



FLORIDA DEPARTMENT OF Environmental Protection

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3900 Commonwealth Boulevard
Tallahassee, FL 32399

Ron DeSantis
Governor

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Lt. Governor

Shawn Hamilton
Secretary

April 17, 2023

Mr. Brian Camposano
Florida Forest Service
Department of Agriculture and Consumer Services
3125 Conner Boulevard, Room 236
Tallahassee, Florida 32399-1650

RE: Watson Island State Forest – Lease No. 3556

Dear Mr. Camposano:

On **April 14, 2023**, the Acquisition and Restoration Council (ARC) recommended approval of the **Watson Island State Forest** management plan. Therefore, Division of State Lands, Office of Environmental Services (OES), acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the **Watson Island State Forest** management plan. The next management plan update is due April 14, 2033.

Pursuant to s. 253.034(5)(a), F.S., each management plan is required to describe both short-term and long-term management goals and include measurable objectives to achieve those goals. Short-term goals shall be achievable within a 2-year planning period, and long-term goals shall be achievable within a 10-year planning period. Upon completion of short-term goals, please submit a signed letter identifying categories, goals, and results with attached methodology to the Division of State Lands, Office of Environmental Services.

Pursuant to s. 259.032(8)(g), F.S., by July 1 of each year, each governmental agency and each private entity designated to manage lands shall report to the Secretary of Environmental Protection, via the Division of State Lands, on the progress of funding, staffing, and resource management of every project for which the agency or entity is responsible.

Pursuant to s. 259.036(2), F.S., management areas that exceed 1,000 acres in size, shall be scheduled for a land management review at least every 5 years.

Pursuant to s. 259.032, F.S., and Chapter 18-2.021, F.A.C., management plans for areas less than 160 acres may be handled in accordance with the negative response process. This process requires small management plans and management plan amendments be submitted to the Division of State Lands for review, and the Acquisition and Restoration Council (ARC) for public notification. The Division of State Lands will approve these

Mr. Brian Camposano

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April 17, 2023

plans or plan amendments submitted for review through delegated authority unless three or more ARC members request the division place the item on a future council meeting agenda for review. To create better efficiency, improve customer service, and assist members of the ARC, the Division of State Lands will notice negative response items on Thursdays except for weeks that have State or Federal holidays that fall on Thursday or Friday. The Division of State Lands will contact you on the appropriate Friday to inform you if the item is approved via delegated authority or if it will be placed on a future ARC agenda by request of the ARC members.

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

Sincerely,

Deborah Burr
Office of Environmental Services
Division of State Lands

TEN-YEAR LAND MANAGEMENT PLAN

FOR THE

WATSON ISLAND STATE FOREST

ST. JOHNS COUNTY



PREPARED BY THE

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

FLORIDA FOREST SERVICE

APPROVED ON

APRIL 14, 2023

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
WATSON ISLAND STATE FOREST



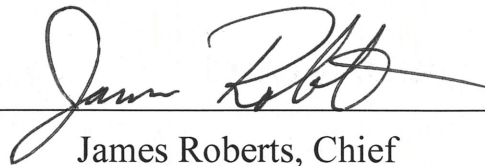
Approved by:



Richard Dolan, Director
Florida Forest Service

4/17/23

Date



James Roberts, Chief
Forest Management Bureau

4/17/23

Date

**TEN-YEAR LAND MANAGEMENT PLAN
WATSON ISLAND STATE FOREST
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**TEN-YEAR LAND MANAGEMENT PLAN
WATSON ISLAND STATE FOREST
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LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service
 COMMON NAME: Watson Island State Forest
 LOCATION: St. Johns County
 ACREAGE TOTAL: 505.58 acres

Historic Natural Communities	Approximate Acreage*
Floodplain swamp	142
Wet flatwoods	106
Bottomland forest	87
Wet prairie	59
Mesic flatwoods	32

Historic Natural Communities	Approximate Acreage*
Mesic hammock	28
Basin swamp	19
Scrubby flatwoods	3
Dome swamp	2

* A 25-acre area has not been surveyed

TIITF LEASE AGREEMENT NUMBER: 3556

USE: Single Multiple

MANAGEMENT AGENCY

Florida DACS, Florida Forest Service
 Florida Fish and Wildlife Conservation Commission
 St. Johns River Water Management District
 Department of State, Division of Historical Resources

RESPONSIBILITY

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

DESIGNATED LAND USE: Multiple-Use State Forest
 SUBLEASES: None
 ENCUMBRANCES: None
 TYPE OF ACQUISITION: Watson Island Tract was acquired in 1976 through a special warranty deed from a private individual. Warner Tract was acquired in 2005 under the Florida Forever conservation program.
 UNIQUE FEATURES: Approximately one mile of frontage on St. Johns River; freshwater swamp, live oak hammocks, pine flatwoods, and sawgrass marsh.
 ARCHAEOLOGICAL / HISTORICAL: No (0) known sites
 MANAGEMENT NEEDS: Ecosystem restoration through prescribed fire, management of timber resources including timber inventory, and boundary line maintenance.
 ACQUISITION NEEDS: 8,369 Acres of Optimal Management Boundary
 SURPLUS ACREAGE: None
 PUBLIC INVOLVEMENT: 2018 Land Management Review, St. Johns County Board of Commissioners, Management Plan Advisory Group and Public Hearing, Acquisition and Restoration Council - - - - -
 - - - - -

