Inventory by Stand Type

Forest Type	Acres	Pine Tons	Hardwood Tons	Cypress Tons	Average Tons/Acre (Pine only)	Current (2015) Total Tons	Projected (2025) Total Tons
Pine Stands (upland)	9,941	185,584	3,441	32	18.7	189,057	273,602
Hardwood Stands	3,915	40,030	33,940	7,886	10.2	81,855	111,969
Cypress Stands	642	4,838	3,099	7,480	7.5	15,417	23,620

Current 2015 Pine Stands (*upland*) characteristics can be summarized:

- 72 % is longleaf pine.
- Approximately 3,500 acres or 35% is planted pine (vs. natural).
- 6% is in seedling stage (less than 4.5 feet in height).
- The basal area averages 38 square feet.
- Diameter averages 4.2 inches at a breast height of 4.5 feet.
- The average height is 40 feet.
- The average age is 40 years.
- The site index averages 47.
- Pine growth is estimated at 0.88 tons per acre per year.
- Pine Stands: Understocked ~ 54%; Fully Stocked ~ 42%; Overstocked ~ 4%.

Based on estimated growth and past pine harvests over the next ten years on PWSF, FFS projects forest management practices to achieve a sustainable program of timber harvests.

Table 6. Pine Timber Harvest Sustainability

Estimated Annual Growth	Estimated Annual Harvests	Estimated Annual Net Gain
8,748 tons	3,216 tons	+ 5,532 tons

4. Timber 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.

D. Non-Native Invasive Species Control

State forests are periodically surveyed by FFS staff, and detection of populations of non-native invasive species are noted and prioritized for appropriate control action. Known occurrences of non-native invasive species are prioritized and treated as funding and personnel allow, with the intention of ultimately eradicating these species from state forest property. These occurrences (see Table 6 below) are recorded in the GIS database and updated as new plants are discovered. 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 internal equipment and equipment used by private contractors according to the State Forest Handbook.

FFS will enlist support from the FWC in the effort to control non-native invasive animals. Feral hogs (*Sus scrofa*) are a nuisance species and are present on some tracts of the PWSF. FWC has issued a feral hog control trapping permit to FFS for all state forests and FFS will encourage hog removal on PWSF through trapping and hunting.

All of these on-going prevention, maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan which is developed to prevent, locate, identify, and control non-native invasive plant and animal and problem species.

Training in the identification and control of non-native 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 pest plants will be target specific and use a variety of methods including appropriately labeled and efficacious herbicides. A map showing Cogon Grass locations can be found in Exhibit R.

Table 7. Non-Native Invasive Plant Species Occurring on PWSF

Scientific Name	Common Name	Treatment Strategy	Acres Impacted	Status**
<i>Imperata cylindrica</i>	Cogon grass	Glyphosate & Arsenal	104	Stable
<i>Albizia julibrissin</i>	Mimosa	Herbicide Spray	Minimal	Stable – Treated as Found
<i>Sapium sebiferum</i>	Chinese	Cut and spray	Minimal	Stable – Treated

Scientific Name	Common Name	Treatment Strategy	Acres Impacted	Status**
	tallow	stump		as Found

** "Increasing", "Decreasing", "Stable" "Eradicated", or "Unknown"

E. Insects, Disease and Forest Health

Currently, there are no insect or disease problems on PWSF. In the event of an outbreak of southern pine beetles, consultation with the Forest Management Bureau’s Forest Health Section will be sought to formulate an appropriate and effective response.

In compliance with Section 388.4111, Florida Statutes and in Section 5E-13.042, Florida Administrative Code (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. With the approval of this plan documenting this designation, the local arthropod control agency in Walton County will be notified of this designation. Responses from the South Walton County Mosquito Control District (SWCMCD) and the Arthropod Control Plan are attached in Exhibit Y.

As a result, prior to conducting any arthropod control activities on PWSF, the local agency must 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 agency details on the management objectives for PWSF. This public lands control plan must be in compliance with DACS guidelines and using the appropriate DACS form. The plan must then be approved and mutually adopted by the county, FFS and DACS, prior to initiation of any mosquito control work. Should the local mosquito control district not propose any mosquito control operations on the property, no arthropod control plan is required.

F. Forest Management & Restoration Strategies

The majority of PWSF, 14,338 acres or 93%, on the eastern side is actively managed to maintain or achieve desired habitat conditions. A majority, 70%, of the forest is considered to be currently in a fire maintenance condition within the desired fire return interval. Management strategies will continue to involve the application of prescribed fire, timber management and invasive plant treatments to maintain and increase the total acres that exist within the established desired habitat condition for that particular planted pine or natural community. Current levels of staff and funding are generally considered adequate to implement these forest management strategies and achieve these objectives.

In the remaining western portion, 1,069 acres or 7%, significant to extremely significant challenges exist to land management. Acquisition of PWSF project land here resulted in smaller-sized and/or isolated, non-contiguous parcels. In addition, heavy fuel buildup, budget and cost constraints, and wildland-urban interface conditions have individually and collectively impacted the intensity of management activities to varying degrees on PWSF.

Taken on a whole, these factors represent significant conflicts for restoration and/or improvement of fire-suppressed forest land.

In particular, the Wildland-Urban Interface (WUI) is a set of conditions that affect resources and how they can be managed. These sites typically consist of areas where human-made infrastructure is in or adjacent to pyrogenic natural communities. These interface zones are generally small, isolated parcels that are located near multiple smoke sensitive sites. In such conditions of urban interface, it will be very difficult to safely reintroduce or sustain the desired fire frequency. Unless significant increases to staff numbers and funding are provided, many of these more management-challenged sites will continue to be secured and monitored and wildfire risk mitigated by the existing FFS staff. Category 1 non-native, invasive plants will be treated as funding is available.

With sufficient improvements to staff and funding levels, alternative restoration and management strategies (mowing, biomass harvests, small contract burns, etc.) will be attempted if such activities will have some value in improving groundcover, health, diversity, and overall condition and reducing undesired woody structure.

Consideration will be given to attempt more traditional management to restore or maintain desired conditions where fire-suppressed rare and imperiled habitats are discovered that host threatened and/or endangered species. This will be implemented on a site by site basis and to the extent that current operational funding is available.

In regards to the management challenges identified above, PWSF staff has completed a general assessment of the entire forest to survey and identify these challenging sites. Subsequently, staff has developed a forest-wide summary and location map identifying the priority levels for management / restoration activities during the next ten years (See Exhibit U). These management approaches or strategies are captured in Table 9.

Table 8. PWSF Habitat Conditions and Management / Restoration Strategies

Priority Level	Acreage/ Percent	Typical Habitat Conditions (Current)	Mgmt/ Restoration Conflicts	Anticipated and/or Actual Costs	Management Strategies and Ten-Year Goals
A	14,338 ac 93%	Intact natural habitats & planted pine stands; generally within desired fire rotation and forest structure and pine densities (ex. basal area) ; adequate native groundcover; ecotones display positive impacts from fire; minimal invasive plant occurrences	Low	Low to Moderate	<u>Key words:</u> <i>manage, maintain</i> <u>Strategies:</u> Routine prescribed fire; occasional timber thinning; occasional mechanical / herbicide treatments may be required. All invasive plants treated as funded. <u>Ten-year Goal(s):</u> Actively manage to achieve or maintain desired habitat conditions and fire return intervals as described later in plan
B	523 ac	Habitat conditions	Moderate	Moderate to	<u>Key words:</u> <i>improve, restore</i>

	3%	similar in most cases to those in Level C (below), however fuel loading levels may be less severe due to prescribed fire penetrating these sites during burning on adjacent Level A areas which has somewhat reduced heavy fuels.		High	<u>Strategies:</u> If wildfire risks and/or smoke management issues can be mitigated, continue to seek opportunities to include these zones when burning adjacent parcels. Attempt to achieve 5 – 10 year fire rotation where these conditions exist. Otherwise, strategies similar to Level C below. <u>Ten-year Goal(s):</u> In addition to those establish for Level C parcels, identify specific stands to initiate fire management and <u>begin</u> restoration of desired habitat conditions and fuel level management
C	546 ac 4%	Fire suppressed natural and/or disturbed habitat; generally high levels of unburned fuels; dense/tall shrub level (ex. titi) suppressed groundcover; minimal to high invasive plant occurrence; pine timber densities may be too dense or too sparse.	High	High to Very High	<u>Key words:</u> <i>secure, monitor</i> <u>Strategies:</u> Identify and secure property boundaries; Category 1 invasive plants treated; maintain perimeter fire breaks adjacent to homes; extremely limited prescribed fire where necessary to mitigate wildfire risk; isolated and minimal treatments to protect at-risk imperiled species. Employ various alternative management practices (i.e. mowing, chemical vegetation treatment, thinning harvests, biomass harvests, etc.) will be utilized where applicable. <u>Ten-year Goal:</u> Secure and monitor perimeter to minimize fire hazard and risks in wildland/urban interface; identify/implement timber thinning where needed.