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

ARC Approval Date: _____ TIITF Approval Date: _____

Comments: _____

I. Introduction

One of Florida's smaller State Forests, Watson Island State Forest (WISF) is comprised of 505.58 acres located near St. Augustine in St. Johns County, about 36 miles south of Jacksonville. The Watson Island Tract (275.5 acres) is located along the St. Johns River, which acts as the western boundary of the State Forest, while the Warner Tract (230 acres) is located just a few miles inland from the St. Johns River. See Exhibit B for Boundary and Road Map.

The WISF contains several diverse ecological communities including mesic and wet flatwoods, bottomland forests, floodplain forests, and floodplain marshes. Size and access limitations have been key factors in management activities to date. Modest accomplishments in public access improvements, fuels management, restoration activities, and boundary maintenance are realizable over the next ten-year period. Funding for these activities is the most critical management need.

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 WISF center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a), Florida Statutes (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 WISF 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 non-game wildlife and plants;
- Protect known archaeological, historical, and cultural resources;
- Restore, maintain, and protect hydrological functions, related water resources, and the health of associated wetlands and aquatic communities; and
- 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, F.S., and was prepared utilizing guidelines outlined in section 18-2.021 of the Florida Administrative Code (F.A.C.). It is not an annual work plan or detailed operational plan but provides general guidance for the management of WISF for the next ten-year period and outlines the major concepts that will guide management activities on the forest.

B. Past Accomplishments

Data regarding past management activities and public use on WISF have been compiled monthly and are available from the forest manager. A table has been prepared for this plan that summarizes the accomplishments for each of the past ten years. See Exhibit A. The table does not attempt to account for all activities on WISF but summarizes major activities. Since the approval of the

previous management plan in 2010, developments and accomplishments are as follows:

- Prescribed fire applied to 258 acres
- 1 culvert installed
- 0.25-mile road constructed
- 3.8 miles of forest boundary marked or maintained
- 2.7 miles of perimeter firebreaks maintained
- 505 acres of timber inventoried
- Treatment of 5 non-native invasive plant species on approximately 3 acres

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

The following goals and objectives provide direction and focus of management resources for the next ten-year planning period. Funding, agency program priorities, and the potential for wildfire during the planning period will determine the degree to which these objectives can be met. Management activities on WISF during this period must conserve, protect, utilize, 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. Most of the management operations will be conducted by the FFS, although appropriate activities will be contracted to private sector vendors or completed with the cooperation of other agencies. All activities will enhance the property's natural resource or public recreation 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. Other activities will be completed with minimal overhead expense and existing staff.

➤ **GOAL 1: Sustainable Forest Management**

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

Performance Measures:

- Annual updates of the Five-Year Silviculture Action Plan completed
- Continued implementation of the Five-Year Silviculture Action Plan (acres treated)

Objective 2: Continue to implement the FFS process for developing stand descriptions and conducting forest inventory, including maintaining a GIS database containing forest stands, roads, and other attributes (including, but not limited to: rare, threatened, and endangered species, archaeological and historical resources, and non-native invasive species locations). (Ongoing objective)

Performance Measures:

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

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

Objective 1: Establish public access and recreation activities that are compatible with multiple-use management. (Short-term objective)

Performance Measure:

- Number of additional public access points established
- Number of new recreation activities established

Objective 2: Once established, maintain public access and recreation activities that are compatible with multiple-use management. (Ongoing objective)

Performance Measure: Number of visitor opportunities per day

Objective 3: Safely integrate human use into WISF, following the Five-Year Outdoor Recreation Plan, and update plan annually. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Outdoor Recreation Plan
- Annual updates of the Five-Year Outdoor Recreation Plan completed

Objective 4: Evaluate the potential for public access and recreation opportunities that are compatible with multiple-use management. Recreation opportunities will fall under the scope of multi-use management in accordance with watershed protection, conservation, and ecosystem restoration; and as detailed in the purpose for acquisition. (Short-term objective)

Performance Measure: Annual evaluation of additional visitor opportunities

Objective 5: Recruit volunteers and volunteer organizations to assist with recreation and / or resource management. (Ongoing objective)

Performance Measures:

- Number of volunteers and organizations that assist with projects
- Number of hours provided by volunteers

➤ **GOAL 3: Habitat Restoration, Improvement, and Fire Management**

Objective 1: The WISF currently contains approximately 223 acres of fire-dependent communities. WISF staff will plan and conduct prescribed burns in a manner that benefits these fire-dependent natural communities within the forest. To achieve an average fire-return interval of 2 to 4 years for most fire-dependent communities, FFS will attempt to conduct prescribed burns on an average of approximately 56 to 112 acres per year. Currently FFS staff estimates 141 acres at WISF are within the desired fire-return interval. (Ongoing objective)

Performance Measures:

- Number of acres burned during the dormant and growing seasons
- Number of acres burned within target fire-return interval

Objective 2: Continue to annually update and implement the Five-Year Prescribed Burning Management Plan and the prescribed burning goals. (Ongoing objective)

Performance Measures:

- Annual updates of the Five-Year Prescribed Burning Management Plan completed
- Continued implementation of the Five-Year Prescribed Burning Management Plan (acres treated)

Objective 3: Reduce the threat of wildfire within the wildland urban interface on WISF and the surrounding community through a comprehensive mitigation strategy that includes evaluating

vegetative fuels near residential areas and identifying potential fuel reduction projects. (Ongoing objective)

Performance Measures:

- Evaluation complete
- Should the evaluation determine that fuel reduction is necessary, number of acres treated for fuel reduction

Objective 4: Utilize prescribed fire to enhance restoration of native groundcover. Evaluate areas where native groundcover has been eliminated or heavily impacted from historical land use on a case by case basis for alternative methods to address reestablishment of native groundcover plants. Restore native groundcover where practical or heavily impacted from historical land use. (Long-term objective)

Performance Measure: Number of acres restored

➤ **GOAL 4: Listed and Rare Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration**

Objective 1: In cooperation with the FWC, develop a Wildlife Management Strategy addressing the wildlife species for WISF, with emphasis on imperiled species and associated management prescriptions for their habitats. (Ongoing objective)

Performance Measures:

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

Objective 2: In consultation with FWC, implement survey and monitoring protocols, where feasible, for listed and rare species. (Ongoing objective)

Performance Measure: Number of species for which monitoring is ongoing

➤ **GOAL 5: Non-native Invasive Species Management and Control**

Objective 1: Continue to follow and annually update the Five-Year Ecological Plan for WISF, to locate, identify, and control non-native invasive species. (Ongoing objective)

Performance Measures:

- Total number of acres identified and successfully treated
- Annual updates of the Five-Year Ecological Plan completed
- Continue to maintain WISF non-native invasive species database information annually

➤ **GOAL 6: Cultural and Historical Resource Management**

Objective 1: Ensure all known sites are recorded in the Department of State, Division of Historical Resources (DHR) Florida Master Site File. (Ongoing objective)

Performance Measure: Number of recorded sites

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

Performance Measure: Number of sites monitored. Reports submitted to DHR

Objective 3: Maintain at least one (1) qualified staff member as an Archaeological Resource Management (ARM) Monitor. (Ongoing objective)

Performance Measure: Number of local staff trained as ARM monitors

➤ **GOAL 7: Hydrological Preservation and Restoration**

Objective 1: Protect water resources during management activities through the implementation of Silviculture Best Management Practices (BMPs) that are applicable to forest road maintenance and construction, construction of pre-suppression fire lines, timber stand improvement activities, sinkholes, etc. (Ongoing objective)

Performance Measure: Percent compliance with Silviculture BMPs

Objective 2: Close, rehabilitate, or restore those roads, firelines, and trails that have evidence of erosion into surrounding water bodies causing alterations to the hydrology and / or water quality. (Ongoing objective)

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

Objective 3: Conduct or obtain a site assessment/study to identify potential hydrological restoration needs. (Short-term objective)

Performance Measure: Assessment conducted

➤ **GOAL 8: Capital Facilities and Infrastructure**

Objective 1: WISF staff maintain the 0.35 miles of service roads (Warner Tract). (Ongoing objective)

Performance Measure:

- Number of miles of existing roads maintained

Objective 2: Continue to implement the Five-Year Boundary Survey and Maintenance Management Plan and update annually. Approximately 20 percent of the forest boundary will be evaluated and remarked annually as necessary which includes harrowing, reposting signage, and repainting boundary trees. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Boundary Survey and Maintenance Management Plan
- Percentage of forest boundary maintained each year
- Annual updates of the Five-Year Boundary Survey and Maintenance Management Plan completed

II. Administration Section

A. Descriptive Information

1. Common Name of Property

The common name of the property is Watson Island State Forest.

2. Legal Description and Acreage

The Watson Island Tract is located in Section 41, Township 7 South, Range 27 East (197 acres), a portion of Section 16, Township 7 South, Range 27 East (77.5 acres), and a portion of the southeast corner of Section 39, Township 7 South, Range 27 East described as “East 100 feet South of SR 13” (1 acre). Total acreage for the Watson Island Tract is 275.5. The

Warner Tract is located within Section 17, Township 7 South, Range 28 East and is 230 acres in total. Detailed legal descriptions for the property can be found in lease agreement number 3556. A copy of the lease held in the Department of Environmental Protection, Division of State Lands office in Tallahassee, the FFS State Office in Tallahassee and the DeLeon Forestry Station. See Exhibit E. Acreage acquired by funding source is identified in Table 1.

Table 1. WISF Acreage by Funding Source

Funding Source	Acres
Private Donation	275.50
Florida Forever	230.08

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF) is on record at the DeLeon 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 WISF are included in Exhibit F and Table 2.