G. Use of Private Land Contractors

The forest manager makes ongoing evaluations of the use of private contractors and consultants to facilitate the total resource management activities of this state forest. The opportunities for outsourcing land management work include or are anticipated to include:

- | | |
|---------------------|-----------------------------------------------|
| 1. Reforestation | 4. Biomass Harvest |
| 2. Site Preparation | 5. Species / Natural Community Surveys (FNAI) |
| 3. Timber Harvest | |

VII. Proposed Management Activities for Natural Communities / Landcover Types

In 2006, the Florida Natural Areas Inventory (FNAI) completed an inventory and natural community mapping project on 14,808 acres of PWSF, and a historic natural community type map (Exhibit S) was created. Current natural communities and cover types on PWSF may be found in the map in Exhibit T.

In late 2015, FFS approached FNAI to reassess these historic and current natural community boundaries and acreages for this management plan. Table 10 and Table 11 reflect this recent estimation for both current and historic acreages. The *current* natural community

map (Exhibit S) reflects this recent mapping work. The *historic* natural community map (Exhibit T) is from the 2006 survey. It is cautioned that these are estimated acreages and the current natural community map has not been field checked and will require a closer examination during future work before these represent an accurate and complete summary of the data. The historical community map may also need to be updated to reflect the wet prairie community as well as any other updates and/or corrections to the boundaries of other community types.

Since its acquisition in 1992, FFS has actively pursued a program of reforestation so as to re-establish the appropriate tree canopy species throughout the upland habitats. Over 2,200 acres of sandhill and mesic flatwoods have had longleaf pine successfully planted. FFS continues to return fire to these stands in an effort to increase fire frequencies, reduce undesired levels of woody vegetation, and improve groundcover health and diversity. Where this has been accomplished, these stands are now largely functioning as healthy, intact natural systems. In addition, there remains approximately 1,200 acres of slash pine planted in both the flatwoods and on some more xeric sites prior to property acquisition by the State. Efforts continue to selectively thin these pine stands to ensure tree productivity and forest health and to enhance the impacts of fire on groundcover diversity. Planted slash pine stands in the sandhills, over time, will be under-planted with longleaf pine or clearcut and reforested with longleaf pine seedlings.

Management during this ten-year period will include an ongoing forest-wide assessment of the fuel loading, timber densities, and groundcover to determine the most appropriate steps necessary to continue or re-introduce prescribed burning. Where planted pine or natural stands have been disturbed or experienced years of fire suppression, initial strategies may include thinning of overly dense pine plantations, mowing or chopping in areas of heavy fuel buildup, and/or application of dormant season fires. The results of these efforts will be monitored and more refined and detailed restoration plans will be made where necessary. For the purposes of this management plan, *restoration* is defined as the process of returning ecosystems or habitats to the appropriate structure and species composition, based on soil type.

Fire return intervals are gathered from review of FNAI guidelines and modified based on local ecosystem conditions and operational concerns. The intervals are included here 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 habitat goals. Fire frequency is generally increased or decreased depending upon the conditions (fuel levels, anthropogenic challenges, etc.) of the specific area and the local FFS burn experience.

Table 9. Natural Communities Found on PWSF

Natural Community / Landcover Type	Historical (Estimated Acres)	Current (Estimated Acres)	PWSF Long-term Guideline for Burn Interval (Years)
Wet Flatwoods*	3,816	3,772	1-4

Natural Community / Landcover Type	Historical (Estimated Acres)	Current (Estimated Acres)	PWSF Long-term Guideline for Burn Interval (Years)
Mesic Flatwoods*	3,804	3,758	2-4
Sandhill*	2,714	2,680	2-4
Scrubby Flatwoods*	578	562	2-4
Basin/Floodplain Swamp**	2,650	2,650	3-150
Dome Swamp	363	363	3-150
Scrub	110	110	10-20***
Salt Marsh ****	38	38	N/A
Coastal Dune Lake	12	12	N/A
Wet Prairie*	939	939	1-4
Other (see Table 11)	x	140	N/A
TOTAL	15,024	15,024	2 - 4

*Reflects both “restoration community” acreage and intact natural community acreage as estimated by FNAI in 2016 and as displayed in the current natural community map in Exhibit S.

** Further work will be required by FFS/FNAI to sort out location/boundaries of these two communities. The draft current natural community map in Exhibit S has not differentiated them; however the 2006 FNAI survey and the associated historical natural community map included them as two distinct communities. The assessment and FFS comments for each of these two communities from the 2006 FNAI report is included in the following text section.

*** Given the anthropogenic/safety concerns, burning may be limited to edges only.

****Shown in 2006 FNAI natural community map and description as Estuarine Tidal Marsh – the FNAI title for this habitat prior to 2010.

Table 10. Altered Landcover Types Found on PWSF

Altered Landcover Type*	Current Acres Mapped
Artificial Pond	8
Clearing**	116
Developed	16

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

** Clearings (and current natural community map in Exhibit S) include acreage where offsite photographic imagery was inadequate to provide FNAI estimate in 2016 without field inspection.

It should be noted regarding altered land cover type acreages shown above, that local FFS staff estimates that forest roads encompass nearly 500 acres of what is included above within the “natural community” acreage totals. It is also acknowledged the GIS summary of natural communities above is nearly 400 acres less than the acreage listed in the acquisition deeds and displayed elsewhere in this plan.

Desired condition, current condition descriptions, and management recommendations are given below, and are taken from the 2006 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 PWSF. The desired condition of the forest will reflect the results achieved through implementation of management goals and objectives contained in this plan. When a desired condition has been achieved for a natural community, it is considered to be in a “maintenance condition”.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural communities at PWSF during the next ten year planning period. Goals, desired conditions, standards, and guidelines provide management area direction. These goals and desired conditions may take many planning cycles to attain.

A. Wet Flatwoods **Description**

Wet flatwoods are flat, poorly drained woodlands with a pine canopy and a diverse understory of hydrophytic herbs and shrubs. On PWSF wet flatwoods cover both vast areas and smaller transition areas between basin swamps and adjacent uplands. Many of the areas characterized as wet flatwoods likely contained small wet prairie inclusions, especially the transitional areas. Wet prairies are treeless plains dominated by hydrophytic herbs. The desired condition for wet flatwoods on Point Washington State Forest consists of a canopy of longleaf pine (*Pinus palustris*), and/or slash pine (*Pinus elliottii*). The sub-canopy is sparse, and consists of younger canopy trees. The understory is herb dominated, with scattered shrubs throughout. Shrubs include gallberry (*Ilex glabra*), large gallberry (*Ilex coriacea*), dwarf live oak (*Quercus minima*), fourpetal St. John’s wort (*Hypericum tetrapetalum*), fetterbush (*Lyonia lucida*), and wax myrtle (*Myrica cerifera*) with an occasional titi (*Cyrilla racemiflora*) and black titi (*Cliftonia monophylla*). Herbs include wiregrass (*Aristida stricta*), which is dominant, along with southern club moss (*Lycopodiella appressa*), spreading beaksedge (*Rhynchospora divergens*), Chapman's beaksedge (*Rhynchospora chapmanii*), shortbristle horned beaksedge (*Rhynchospora corniculata*), flattened pipewort (*Eriocaulon compressum*), ten angle pipewort (*Eriocaulon decangulare*), yellow-eyed grass (*Xyris* spp.), pineland rayless goldenrod (*Bigelovia nudata*), toothache grass (*Ctenium aromaticum*), Curtiss’ sandgrass (*Calamovilfa curtissii*), savannah aster (*Aster chapmanii*), thistleleaf aster (*Aster eryngiifolia*) nutrush (*Scleria* spp.), savannah meadowbeauty (*Rhexia alifanus*), gayfeather (*Liatris* spp.), oneflower honeycombhead (*Balduina uniflora*), Texas tickseed (*Coreopsis linifolia*), coastalplain tickseed (*Coreopsis gladiata*), hairawn muhly (*Muhlenbergia capillaris*), panic grass (*Panicum* spp.), witchgrass (*Dichanthelium* spp.), yellow pitcherplant (*Sarracenia flava*), whitetop pitcherplant (*Sarracenia leucophylla*), Gulf purple pitcherplant (*Sarracenia rosea*), rush featherling (*Pleea tenuifolia*), shortleaf rosegentian (*Sabatia brevifolia*), milkwort (*Polygala* spp.), Henry’s spiderlily (*Hymenocallis*

henryae), horned bladderwort (*Utricularia cornuta*), pink sundew (*Drosera capillaris*), threadleaf sundew (*Drosera filiformis*), spoon-leaved sundew (*Drosera intermedia*), wiregrass gentian (*Gentiana pennelliana*), fringed orchid (*Platanthera* spp.), pogonia (*Pogonia* spp.), Catesby's lily (*Lilium catesbaei*), false foxglove (*Agalinis* spp.), milkweeds (*Asclepias* spp.), piedmont cowbane (*Oxypolis ternata*), colicroot (*Aletris* spp.), bogbutton (*Lachnocaulon* spp.), grassleaf Barbara's buttons (*Marshallia graminifolia*), Chapman's crownbeard (*Verbesina chapmannii*), and butterwort (*Pinguicula* spp.) among others. Epiphytes are absent. Vines are absent or infrequent.

Current Condition

Currently, much of the wet flatwoods has been invaded by bayhead species, especially titi and black titi, due to infrequent fire in the past. Much of the central portion of the forest is a vast wet flatwoods mosaic with small "islands" of mesic flatwoods and scattered swamps of various sizes. Slash pine forms a canopy of uniform aged trees. A sub-canopy is generally absent, though large myrtle dahoon (*Ilex cassine* var. *myrtifolia*) and swamp bay (*Persea palustris*) trees may be present. The understory is dominated by titi and black titi, forming a dense thicket. Other shrubs present include Apalachicola St. John's wort (*Hypericum chapmannii*), myrtle dahoon, large gallberry, gallberry, fetterbush, sweetbay (*Magnolia virginiana*), wax myrtle, and dwarf live oak. Herbs are sparse and include wiregrass, broomsedge bluestem (*Andropogon virginicus*), spreading beaksedge, Chapman's beaksedge, shortbristle horned beaksedge, flattened pipewort, yellow-eyed grass, toothache grass, Curtiss' sandgrass, savannah meadowbeauty, thistleleaf aster, oneflower honeycombhead, hairawn muhly, panic grass, witchgrass, yellow pitcherplant, rush featherling, orange milkwort (*Polygala lutea*), threadleaf sundew, Carolina redroot (*Lachnanthes caroliana*), royal fern (*Osmunda regalis* var. *spectabilis*), and spadeleaf (*Centella asiatica*). Epiphytes are absent. Vines are occasional and include laurel greenbrier (*Smilax laurifolia*).

Fire Management

Wet flatwoods require frequent, low intensity fires to maintain an herbaceous dominated understory. In the absence of fire, hardwoods, especially titi and black titi, encroach upon and eventually dominate the area converting the wet flatwoods to a baygall type community. These areas are difficult to restore back to wet flatwoods due to the general incombustibility and moisture of the fuels. Where dominated more by herbs and grasses in the southeastern US coastal plain, wet flatwoods is estimated to have naturally burned every 1 to 3 years, ignited by lightning storms during the late spring and early summer. Where more shrub and trees dominated, longer fire intervals probably prevailed (5 to 10 years) to allow for pine regeneration and shrubs to survive. For restoration and management purposes at PWSF, a general guideline for prescribed fire interval is currently estimated at 1 to 4 years. Prescribed fires will be conducted as the opportunities and fuel conditions permit so as to reduce hardwood abundance and encourage herbaceous species growth and diversity.

Management Actions

Restore bay-invaded areas, minimize soil-disturbing practices, and implement prescribed fire at the suggested interval of 1 to 4 years. Restoration of bay-invaded areas may be achieved by either burning these areas or by mechanical removal of bays and titi prior to burning. On stands that are more difficult to burn due to fuel loading and the location to structures, other

management options will be pursued. For example, a 240-acre biomass harvest was conducted on a stand north of Highway 98. The producer harvested titi, hardwoods, and smaller pines. This has allowed for the opening of the stand where fire now may be applied and the overall health and vigor of the forest will be increased. Care will be taken to minimize disruption of the soil surface, which is crucial for ensuring recovery of the herbaceous layer, especially wiregrass. Forest stands will continue to be monitored during field inventory site visits to assess the need for timber thinning to ensure forest health and productivity.

B. Mesic Flatwoods

Description

Mesic flatwoods are flat, poorly to well-drained woodlands with a canopy of longleaf and/or slash pine and a diverse understory of low shrubs and herbs. Frequent, low intensity fires maintain species composition and diversity in mesic flatwoods. On PWSF mesic flatwoods occur in association with sandhill and wet flatwoods, often as a transition between these two communities or as “islands” within a larger wet flatwoods matrix. Desired conditions for mesic flatwoods on PWSF include a canopy of mainly longleaf pine (*Pinus palustris*). Transitional areas near wetlands may contain pond pine (*Pinus serotina*) or slash pine (*Pinus elliottii*) in the canopy. The sub-canopy is typically sparse and patchy, and consists of young pine saplings. In drier mesic flatwoods bordering sandhills, post oak (*Quercus stellata*), bluejack oak (*Quercus incana*), and turkey oak (*Quercus laevis*) may be found. The understory harbors a diverse assemblage of shrubs and herbs with shrubs generally not exceeding 75% cover. Shrubs include saw palmetto (*Serenoa repens*), dwarf live oak (*Quercus minima*), Darrow’s blueberry (*Vaccinium darrowii*), shiny blueberry (*Vaccinium myrsinites*), gopher apple (*Licania michauxii*), gallberry (*Ilex glabra*), huckleberry (*Gaylussacia* spp.), wax myrtle (*Myrica cerifera*), winged sumac (*Rhus copallinum*), rusty staggerbush (*Lyonia ferruginea*), hairy laurel (*Kalmia hirsuta*), slimleaf pawpaw (*Asimina angustifolia*), flatwoods St. John’s wort (*Hypericum microsepalum*), and fourpetal St. John’s wort (*Hypericum tetrapetalum*). In drier mesic flatwoods sites yaupon (*Ilex vomitoria*) and false rosemary (*Conradina canescens*) may be present. The herbaceous layer is dominated by wiregrass (*Aristida stricta*). Other common herbs include bracken fern (*Pteridium aquilinum*), gayfeather (*Liatris* spp.), pineywoods dropseed (*Sporobolus junceus*), Florida dropseed (*Sporobolus floridanus*), meadowbeauty (*Rhexia* spp.), chaffhead (*Carphephorus* spp.), narrowleaf silkgrass (*Pityopsis graminifolia*), prairie fleabane (*Erigeron strigosus*), piedmont pinweed (*Lechea torreyi*), bluestems (*Schizachyrium* spp.), needleleaf witchgrass (*Dichanthelium aciculare*), shortleaf rose gentian (*Sabatia brevifolia*), tall nutgrass (*Scleria triglomerata*), anise scented goldenrod (*Solidago odora*), blackroot (*Pterocaulon pycnostachyum*), scaleleaf aster (*Symphyotrichum adnatum*), coastalplain yellow-eyed grass (*Xyris ambigua*), summer farewell (*Dalea pinnata*), coastalplain honeycomb head (*Balduina angustifolia*), Mohr’s thoroughwort (*Eupatorium mohrii*), Walter’s aster (*Symphyotrichum walteri*), lopsided Indiangrass (*Sorghastrum secundum*), dogtongue wild buckwheat (*Eriogonum tomentosum*), button rattlesnakemaster (*Eryngium yuccifolium*), fascicled beaksedge (*Rhynchospora fascicularis*), false foxglove (*Agalinis* spp.), milkweed (*Asclepias* spp.), yellow false foxglove (*Aureolaria* spp.), panic grass (*Panicum* spp.), hedgehyssop (*Gratiola* spp.), clustered bushmint (*Hyptis alata*), Curtiss’ sandgrass (*Calamovilfa curtissii*), Catesby’s lily (*Lilium catesbaei*), orange milkwort (*Polygala lutea*), candyrout (*Polygala*

nana), blacksennea (*Seymeria* spp.), and queen's delight (*Stillingia sylvatica*). Epiphytes are absent. Vines are infrequent and consist of Carolina jessamine (*Gelsemium sempervirens*), muscadine (*Vitis rotundifolia*), and saw green brier (*Smilax bona-nox*).