Table 2. Nearby Public Conservation Land and Easements

Conservation Tract	Agency	Distance
Meldrim Conservation Easement	DEP	Adjacent E
Turnbull Conservation Area	St. Johns County	3 miles NE
Bayard Conservation Area	SJRWMD	3 miles W
Sixmile Creek Preserve	NFLT	5 miles N
Terra Pines Conservation Easement	St. Johns County	5 miles E
Riverdale Park	St. Johns County	5 miles SW
McCullough Creek Conservation Area	St. Johns County	5 miles S
Twelve Mile Swamp Conservation Area	SJRWMD	6 miles NE
Wards Creek Mitigation Parcel	St. Johns County	6 miles NW
Palmo Fish Camp Park	St. Johns County	6 miles NW
Jack Wright Island Conservation Area	St. Johns County	7 miles NW
Mussallem Trail Head	St. Johns County	8 miles SE
Tocoi Junction Conservation Area	St. Johns County	8 miles SE
Mystery Pit Conservation Easement	St. Johns County	8 miles NE
Deep Creek Conservation Area	SJRWMD	8 miles S
Larson Tract	St. Johns County	10 miles SE
Spengler Island Conservation Area	St. Johns County	10 miles E
Stokes Landing Conservation Area	SJRWMD	11 miles NE
Shore Drive Park	St. Johns County	11 miles SE
Northwest Park	St. Johns County	12 miles SE
Green Cove Springs Nature Preserve	COGCS	12 miles NW
Sylvan West Conservation Easement	SJRWMD	5 miles NE

Conservation Tract	Agency	Distance
Julington-Durbin Preserve	SJRWMD	15 miles N
Mystery Pit Conservation Easement	St. Johns County	8 miles NE
Gourd Island Conservation Area	SJRWMD	13 miles NW
Nocatee Preserve	St. Johns County	13 miles NE
Anastasia State Park	DRP	13 miles E
Guana Tolomato Matanzas National Estuarine Research Reserve	CAMA	14 miles E
Deep Creek State Forest	FFS	14 miles NE
Moses Creek Conservation Area	SJRWMD	15 miles SE
Matanzas State Forest	FFS	16 miles SE
Faver-Dykes State Park	DRP	18 miles SE
9A Mitigation Parcels	SJRWMD	20 miles N

CAMA – Division of Coastal and Aquatic Managed Areas
DEP – Florida Department of Environmental Protection
FFS – Florida Forest Service
SJRWMD – St. Johns River Water Management District

COGCS – City of Green Cove Springs
DRP – Florida Department of Recreation and Parks
NFLT – North Florida Land Trust

4. Property Acquisition and Land Use Considerations

Watson Island Tract was acquired through a special warranty deed from a private landowner on November 18, 1976. The Watson Island Tract encompasses 275.5 acres. The Warner Tract was acquired through the Florida Forever Program on November 14, 2005. The Warner Tract encompasses 230.08 acres. See Table 3.

Table 3. Parcel Acquisition

Parcel Name	Closing Date	Lease Date	TIITF Lease No.	Acres
Watson Island	11/18/1976	3/19/1979	3556	275.50
Warner	11/14/2005	12/22/2008	3556	230.08

B. Management Authority, Purpose, and Constraints

1. Purpose for Acquisition / Management Prospectus

The Watson Island Tract was acquired as a donation to the FFS in 1976. The Warner Tract was acquired as part of the St. Johns River Blueway Florida Forever Conservation Project. The St. Johns River Blueway was designed to preserve the last remaining shorelines of the St. Johns River and several of its tributaries. The goals and objectives defined by these acquisitions include:

- Conservation of lands supporting native, relatively unaltered flora or fauna representing a natural area unique to, or scarce within, a region of Florida or larger geographical area;
- Conservation of lands supporting habitat critical to providing significant protection for an endangered or threatened species of plant or animal;
- Preserve the last remaining shorelines of the St. Johns River;
- Provision of opportunities for recreation activities that are compatible with the protection of the rare and sensitive resources;
- Restoration of altered ecosystems to correct environmental damage that has already occurred; and
- Conservation of critical forest habitats.

The overall management of WISF is guided by the Management Prospectus for the St. Johns River Blueway Project. See Exhibit R.

Management is conducted by FDACS, FFS, with assistance, as warranted, from other agencies. FFS is the manager of forest resources, recreation, water resource protection, watershed protection, and land use planning on WISF.

2. Degree of Title Interest Held by the Board

The TIITF holds fee simple title to WISF under lease agreement 3556 to provide authority to FFS. Copies of this agreement and related deeds are on file at the FFS State Office, the Department of Environmental Protection office in Tallahassee, and at the Bunnell District Office.

3. Designated Single or Multiple-Use Management

WISF is managed under a multiple-use concept by the FFS, under the authority of Chapters 253 and 589, F.S. The FFS is the lead managing agency as stated in TIITF Management Lease number 3556.