Current Condition

The mesic flatwoods on PWSF are in varying conditions which include native flatwoods and areas of planted longleaf pine that have been burned routinely in the dormant season and have achieved desired stand conditions. Other planted pine stands are more densely stocked or heavily invaded by baygall vegetation and require more frequent fire, timber thinning, and/or mechanical treatments. Some areas, due to a dense canopy of slash pine, possess a depauperate understory caused by the dense canopy. Understory species typically found in these areas include dwarf live oak, saw palmetto, gallberry, false rosemary, wiregrass, and bracken fern. Leaf litter is often dense in these areas. In recently harvested and/or cleared areas the overstory is absent and the vegetation consists of typical flatwoods species such as saw palmetto, gallberry, dwarf live oak, wiregrass, and bracken fern, as well as weedy herbaceous species, such as broomsedge bluestem (*Andropogon virginicus*). Many of the mesic flatwoods "islands" found within the larger wet flatwoods matrix have a slash pine canopy with a dense understory dominated by species such as titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), fetterbush (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*), along with more typical flatwoods species such as saw palmetto, gallberry, hairy laurel, and shiny blueberry. Herbs in these areas are sparse due to the dense shrub layer and include wiregrass, Florida dropseed, vanillaleaf, and Curtiss' sandgrass. Much of the mesic flatwoods areas that have experienced routine prescribed fire and appropriate timber thinning to achieve desired stocking are on track to meet the desired conditions.

Fire Management

Mesic flatwoods depend on frequent, low-intensity fires to maintain a diverse herbaceous layer. Many plant species in mesic flatwoods rely on these fires for reproduction. Historically, fires naturally occurred on average every 2 to 4 years, ignited by lightning storms in late spring and early summer. For restoration and management purposes at PWSF, a general guideline for prescribed fire interval in the mesic flatwoods is currently estimated at 2 to 4 years. Prescribed fires will be conducted as the opportunities and fuel conditions permit so as to reduce hardwood abundance and encourage herbaceous species growth and diversity.

Management Actions

Minimize soil disturbances during silvicultural activities to preserve the wiregrass component of the understory, which is crucial to carrying fire through the community. Maintain pine canopy at appropriate densities that will aid in increasing herbaceous species diversity by allowing good light penetration to the forest floor and allow as well for improved biomass productivity. Forest stands will continue to be monitored during field inventory site visits to assess the need for timber thinning to ensure forest health and productivity. Sites that may have been clearcut harvested or are severely understocked will be assessed and the most appropriate pine species re-established using suitable site preparation and tree planting techniques. Apply prescribed burns to mesic flatwoods to

achieve the desired fire frequency of 2 to 4 years. Assess the more bay-invaded mesic flatwoods “islands” and the surrounding historic wet flatwoods for increased fire frequencies or mechanical treatments to decrease heavy shrub encroachment and restore and/or increase herbaceous diversity. These areas are ideal for Curtiss’ sandgrass, an endemic species listed as threatened by the State of Florida. In tracts that prescribed burning is not always an option, biomass harvesting will be evaluated as an option to mimic the effects of fire.

C. Sandhill

Description

Sandhills are xeric sandy uplands dominated by a canopy of longleaf pine (*Pinus palustris*) with scattered turkey oak (*Quercus laevis*) in the sub-canopy and wiregrass (*Aristida stricta*) dominant in the groundcover. Sandhills are found primarily in the mid section of the site along the south and north boundary, separated by a matrix of mostly wet flatwoods and floodplain swamp. Desired conditions for sandhill on Point Washington State Forest consist of a canopy of longleaf pine representing several age classes. The sub-canopy commonly is open and contains younger longleaf pine, as well as turkey oak with an occasional sand post oak (*Quercus margareta*) and bluejack oak (*Quercus incana*). The understory consists of a diverse assemblage of shrubs and herbs, with herbs being slightly more abundant. Shrubs include saw palmetto (*Serenoa repens*), dwarf live oak (*Quercus minima*), gallberry (*Ilex glabra*), shiny blueberry (*Vaccinium myrsinites*), deerberry (*Vaccinium stamineum*), sparkleberry (*Vaccinium arboreum*), huckleberry (*Gaylussacia* spp.), false rosemary (*Conradina canescens*), bush goldenrod (*Chrysoma pauciflosculosa*), Adam’s needle (*Yucca filamentosa*), pricklypear (*Opuntia humifusa*), Michaux’s hawthorn (*Crataegus michauxii*), gopher apple (*Licania michauxii*), common persimmon (*Diospyros virginiana*), yaupon (*Ilex vomitoria*), winged sumac (*Rhus copallinum*), slimleaf pawpaw (*Asimina angustifolia*), Florida calamint (*Calamintha dentata*), and sassafras (*Sassafras albidum*). Wiregrass is dominant in the herb layer. Other typical herbs include, narrowleaf silkgrass (*Pityopsis graminifolia*), bracken fern (*Pteridium aquilinum*), queen’s delight (*Stillingia sylvatica*), aniscented goldenrod (*Solidago odora*), Apalachicola wild indigo (*Baptisia megacarpa*), pineland wild indigo (*Baptisia lecontei*), milk peas (*Galactia* spp), whitetop aster (*Aster tortifolius*), tall ironweed (*Vernonia angustifolia*), summer farewell (*Dalea pinnata*), greeneyes (*Berlandiera pumila*), gayfeather (*Liatris* spp.), pinweeds (*Lechea* spp.), frostweed (*Helianthemum* spp.), pineywoods dropseed (*Sporobolus junceus*), butterflyweed (*Asclepias tuberosa*), jointweed (*Polygonella* spp.), dogtongue wild buckwheat (*Eriogonum tomentosum*), Gulf Coast lupine (*Lupinus westianus*), forked bluecurls (*Trichostema dichotomum*), witchgrass (*Dichantheium* spp.), sandyfield beaksedge (*Rhynchospora megalocarpa*), lopsided Indian grass (*Sorghastrum secundum*), partridge pea (*Chamaecrista fasciculata*), coastalplain honeycomb head (*Balduina angustifolia*), square flower (*Paronychia erecta*), goldenaster (*Chrysopsis* spp.), sensitive brier (*Mimosa quadrivalvis*), and bluestem (*Schizachyrium* spp.). Epiphytes are absent. Vines are infrequent and include earleaf greenbriar (*Smilax auriculata*) and muscadine (*Vitis rotundifolia*).

Current Condition

Sandhills currently found on the property are in some stage of recovery from historical logging or other intensive forestry operations. Some of the existing sandhill is largely intact and has not experienced such operations for some time and has benefited from frequent fires.

Eighty-five acres of sand pine (*Pinus clausa*) remain to be converted to longleaf pine and some areas where sand pine has naturally invaded the sandhill community require harvest or treatment. FFS is conducting a restoration clear-cut harvest in 2016 on such a site. In the sand pine invaded areas, longleaf pine is often present as a subcanopy species along with turkey oak, post oak, and bluejack oak. The understory, however, is often depauperate due to the dense sand pine canopy. Invasion of sand pine in these areas is likely due to lack of frequent fire. It is noteworthy to point out that most of the sand pine invasion occurs closer to the coast where sand pine may be able to out-compete longleaf pine in areas where salt spray is more prevalent.

Many of the sandhills present were last harvested many years ago and have been replanted with longleaf pine. In these areas the canopy consists of uniform age and height longleaf pine with turkey oak often the same height as the pines. The understory in these areas is often somewhat depauperate due to the past disturbance, and bare soil cover is greater than what would be desired, especially for prescribed burning purposes. Shrubs include saw palmetto, false rosemary, bush goldenrod, Adam's needle, pricklypear, and shiny blueberry. Herbs include wiregrass, narrowleaf silkgrass, goldenaster, witchgrass, dogtongue wild buckwheat, Gulf Coast lupine, and Apalachicola wild indigo.

There remain a few stands of dense canopy of either slash pine (*Pinus elliottii*) or sand pine which continue to negatively impact the understory, which is very sparse due to the closed canopy. Shrubs include saw palmetto, bush goldenrod, pricklypear, and Adam's needle. Herbs include wiregrass, Apalachicola wild indigo, and sandy field beaksedge. Litter cover is typically high in these areas. The sandhills that have not been under intensive timber management for some time and have experienced frequent fire are on track to meeting desired future conditions. In these areas, an open, uneven-aged longleaf pine canopy is present, with a sub-canopy of scattered turkey oak. The understory is a diverse mixture of shrubs and herbs with most of the species mentioned in the above section present. Wiregrass is abundant and the threatened, endemic Gulf Coast lupine is present, sometimes locally common.

The non-native, invasive species lantana (*Lantana camara*), cogon grass (*Imperata cylindrica*), and Chinese tallow tree (*Sapium sebiferum*) were present in disturbed areas of sandhill.

Fire Management

Sandhills depend on frequent, low-intensity fires to maintain a diverse herbaceous layer and to reduce hardwood invasion. Historically, sandhills would have naturally burned every 1 to 3 years, ignited by lightning in late spring and early summer. Prescribed fires typically would be implemented within this natural burn cycle and during the early spring and late summer to encourage herbaceous species growth and diversity. However, based on past experience by FFS staff, in many areas the sandhill soils at PWSF are of such a poor quality that efforts at burning any more frequently than every four years will not allow time for grasses and other fuels to grow so that fire may be carried through a stand. Prescribed fires will be conducted as the opportunities and fuel conditions permit so as to reduce hardwood abundance and encourage herbaceous species growth and diversity.

Management Actions

Minimize soil disturbance during pine harvesting and planting. Intensive site preparation may be avoided where appropriate to protect the fragility of groundcover vegetation under xeric conditions. Minimizing soil disturbances may increase herbaceous species abundance, especially wiregrass, in recently harvested areas. Treat and monitor non-native, invasive species.

The sandhill community may be restored where necessary through the removal of off-site slash pine and sand pine, the planting of longleaf pine at an appropriate stocking, and the use of frequent prescribed fire. Where soil and groundcover conditions permit, mechanical and herbicide treatments may be used to ensure the success of any reforestation or restoration efforts. Forest stands will continue to be monitored during field inventory site visits to assess the need for timber thinning to ensure forest health and productivity. All stands may be burned every four years to improve groundcover health and diversity. More frequent fire return interval (every 2 years) may aid in reducing the encroachment of sand pine in the more heavily invaded areas. In stands where prescribed burning is not always an option, biomass harvesting will be evaluated as an option to mimic the effects of fire.

D. Scrubby Flatwoods

Description

Mature scrubby flatwoods are forests with a longleaf pine canopy and a sparse shrubby understory, with areas of bare sand occurring on slightly elevated, relictual sandbars and dunes. On Point Washington State Forest, scrubby flatwoods are found mostly along the northern boundary, being more common in the western end of the property, and are usually associated with sandhill and mesic flatwoods, often as a transitional community between them. Scrubby flatwoods also occur along floodplain and basin swamps near Choctawhatchee Bay where the sands are more readily drained by the adjacent stream. Desired conditions for scrubby flatwoods is a canopy of older longleaf pine (*Pinus palustris*) with a sub-canopy of scattered longleaf pine saplings, along with an occasional bluejack oak (*Quercus incana*), sand live oak (*Quercus geminata*), and turkey oak (*Quercus laevis*). Shrubs may dominate the understory. Shrubs consist of Chapman's oak (*Quercus chapmanii*), sand live oak, myrtle oak (*Quercus myrtifolia*), dwarf live oak (*Quercus minima*), dwarf huckleberry (*Gaylussacia dumosa*), flatwoods St. John's wort (*Hypericum microsepalum*), false rosemary (*Conradina canescens*), bush goldenrod (*Chrysoma pauciflosculosa*), gopher apple (*Licania michauxii*), rusty staggerbush (*Lyonia ferruginea*), pricklypear (*Opuntia humifusa*), saw palmetto (*Serenoa repens*), shiny blueberry (*Vaccinium myrsinites*), deerberry (*Vaccinium stamineum*), and Adam's needle (*Yucca filamentosa*). Herbs include wiregrass (*Aristida stricta* var. *beyrichiana*), vanillaleaf (*Carphephorus odoratissimus*), October flower (*Polygonella polygama*), bracken fern (*Pteridium aquilinum*), sandyfield beaksedge (*Rhynchospora megalocarpa*), plumed beaksedge (*Rhynchospora plumosa*), Florida dropseed (*Sporobolus floridanus*), and yellow-eyed grass (*Xyris* spp.). Epiphytes are absent. Vines are infrequent and include earleaf greenbrier (*Smilax auriculata*), sarsaparilla vine (*Smilax pumila*), and muscadine (*Vitis rotundifolia*).

It is important to mention that along the north boundary east of County Road 283 North and along East Point Washington Road, where the road crosses McQuage Bayou, a small area of hardwood forest consisting of live oak (*Quercus virginiana*), southern magnolia (*Magnolia grandiflora*), sourwood (*Oxydendrum arboreum*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), and American witch-hazel (*Hamamelis virginiana*) occurs along the slope down to the adjacent estuarine tidal swamp. This is considered to be a result of a fire shadow and possibly hydrologic disturbance caused by East Point Washington Road. It is characterized as scrubby flatwoods due to the uplands to the east, which are heavily encroached by sand pine and share the same signature in the historic photos, being scrubby flatwoods.

Current Condition

Most of the scrubby flatwoods currently found on PWSF are on track to meeting desired conditions. Some areas are only slightly fire suppressed, while other areas have been encroached by sand pine (*Pinus clausa*). Most areas have a canopy of longleaf pine with some older mature pines present. Slash pine (*Pinus elliottii*) occasionally comprises the canopy or is mixed in with longleaf pine. Areas encroached by sand pine typically have semi-closed to closed canopies. Encroachment of sand pine is likely due to lack of frequent fire in these areas. The sub-canopy consists of younger longleaf pine along with southern magnolia, sand live oak, bluejack oak, and an infrequent turkey oak. Southern magnolia is typically found in areas that have not experienced frequent fire. Shrubs include Chapman's oak, sand live oak, myrtle oak, dwarf live oak, dwarf huckleberry, flatwoods St. John's wort, false rosemary, bush goldenrod, gopher apple, rusty staggerbush, pricklypear, saw palmetto, shiny blueberry, deerberry, wild olive (*Osmanthus americanus*), black cherry (*Prunus serotina*), and Adam's needle. Wild olive and black cherry are found in areas that have not experienced frequent fire. Herbs include wiregrass, vanillaleaf, October flower, bracken fern, sandyfield beaksedge, plumed beaksedge, Florida dropseed, broomsedge bluestem (*Andropogon virginicus*), and yellow-eyed grass. Epiphytes are absent. Vines are infrequent and include earleaf greenbrier, sarsaparilla vine, and muscadine.

Fire Management

Scrubby flatwoods burn less frequently than the surrounding mesic flatwoods. This results from the general incombustibility of the oak litter, as well as the many bare sand patches that inhibit the spread of fire. Natural fire frequency is likely every 5 to 8 years. More frequent burning may likely be required during this ten year cycle to continue to control for competing hardwoods such as turkey oak and any encroaching sand pine recruitment.

Management Actions

FFS may clearcut harvest any remaining merchantable sand pine and selectively thin the slash pine. Following these harvests, longleaf pine may be planted on the clearcut sites and inter-planted throughout the thinned slash pine stands. Once the longleaf is established, fire may be reintroduced on a 2 to 4 year rotation to control the competing sand pines and hardwoods. Fire rotation will be less frequent in those intact scrubby flatwoods where those conditions are not present.