Multiple-use management is the harmonious and coordinated management of timber, recreation, conservation of fish and wildlife, forage, archaeological and historic sites, habitat and other biological resources, and water resources so 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 these resources and considering 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 WISF provide for multiple uses, 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 the WISF include, but are not limited to:

- Timber harvests – Timber harvests on WISF will be conducted to improve forest health, promote wildlife habitat, restore plant communities, and provide additional benefits.
- Apiary leases – There are currently no apiary leases on WISF. The feasibility of pursuing and establishing apiary leases on WISF in areas where appropriate will be evaluated in accordance with guidelines stated in the State Forest Handbook.
- Firewood – WISF staff may consider issuance of fuel wood permits as requested.
- Recreation fees – There is currently no recreation on WISF. The feasibility of pursuing and establishing recreation opportunities on WISF in areas where appropriate will be evaluated in accordance with guidelines stated in the State Forest Handbook.

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 253, 259, and 589, F.S.

6. Legislative or Executive Constraints

There are no known legislative or executive constraints specifically directed toward WISF.

FFS makes every effort to comply with applicable statutes, rules, and ordinances when managing the forest. For example, when public facilities are developed on State Forests, every effort is made to comply with Public Law 101-336, the Americans with Disabilities Act. As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where handicap access is structurally impractical or where providing such access would change the fundamental character of the facility being provided).

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

WISF boundary lines, 6.75 miles in total, are managed by State Forest personnel in accordance with the guidelines of the State Forest Handbook. The forest boundary lines are to be maintained by periodic clearing, repainting and reposting, and placement of State Forest boundary signs by FFS personnel. See Exhibit B.

2. Improvements

There are currently no buildings or recreation infrastructure present on the WISF.

3. On-Site Housing

There are currently no residences on WISF.

FFS may establish on-site housing (mobile / manufactured home) on WISF if deemed necessary to alleviate security and management issues. The need and feasibility for the State Forest will be evaluated and established if considered appropriate by the District Manager and approved by the FFS Director. Prior to the occurrence of any ground disturbing activity for establishing on-site housing, a notification will be sent to the DHR and Florida Natural Areas Inventory (FNAI) for review and recommendations. This type of housing will not exceed three homes per location with the possibility of more than one on-site housing location occurring if considered necessary by the District Manager and approved by the Director.

4. Operations Infrastructure

There is no operations budget for WISF. WISF is managed in conjunction with Matanzas State Forest. Personnel, budget, and equipment resources are shared between these two

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

There is currently one forester position assigned to WISF who also manages Deep Creek State Forest and Matanzas State Forest in St. Johns County. Approximately 10% of the forester's time is allocated to WISF. The Forest Area Supervisor and forest rangers for St. Johns County provide assistance and resources for projects that are associated with WISF. Resources from Bakersville and Dupont forestry tower sites are available to assist in resource management activities on the forest.

The forester will work to achieve the goals outlined in this management plan. Recreation planning and management activities as well as resource management and planning activities, such as trail flagging / identification, recreation facility placement, timber cruising, and sale administration, etc., are the responsibility of the forester under the direction of the Forest Resource Administrator and District Manager. Forest operations, such as road maintenance, operations / recreation facility maintenance, prescribed burning, etc., are the responsibility of the Forest Area Supervisor under the direction of the District Manager.

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, sewage treatment facilities, linear facilities, 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. Deadhead logging is not compatible and is not considered an appropriate use within or adjacent to the State Forest boundaries.

2. Additional Land Needs

There are 97 parcels of land comprised of 8,369 acres adjacent to WISF which should receive priority for acquisition because they would benefit the management of the property. The FFS will work with these property owners, on a willing seller basis, to acquire these parcels.

Purchasing of additional land within the optimal management boundary would facilitate restoration, protection, maintenance, and management of the natural resources on WISF. See Exhibit C.

3. Surplus Land Assessment

On conservation lands where FFS is the lead manager, FFS assesses and identifies areas for potential surplus land. This consists of an examination of resource and operational management needs, public access and recreation use, and GIS modeling and analysis.

The evaluation of WISF by FFS has determined that all portions of the area are being managed and operated for the original purposes of acquisition, as well as, 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. Therefore, no portion of the WISF is recommended for potential surplus.

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 is currently one known conflicting adjacent land use. This conflict is related to the development of the access road for the Warner tract. Currently, the access right-of-way for the forest is located between three private residences. The owners of these residences have voiced concerns about the development of the forest access road through their community.

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

Currently there are no conflicting uses on WISF regarding the Watson Island Tract. However, plans for development to the northeast and southeast of the Warner Tract may require special planning for smoke management as well as encroachment issues.

5. Compliance with Local Comprehensive Plan

This plan was submitted to the St. Johns County Board of Commissioners for review and compliance with their local comprehensive plans. See Exhibit T.

6. Utility Corridors and Easements

FFS does not favor the fragmentation of natural communities with linear facilities. Consequently, easements for such uses will be discouraged to the greatest extent practical.

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), minimize habitat fragmentation, limit disruption of management activities, including prescribed burns, and limit disruption of resource-based multiple use activities such as recreation.

There is an existing 60-foot wide by 230-foot long ingress and egress easement on the Warner Tract occupying 0.32 acres identified in a 2005 DEP Land Acquisition Survey Review. This easement extends from the end of Oscar Ashton Road to the east line of the property and provides access for three residential parcels clustered there. There are powerlines associated with the residences crossing this easement. There are no other utility lines, pipelines, linear facilities, and transportation corridors located within WISF.