(Note: the following two communities – Basin Swamp and Floodplain Swamp are shown in the 2016 FNAI draft Current Natural Community Map as Basin Swamp)

E. Basin Swamp

Description

Basin swamps are irregularly shaped, forested wetlands not associated with rivers or streams. On PWSF, basin swamps occur throughout the property. The desired condition for basin swamps on Point Washington State Forest is a canopy dominated by pond cypress (*Taxodium ascendens*). Swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), Carolina ash (*Fraxinus caroliniana*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), swamp dogwood (*Cornus foemina*), and Carolina willow (*Salix caroliniana*) may be found in varying amounts and form the sub-canopy. Shrubs dominate the understory vegetation and consist of coastal sweetpepperbush (*Clethra alnifolia*), fetterbush (*Lyonia lucida*), titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), Apalachicola St. John's wort (*Hypericum chapmanii*), and hawthorns (*Crataegus* spp.), among others. Herbs are sparse due to the closed overstory and long hydroperiod. Herbs present include flatsedge (*Cyperus* spp.), sedge (*Carex* spp.), spikerush (*Eleocharis* spp.), pipewort (*Eriocaulon* spp.), maidencane (*Panicum hemitomom*), beaksedge (*Rhynchospora* spp.), bulltongue arrowhead (*Sagittaria lancifolia*), pickerelweed (*Pontederia cordata*), bladderwort (*Utricularia* spp.), Virginia chain fern (*Woodwardia virginica*), Carolina redroot (*Lachnanthes caroliniana*), and yellow-eyed grass (*Xyris* spp.). Curtiss' sandgrass (*Calamovilfa curtissii*) and wiregrass (*Aristida stricta*) occur in the ecotone to the surrounding upland, which is often herb dominated. Epiphytes are found occasionally and consist of Spanish moss (*Tillandsia usneoides*). Woody vines are infrequent to occasional and primarily consist of laurel greenbriar (*Smilax laurifolia*) and climbing hydrangea (*Decumaria barbara*).

Current Condition

Currently, the basin swamps on PWSF contain many of the species mentioned above, but are recovering from past timbering operations and years of fire suppression. Pond cypress is often found in the canopy, along with sweetbay (*Magnolia virginiana*) and slash pine (*Pinus elliottii*). The understory consists of myrtle dahoon, coastal sweetpepperbush, fetterbush, titi, and black titi. Herbs are sparse and include yellow-eyed grass, cinnamon fern (*Osmunda cinnamomea*), and Carolina redroot. A herb-dominated ecotone is absent in most of the basin swamps. Epiphytes are found infrequently and include Spanish moss. Woody vines are occasional and consist of laurel greenbrier (*Smilax laurifolia*).

Fire Management

Basin swamps rarely experience fire due to the extended hydroperiod. The natural fire return interval may be from 3 to 150 years with the more frequent fire interval occurring along the ecotones. Light ground fires maintain a cypress-dominated swamp by reducing hardwood invasion and peat accumulation, and create an herb dominated ecotone. Large fires may burn away the peat, lowering the ground surface and thus creating a lake.

Management Actions

FFS will try to minimize hydrologic disturbances such as ditches and roads. Routine fire in the adjacent upland communities may be used to help manage the titi and other bay trees that

have invaded the ecotones and adjacent upland habitat of the basin swamps. As a result, the edges of basin swamps will be burned in rotation with these adjacent stands and fire will be encouraged to push into the edges of basin swamps as soil moisture conditions permit. If or when an invasive species is found, the proper treatment technique will be used to eliminate it from the swamps.

F. Floodplain Swamp

Description

Floodplain swamps are forested wetlands associated with rivers or streams, which are inundated for much of the year. Floodplain swamps are extensive on PWSF and are associated with Peach Creek, Camp Creek, Bowman Bayou, Littles Bayou, and McQuage Bayou (names from 1994 USGS 7.5 minute topographic map), along with many small, unnamed streams that flow through the property. These seepage streams drain both into the Choctawhatchee Bay to the north and many of the coastal dune lakes, including Eastern Lake, to the south. Desired condition for floodplain swamps is a canopy dominated by pond cypress (*Taxodium ascendens*) and/or bald cypress (*Taxodium distichum*). Swamp tupelo (*Nyssa sylvatica* var. *biflora*), laurel oak (*Quercus laurifolia*), sweetgum (*Liquidambar styraciflua*), swamp bay (*Persea palustris*), red maple (*Acer rubrum*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), dahoon (*Ilex cassine*), American elm (*Ulmus americana*), and Carolina ash (*Fraxinus caroliniana*). The understory is comprised mostly of shrubs with herbs sparse in most areas but frequent to abundant in light gaps. Understory shrubs include dwarf palmetto (*Sabal minor*), American witch-hazel (*Hamamelis virginiana*), bastard indigobush (*Amorpha fruticosa*), titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), wild olive (*Osmanthus americanus*), azalea (*Rhododendron* spp.), coastal sweet pepperbush (*Clethra alnifolia*), bayberry (*Myrica* spp.), buttonbush (*Cephalanthus occidentalis*), St. Andrew's cross (*Hypericum hypericoides*), large gallberry (*Ilex coriacea*), Florida anise (*Illicium floridanum*), eastern sweetshrub (*Calycanthus floridus*), fetterbush (*Lyonia lucida*), hawthorn (*Crataegus* spp.), and highbush blueberry (*Vaccinium corymbosum*). Herbs include wood oats (*Chasmanthium* spp.), partridgeberry (*Mitchella repens*), sedge (*Carex* spp.), green arrow arum (*Peltandra virginica*), tall nutgrass (*Scleria triglomerata*), switchcane (*Arundinaria gigantea*), lobelia (*Lobelia* sp.), Georgia Indian plantain (*Arnoglossum sulcatum*), white Indian plantain (*Arnoglossum album*), nodding nixie (*Apteria aphylla*), swamp leather flower (*Clematis crispa*), witchgrass (*Dichanthelium* spp.), panic grass (*Panicum* spp.), twoleaf watermill foil (*Myriophyllum heterophyllum*), Virginia chain fern (*Woodwardia virginica*), royal fern (*Osmunda regalis*), cinnamon fern (*Osmunda cinnamomea*), shortbristle horned beaksedge (*Rhynchospora corniculata*), sandbog deathcamas (*Zigadenus glaberrimus*). Sawgrass (*Cladium jamaicense*) may be found at the swamps mouth where it meets estuarine tidal marsh. Epiphytes are infrequent to occasional and consist of Spanish moss (*Tillandsia usneoides*). Vines are found frequently and include laurel greenbrier (*Smilax laurifolia*), sarsaparilla vine (*Smilax pumila*), muscadine (*Vitis rotundifolia*), Carolina jessamine (*Gelsemium sempervirens*), and climbing hydrangea (*Decumaria barbara*).

The small, linear streams that connect many of the larger swamps do not contain a diversity of large trees but instead consist of a shrub-dominated edge. Titi, black titi, fetterbush, and sweetbay form a thicket along the edge, where fire is extinguished by the saturated soils

along the stream. Fires may occasionally burn across these streams and create an open stream amidst the surrounding upland community.

Current Condition

The floodplain swamps currently found on PWSF are dominated by baygall type vegetation, likely caused by lack of fire along the periphery of the swamps and past cypress harvest. Typically, the swamps have a canopy of pond cypress, though in some swamps cypress is absent. Other canopy species include sweetbay (*Magnolia virginiana*), swamp tupelo, red maple, Carolina ash, dahoon, American elm, southern magnolia (*Magnolia grandiflora*), and slash pine (*Pinus elliottii*). The understory is shrub-dominated and consists of titi, black titi, coastal sweetpepperbush, bayberry, large gallberry, Florida anise, St. Andrew's cross, fetterbush, and southern dewberry (*Rubus trivialis*). Herbs are generally sparse and include wood oats, cinnamon fern, royal fern, Virginia chain fern, and Carolina redroot (*Lachnanthes caroliniana*). Sawgrass is found in areas where the swamps reach estuarine tidal marsh. Epiphytes are infrequent to occasional and consist of Spanish moss. Vines are occasional to common and include laurel greenbriar, sarsaparilla vine, and muscadine.

Fire Management

Floodplain swamps are usually too wet to support fires. However, fires in surrounding uplands that creep into the swamp edges are important to reduce pine and bay species invasion. The larger swamps naturally burned more frequently on the periphery (3 to 5 years) and less frequently in the center (100 to 150 years). The small, narrow swamps likely experienced fire when the surrounding uplands burned every 3-5 years. These linear streams, depending on soil moisture at the time, could have burned through, leaving an open seepage stream amidst the surrounding uplands. Natural fires occur predominantly during the spring and early summer (March through June).

Management Actions

Natural hydrology is crucial for maintaining species diversity and water quality. FFS will try to promote the natural flow of water across the landscape. Culverts and low-water crossings will be maintained and installed, where necessary, along roads and breaks to promote the continued natural movement of the water. FFS will try to enhance species diversity in ecotones and decrease baygall and pine encroachment through prescribed burning of adjacent communities. Prescribed fire will continue to be pushed into these swamp edges more intensively as conditions allow and be permitted to extinguish naturally. This will help control titi and other species that have grown to dominate the stands.

G. Dome Swamp

Description

Dome swamps are forested, isolated wetlands typically dominated by pond cypress (*Taxodium ascendens*). Dome swamps are generally circular in outline and the trees growing in the deeper center grow taller than the trees around the periphery creating a dome like appearance. Dome swamps are scattered throughout PWSF. The desired condition for dome swamps on PWSF is a canopy dominated by pond cypress. Swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), and myrtle dahoon (*Ilex cassine* var. *myrtifolia*) comprises an open sub-canopy and may be present in the canopy as well. The understory

consists primarily of shrubs, due to the canopy and sub-canopy, but a diverse herb layer is present. Understory shrubs include coastal sweet pepperbush (*Clethra alnifolia*), titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), fetterbush (*Lyonia lucida*), Apalachicola St. John's Wort (*Hypericum chapmanii*), and highbush blueberry (*Vaccinium corymbosum*). Herbs include sawgrass (*Cladium jamaicense*), shortbristle horned beaksedge (*Rhynchospora corniculata*), spreading beaksedge (*Rhynchospora divergens*), Carolina redroot (*Lachnanthes caroliniana*), Virginia chain fern (*Woodwardia virginica*), wrinkled joint tail grass (*Coelorachis rugosa*), tenangle pipewort (*Eriocaulon decangulare*), eastern purple bladderwort (*Utricularia purpurea*), false nettle (*Boehmeria cylindrica*), sedges (*Carex* spp.), flatsedges (*Cyperus* spp.), false daisy (*Eclipta prostrata*), marsh pennywort (*Hydrocotyle* spp.), combleaf mermaidweed (*Proserpinaca pectinata*), yellow eyed grasses (*Xyris* spp.), and rose gentians (*Sabatia* spp.). An herb-dominated ecotone is present, and consists of wiregrass (*Aristida stricta* var. *beyrichiana*) and Curtiss' sandgrass (*Calamovilfa curtissii*). Epiphytes are occasional and consist of Spanish moss (*Tillandsia usneoides*). Vines are occasional and consist of laurel greenbriar (*Smilax laurifolia*) and climbing hydrangea (*Decumaria barbara*).

Current Condition

Many of the dome swamps present on the property are in line to meeting desired conditions though many of them have been logged in the past and in some cases pond cypress is absent. Canopy species include pond cypress, swamp tupelo, slash pine (*Pinus elliottii*), and water oak (*Quercus nigra*). Understory species include myrtle dahoon, swamp bay (*Persea palustris*), black titi, titi, and Apalachicola St. John's wort. Herbs include flattened pipewort (*Eriocaulon compressum*), shortbristle horned beaksedge, and yellow eyed grass. Dome swamps that have experienced frequent fires have an herb-dominated ecotone of wiregrass (*Aristida stricta* var. *beyrichiana*) and occasionally Curtiss' sandgrass. Epiphytes are uncommon and include Spanish moss. Vines are occasional and include laurel greenbriar.

Fire Management

Fire is essential for maintaining the dome swamp community. In the absence of fire, baygall species and pines may invade the community. The periphery of the dome swamp experiences fire more often than the center, as fire will often creep into the swamp from surrounding uplands but extinguish itself before reaching the center. Historically, the peripheral areas may naturally experience fire every 2 to 5 years, while the center may go 100 to 150 years.

Management Actions

FFS will try to minimize hydrological disturbances and allow fires from surrounding uplands to creep into the swamps. During silvicultural activities in surrounding uplands, FFS will comply with Silvicultural BMPs to help minimize hydrological and soil disturbances and avoid placing roads and ditches near dome swamps. FFS will continue to allow prescribed fire to run into the dome swamp edges to mimic a natural fire, when conditions allow. These ecotones will be exposed to fire at the fire frequency of the adjacent community, which in general will be every 2 to 4 years. In swamps where there is a high amount of peat or duff, fire will be introduced slowly so that impacts to feeder roots of the canopy species are minimized to avoid unnecessary cypress mortality.

H. Scrub

Description

Scrub is characterized as a xeric forest occurring on deep sandy ridges along former shorelines. The vegetation is dominated by xerophytic shrubs, with ground lichens and bare sand common. On PWSF, scrub is restricted to along the southern boundary, usually on higher knolls than the surrounding uplands, either sandhill or scrubby flatwoods. Desired conditions for scrub consists of a sand pine (*Pinus clausa*) canopy of variable density with an understory dominated by shrubs. Turkey oak (*Quercus laevis*) is infrequently found in the sub-canopy. Shrub species include Chapman's oak (*Quercus chapmanii*), sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*), bush goldenrod (*Chrysoma pauciflosculosa*), false rosemary (*Conradina canescens*), rusty staggerbush (*Lyonia ferruginea*), saw palmetto (*Serenoa repens*), Adam's needle (*Yucca filamentosa*), and Florida rosemary (*Ceratiola ericoides*). Herbs are typically infrequent and include dogtongue wild buckwheat (*Eriogonum tomentosum*), largeleaf jointweed (*Polygonella macrophylla*), sandyfield beaksedge (*Rhynchospora megalocarpa*), Godfrey's goldenaster (*Chrysopsis godfreyi*), and Cruise's goldenaster (*Chrysopsis gossypina* var. *cruiseana*). Ground lichens (*Cladonia* spp.) and bare soil are common. Epiphytes are absent. Vines include earleaf greenbrier (*Smilax auriculata*).

Current Condition

The scrub present on PWSF is generally on track to meeting desired conditions. Typical for scrub habitat in this area of the Florida panhandle, most of this community has a canopy of sand pine. Turkey oak is infrequent, but occasionally present in the sub-canopy. Xerophytic shrubs such as Chapman's oak, sand live oak, myrtle oak, bush goldenrod, false rosemary, rusty staggerbush, saw palmetto, Adam's needle, and Florida rosemary dominate the understory. Herbs are sparse and consist of dogtongue wild buckwheat, largeleaf jointweed, and sandyfield beaksedge. Ground lichens (*Cladonia* spp.) and bare soil are common. Epiphytes are absent. Vines include earleaf greenbrier (*Smilax auriculata*).

Fire Management

Natural fires are not as frequent in scrub as in other upland community types due to the general incombustibility of fuels, namely oak leaves and the small sand pine needles, and the lack of fine fuels to carry the fire. Historically, scrub likely experienced catastrophic fires every 20 to 80 years which would serve to "reset" the habitat to early plant succession conditions. More frequent low intensity fires may have burned spotty areas, especially along the edges every 10 to 20 years. The scrub on PWSF largely consists of a fairly open mature sand pine canopy and a heavy oaky midstory. Also challenging to traditional scrub management burn strategies at PWSF are the small size and broken up nature of the historic scrub communities as well as their close association with busy highways and residential communities. Because of these conditions and the location of the PWSF scrub, management activities will first and foremost focus on wildfire mitigation along the state forest perimeter. Habitat management where appropriate will likely include timber harvest (pine & hardwood), mechanical and/or chemical treatments to manage and reduce undesired woody vegetation.

Prescribed burning treatments may be limited to adjacent pyrogenic communities and would only be used within the stands when wildfire and smoke intrusion risks can be fully mitigated.

Management Actions

FFS will work with the community to minimize trash dumping along the foot trails and monitor construction of adjacent properties to ensure that unnecessary erosion is not caused. Silvicultural activities may include harvesting of merchantable mature pines in areas where sand pine is prevalent followed by burning to control any undesired sand pine regeneration. Mechanical and/or chemical treatments of vegetation may be used to facilitate restoration of the scrub community and encourage early succession scrub endemics typical of the coastal panhandle.