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. FFS will further encourage the use

of underground cable where scenic considerations are desirable as well as encourage the development and use of wildlife crossings for unavoidable roadway development projects. Easements for such utilities are subject to the review and approval of the TIITF and WMD. Requests for linear facility uses will be handled according to the Governor and the Cabinet's linear facilities policy.

The FFS does not consider WISF suitable for any new linear facilities.

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 TIITF Management Lease number 3556. Pursuant to the management lease, the lead managing agency may enter into further agreements or to subleases on any part of the forest.

FFS will cooperate with the DHR regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, F.S. FFS will consult DHR prior to the initiation of ground disturbing activities as required per DHR guidelines.

FWC assumes law enforcement responsibilities, enforces hunting regulations, cooperatively sets hunting season dates with FFS, and conducts other wildlife management activities with input from FFS.

The SJRWMD will be consulted and involved in matters relating to water management and hydrological restoration as appropriate.

2. Law Enforcement

Primary law enforcement responsibilities will be handled by FWC law enforcement officers. Rules governing the use of WISF are stated in Chapter 5I-4, F.A.C. FWC will enforce fish and wildlife regulations and aid in enforcing State Forest rules. FWC does not currently have an officer dedicated to patrolling and enforcement on WISF. This task is shared among multiple FWC officers who also patrol and enforce laws on properties and waterways outside of WISF.

The FDACS Office of Agricultural Law Enforcement (OALE) will assist with open burning and wildfire investigations as needed. The St. Johns County Sheriff's Office provides additional assistance as needed.

Special rules under Chapter 5I-4, F.A.C. were promulgated for FDACS, FFS, to manage the use of state lands and better control traffic, and to oversee camping and other uses on State Forests.

3. Wildland Fire

The FFS has the primary responsibility for prevention, detection, and suppression of wildfires wherever they may occur. The FFS shall provide leadership and direction in the evaluation, coordination, allocation of resources, and monitoring of wildfire management and protection

(F.S. 590.01). The FFS also has the responsibility of authorizing prescribed burns (F.S. 590.02 [1][i]).

4. Public and Local Government Involvement

This plan has been prepared by FFS and will be carried out primarily by the FFS. FFS responds to public involvement through liaison committees, management plan advisory groups, public hearings, and through ongoing direct contact with user groups. A Land Management Review Team, as coordinated by the Division of State Lands, has conducted a review of management plan implementation in 2018. See Exhibit S. The review team's recommendations were addressed in this plan, as appropriate.

The plan was developed with input from the WISF Management Plan Advisory Group and was reviewed at a public hearing on October 28, 2022. A summary of the advisory group's meetings and discussions, as well as written comments received on the plan, are included in Exhibit U. The Acquisition and Restoration Council (ARC) public hearing and meeting serve as an additional forum for public input and review of the plan.

5. Volunteers

To supplement the staff assigned to WISF, the Recreation Coordinator is responsible for recruiting interested volunteers who can bring needed experience and skills to assist with the management of the forest recreation program, as well as the resource management activities to further the FFS mission. Volunteer activities may occur as one-time events or in association with long-term recurring projects and routine maintenance.

There are currently no volunteers assisting FFS staff at WISF.

6. Friends of Florida State Forest

Friends of Florida State Forests Inc. (FFSF) is a Direct Support Organization of the Florida Forest Service. FFSF supports management activities and projects on Florida's State Forests. FFSF is established by Florida Statute, supports programs within Florida's State Forests and is governed by a board of directors representing all areas of the state. Through community support, FFSF assists the FFS to expand opportunities for recreation, environmental education, fire prevention, and forest management within Florida's State Forests.

The FFSF program is referenced in Chapter 589.012, F.S. For more information visit: www.floridastateforests.org.

III. Archaeological / Cultural Resources and Protection

A. Past Uses

In the early 1900s, pine, cypress, and hardwood timber were harvested from the Watson Island Tract and then rafted down the river. This is the only significant man-made disturbance that is known to have taken place on the tract. This tract has been used for occasional hunting by a few local families for many years. Wetlands, which almost entirely surround the property, and rough undergrowth conditions, hinder public access to the property. Game species that have been hunted on this property in the past include white-tailed deer (*Odocoileus virginianus*), feral hogs (*Sus scrofa*), squirrels (*Sciurus* spp.), and wild turkeys (*Meleagris gallopavo*). Evidence of past

camping activities (small tin shed and campfire site) was found on the Watson Island Tract after the initial purchase.

The Warner Tract was predominantly planted in row crops during the 1930s and 1940s. After the 1940s, the Tract was left to naturally regenerate into slash pine (*Pinus elliottii*) and mixed hardwood and pine stands. In 1985, a wildfire burned most of the tract. In 1987, eleven acres of slash pine were planted while the remaining acres were left to naturally regenerate slash pine and mixed hardwoods in the bottomland forest community.

B. Archaeological and Historical Resources

A cultural resource assessment for the existence of archaeological and historical resources has not been conducted on the tract. However, a January 2019 review of DHR's Florida Master Site File confirmed that there are no archaeological or historical sites recorded within WISF. See Exhibit G. The DHR has indicated there is potential for existence of such sites on both tracts, though neither seems promising. On Watson Island Tract, the areas in which DHR indicates archaeological sites are most likely to occur are situated along the St. Johns River frontage and live oak hammock areas, and on Warner Tract where portions of higher ground adjoin the stream that passes through the property.

C. Ground Disturbing Activities

Representatives of DHR and FNAI will be consulted prior to the initiation of proposed ground disturbing activity as required per DHR guidelines. FFS will make every effort to protect known archaeological and historical resources, utilizing the internal approval process explained in chapter two of the State Forest Handbook. FFS will follow the "Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands" and will comply with all appropriate provisions of Section 267.061(2)(a,b), F.S. See Exhibit H. Any significant ground disturbing activity proposal will be submitted to DHR's Compliance and Review office for review prior to undertakings and allow the Division a reasonable opportunity to comment. Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of the "Interim Management Guidelines."

D. Survey and Monitoring

Currently, eight (8) local district FFS staff are trained by DHR as Archaeological Resource Management (ARM) monitors. FFS will pursue opportunities for additional personnel to receive ARM Monitor training. FFS will consult with public lands archaeologists at DHR as necessary to determine an appropriate priority and frequency of monitoring at each of the listed sites, and any protection measures that might be required. Unless required on a more frequent basis, all archaeological and historical sites within the forest will be monitored at least annually. FFS field staff will monitor the listed sites to note condition and any existing or potential threats.

Any known archaeological and historical sites will be identified on maps to aid State Forest staff and if necessary, law enforcement personnel in patrolling and protecting sites. Applicable surveys will be conducted by ARM monitors or contracted archaeologists during the process of planning and implementing multiple-use management activities. FFS personnel will remain alert for any environmentally significant resources and protective actions will be taken as necessary. In addition, FFS will seek the advice and recommendations of DHR regarding any additional

archaeological survey needs. Trained monitors may oversee limited types of ground disturbing activities in which DHR recommends monitoring. 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

The primary purpose of FFS management of WISF is to preserve the shorelines of the St. Johns River and several of its tributaries through a stewardship ethic to assure these resources will be available for future generations. Management activities will be executed in a manner to maintain and protect / enhance the hydrological resources on WISF. If problems arise, corrective action will be implemented by FFS staff under the direction of FFS's Forest Hydrology Section. Efforts will be made to monitor and protect WISF's waterbodies and their associated water quality and native plants and animals.

WISF falls within the jurisdiction of the SJRWMD. FFS will coordinate with SJRWMD and / or DEP, as necessary, on activities pertaining to water resource protection and management. Any activities requiring water management district permits will be handled accordingly. FFS will work with SJRWMD to ensure that levels and quality of ground and surface water resources are appropriately monitored.

A. Soils and Geologic Resources

1. Resources

Soil information for WISF was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). The NRCS lists four (4) major soils on WISF which are: Riviera fine sand, Pomona fine sand, Terra Ceia muck, and Floridana fine sand. Detailed information on all soils present on the forest may be found in Exhibit I.

2. Soil Protection

Management activities will be executed in a manner to that minimizes negative impacts to the soil. As 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 BMP Manual.

Currently there are no major or significant soil erosion problems on WISF.

B. Water Resources

The water resources on WISF 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 Hydrology Section to incorporate wetlands restoration into the overall resource management program as opportunities arise, particularly where wetlands systems have been impaired or negatively impacted by previous management activities or natural disasters. See Exhibit K for map of the water resources on WISF.

1. Resources

The St. Johns River forms the western boundary of the forest, and a branch of Six Mile Creek

runs through the eastern part of the Warner Tract.

2. Water Classification

The Florida Department of Environmental Protection, Standards Development Section reports that there are no waters on or near WISF listed as exceptions to Class III in subparagraph 62-302.400(17)(b)55, F.A.C.; therefore, all of the surface waters on or adjacent to the site are classified as Class III waters (Fish Consumption, Recreation, Propagation and Maintenance of a healthy, Well-Balanced Population of Fish and Wildlife), which is the statewide default classification under subsection 62-302.400(15), F.A.C.

According to Subsection 62-302.700(9), F.A.C., there are no Outstanding Florida Waters (OFW) on, adjacent to, or near WISF. While there are several other parcels in the vicinity of WISF that are considered conservation lands at a Federal, State or Local level, they have not been designated as OFWs. See Exhibit J.

3. Water Protection

An objective for the acquisition and management of this public land was to optimize ecological restoration, protect and manage existing natural resources, and facilitate sensible public use. Concern over a continuous usable source of fresh water requires emphasis on protecting this vital resource. Water resource protection measures, at a minimum, will be accomplished using BMPs as described in the most current version of the Silviculture BMP Manual.

4. Swamps, Marshes, and Other Wetlands

In addition to the waterways, WISF contains approximately 250 acres in four (4) hydric communities: floodplain swamp, bottomland forest, basin swamp, and dome swamp. Maintenance of naturally occurring wetlands communities is a high priority and will be accomplished through appropriate management activities, including prescribed fire when necessary, and adherence to Silviculture BMP.