I. Salt Marsh

Salt marsh is a largely herbaceous community that occurs in the portion of the coastal zone affected by tides and seawater, and protected from large waves, either by the broad, gently sloping topography of the shore, by a barrier island, or by location along a bay or estuary. The width of the intertidal zone depends on the slope of the shore and the tidal range. Salt marsh may have distinct zones of vegetation, each dominated by a single species of grass or rush. Salt marsh cordgrass (*Spartina alterniflora*) dominates the seaward edge and borders of tidal creeks, areas most frequently inundated by the tides. Needle rush (*Juncus roemerianus*) dominates higher, less frequently flooded areas. Needle rush and salt marsh cordgrass both tolerate a wide range of salinities, but cordgrass is found where the marsh is flooded almost daily, whereas needle rush is found where the marsh is flooded less frequently.

The landward edge of the marsh is influenced by freshwater influx from the uplands and may be colonized by a mixture of high marsh and inland species, including needle rush, sawgrass (*Cladium jamaicense*), salt meadow cordgrass (*Spartina patens*), Gulf cordgrass (*Spartina spartinae*), and sand cordgrass (*Spartina bakeri*). Salt marsh soils range from deep mucks with high clay and organic content in the deeper portions to silts and fine sands in higher areas. The organic soils have a high salinity, neutral reaction, and high sulfur content. Fires probably occurred sporadically, either by spreading from nearby uplands or from lightning strikes in the marsh itself.

Current Condition

Salt marsh occurs along the north property boundary where they receive tidal flow through small bayous from Choctawhatchee Bay, as well as near the southeast corner of the property in association with Eastern Lake. This habitat is considered to be in its desired condition according to the 2006 FNAI report.

Fire Management:

Fires typically do not occur in salt marshes in the Florida panhandle.

Management Actions

No significant management actions are required. FFS will monitor the local mosquito district's implementation of an approved arthropod control plan and minimize hydrological disturbances and any trash dumping

J. Coastal Dune Lake

Description

Coastal dune lakes are characterized as shallow, irregularly shaped basins occurring in coastal communities. These are generally permanent water bodies, with most of their water derived through lateral seepage of ground water from the surrounding uplands. Salinity of coastal dune lakes varies over the long term due to large inputs of salt water during major storm events. Open water is the dominant feature and vegetation is usually restricted to a narrow band along the lakeshore. Only one coastal dune lake, Eastern Lake, occurs on PWSF. The desired condition for Eastern Lake is an open water dominated lake with a narrow band of vegetation along the shore consisting of sawgrass (*Cladium jamaicense*) and needle rush (*Juncus roemerianus*).

Current Condition

The one coastal dune lake found on the property meets desired conditions. The lake is dominated by open water with a ring of sawgrass and needle rush.

Fire Management:

Fires do not occur in coastal dune lakes.

Management Actions

Minimize hydrological disturbances, erosion into the lake, and trash dumping. Monitor local mosquito district's implementation of an approved arthropod control plan. FFS will follow all Silvicultural BMPs when performing any timber harvests or prescribed burns near the lake.

K. Wet Prairie

(Note: In the 2006 FNAI natural community survey, wet prairies were not adequately surveyed nor included in the report or historical natural community mapping. Only a short reference was made in the Wet Flatwoods report regarding their presence. The draft FNAI 2016 current natural community mapping suggest as many as 938 acres of this sensitive community may exist at PWSF.)

Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs or dome swamps, and slightly higher wet or mesic flatwoods. It is typically dominated by dense wiregrass in the drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly (*Muhlenbergia expansa*), yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty (*Rhexia alifanus*). Wetter portions may include, plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*). Also common in wetter areas are carnivorous species, such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.). Species present in

Panhandle wet prairies and not in those of the peninsula include thistleleaf aster (*Eurybia eryngiifolia*), Chapman's aster (*Symphyotrichum chapmanii*), Florida pineland spurge (*Euphorbia inundata*), and Chapman's butterwort (*Pinguicula planifolia*). In the peninsula, Curtiss' dropseed (*Sporobolus curtissii*), blue maidencane (*Amphicarpum muhlenbergianum*), cutthroat grass (*Panicum abscissum*), or Gulf hairawn muhly (*Muhlenbergia sericea*) may also be dominants or co-dominants with wiregrass.

Wet prairie usually occurs on acidic, nutrient-deficient, saturated soils. They can also be found on poorly drained fine sands. Wet prairies are sensitive to relatively slight physical alterations to the soil surface which can permanently alter the hydrology. Natural fires likely entered wet prairie from surrounding pinelands and burned through them when they were dry enough to carry fire. In the absence of fire, woody shrubs may encroach on wet prairie from both the bordering uplands (e.g. gallberry, wax myrtle (*Myrica cerifera*)) and wetlands (e.g. peelbark St. John's wort (*Hypericum fasciculatum*), titi (*Cyrilla racemiflora*), and black titi (*Cliftonia monophylla*) and eventually shade out the sun-loving herbaceous species. A further indication of their dependence on fire is the requirement for fire to stimulate flowering in many wet prairie herbs, including two of the dominant grasses, wiregrass and cutthroat grass.

Current Condition

FNAI reported in 2016 (personal correspondence from D. Hipes):

Most of that acreage appeared open and herbaceous in the 1949 photography but is currently encroached by woody vegetation including titi and other hydrophytic shrubs. These encroached areas no longer resemble wet prairies, appearing more like baygall or shrub bog..... While characteristic wet prairie species including parrot pitcherplant (*Sarracenia psittacina*) and white-top pitcherplant (*Sarracenia leucophylla*) occur in many areas, shrub encroachment threatens a large proportion of this natural community.

Many of the wet prairies and seepage areas are located on the western and southern edge of the forest. There is one outparcel on the eastern edge that has been burned on a four year interval. The tracts to the west do not get burned as often as needed because of Wildland Urban Interface issues discussed earlier in this plan. As a result, these stands have thicker vegetation than typically found in a wet prairie. Fire is being reintroduced into these stands, but very slowly due to the location, traffic, and populations surrounding the tracts.

Fire Management

Historically, natural fires would have spread across wet prairies every 2 to 3 years from surrounding mesic and wet flatwoods when dry enough to burn. Fires typically would have occurred during the lighting season. Temporal differences (seasonality) of these fires and variations in hydroperiods may have positively influenced plant species diversity.

Management Actions

FFS staff will attempt to reduce titi and other shrubby invasion into the wet prairies through prescribed fire whenever possible, especially where the presence of imperiled species such as white-top pitcherplant has been confirmed. Initially, these fires may be dormant season burns. In the future, once shrubby fuels can be reduced through repeated dormant season

burns, FFS may attempt to introduce growing season fires, where possible. Burning in wet prairies will occur in conjunction with planned burns on adjacent mesic flatwoods and wet flatwoods sites and therefore, the fire rotations will range from 1-4 years on average. In some areas on the western tracts of the forest, the Wildland Urban Interface issues may be so challenging that full restoration of some wet prairies may not be feasible due to safety concerns using fire. Where burning is not an option, mechanical treatments may be explored as an alternative management strategy. In wet prairies where a heavy invasion of titi and other shrubs has occurred, FFS will also consider use of mechanical treatments as an initial management strategy before introducing fire. Where pines or larger hardwoods have invaded wet prairies, FFS may use timber harvests on adjacent uplands as opportunity to remove these trees while adhering to all applicable Silviculture BMPs. Additionally, FFS will minimize any hydrological disturbances and monitor local mosquito district's implementation of an approved arthropod control plan.

VIII. References

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IX. Glossary of Abbreviations

ARC	Acquisition and Restoration Council
BMP	Best Management Practices
BOT.....	Board of Trustees
CARL.....	Conservation and Recreation Lands
DACS.....	Department of Agriculture and Consumer Services
DEP.....	Department of Environmental Protection
DHR.....	Division of Historical Resources
DOD.....	U.S. Department of Defense
DRP.....	DEP, Division of Recreation and Parks
FDOT	Department of Transportation
FF	Florida Forever
FFS.....	Florida Forest Service
FNAI.....	Florida Natural Areas Inventory
FWC.....	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
GPS	Global Positioning System
NWFWMD	Northwest Florida Water Management District
OFW.....	Outstanding Florida Water
OLAE.....	Office of Agricultural Law Enforcement
P2000	Preservation 2000
PWSF.....	Point Washington State Forest
RTC.....	Resolution Trust Corporation
SWFD	South Walton Fire District
TNC.....	The Nature Conservancy
TPA.....	Trees Per Acre
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area