5. Wetland Restoration

Wetland restoration objectives on WISF include erosion control, restoration of hydrology, and restoration of wetlands plant and animal communities. To achieve these objectives, restoration activities may involve road and soil stabilization, water level control structure removal or installation, non-native invasive species control, site preparation and re-vegetation with native wetlands species, and project monitoring. These activities may be conducted individually or concurrently; implemented by FFS personnel or by non-FFS personnel under mitigation or grant contractual agreements. Wetlands restoration projects should be conducted in conjunction with other restoration activities indicated elsewhere in this plan.

Where applicable, WISF, with assistance from the FFS Forest Management Bureau, may pursue funding to develop and implement wetlands restoration projects. Additionally, cooperative research among FFS, other state agencies, and the federal government will provide valuable information in determining future management objectives of wetland restoration.

Wetland restoration will be coordinated with the SJRWMD. Any activities requiring permits from the water management district will be handled accordingly and will follow the latest edition of the FFS Silviculture Best Management Practices Manual.

6. Florida Department of Environmental Protection Basin Management Action Plans (BMAP)

A Basin Management Action Plan is a "blueprint" for restoring impaired waters by reducing pollutant loadings to meet the allowable loadings established in a Total Maximum Daily Load (TMDL). It represents a comprehensive set of strategies, including, but not limited to permit limits on wastewater facilities, urban and agricultural best management practices, conservation programs, financial assistance and revenue generating activities, all designed to implement the pollutant reductions established by the TMDL. These broad-based plans are developed with local stakeholders, as they rely on local input and local commitment, and are adopted by Secretarial Order to be enforceable.

The BMAP provides for phased implementation under Subparagraph 403.067(7)(a)1, F.S. The phased BMAP approach allows for the implementation of projects designed to achieve incremental reductions, while simultaneously monitoring and conducting studies to better understand the water quality dynamics (sources and response variables) in the watershed.

The entirety of WISF lies within the St. Johns River Above Palmo Creek BMAP. See Exhibit K.

C. Floral and Faunal Resources

1. Rare, Endangered, and Threatened Species

The intent of FFS is to manage WISF in a manner that will minimize the potential for wildlife species to become imperiled. FFS employees continually monitor the forest for threatened or endangered species while conducting management activities. Specialized management techniques may be used, as necessary, to protect or increase protection of rare, threatened, and endangered species, as applicable for both plants and animals. See Table 4.

According to FNAI records for the Watson Island Tract, the West Indian manatee (*Trichechus manatus*) and short-nose sturgeon (*Acipenser brevirostrum*) are known to be present in the adjacent St. Johns River. While not federally listed, the Bachman's sparrow (*Aimophila aestivalis*) has been recorded on the Bayard Conservation Area and may occur on the forest. An active bald eagle nest occurs on the Watson Island Tract. The nest is embedded within a forested wetland. See Exhibits L and M. Due to its isolation, little or no management activity is likely to occur in proximity to the nest. FFS will follow the USFWS National Bald Eagle Management Guidelines in carrying out any management activities within the area.

Table 4. Rare, Endangered, and Threatened Species Documented on WISF

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Bald eagle	<i>Haliaeetus leucocephalus</i>	G5	S3	N	N
Florida black bear	<i>Ursus americanus floridanus</i>	G5T4	S4	N	N
Painted bunting	<i>Passerina ciris</i>	G5	S1S2	N	N
Florida mountainmint	<i>Pycnanthemum floridanum</i>	G3	S3	N	LT

* STATUS / RANK KEY

Federal Status (USFWS): LE = Listed Endangered, LT = Listed Threatened, N = Not currently listed, C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened. SAT, T(S/A) = Threatened due to similarity of appearance. A species that is threatened due to similarity of appearance with another listed species and is listed for its protection. Species listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation

State Status (FWC): Animals: FE = Listed as Endangered Species at the Federal level by the USFWS, FT = Listed as Threatened Species at the Federal level by the USFWS, F(XN) = Federal listed as an experimental population in Florida, FT(S/A) = Federal Threatened due to similarity of appearance, ST = State population listed as Threatened by the FWC, SSC = Listed as Species of Special Concern by the FWC, N = Not currently listed, nor currently being considered for listing.

Plants: LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act; LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered; CE = Commercially Exploited; N = Not currently listed, nor currently being considered for listing.

FNAI Global Rank: G1= Critically Imperiled, G2 = Imperiled, G3= Very Rare, G4= Apparently Secure, G5= Demonstrably Secure, GNR = Element not yet ranked (temporary), G#? = Tentative rank, T#= Taxonomic Subgroup; numbers have same definition as G#'s.

FNAI State Rank: S1= Critically Imperiled, S2= Imperiled, S3= Very Rare, S4= Apparently Secure, S5 = Demonstrably secure in Florida, S#?= Tentative Rank.

2. Florida Natural Areas Inventory

The Florida Natural Areas Inventory (FNAI) is the single most comprehensive source of information available on the locations of rare species and significant ecological resources throughout Florida.

FNAI has reported the following:

a. **Element Occurrences**

The FNAI element occurrences data layer includes occurrences of rare species and natural communities. For animals and plants, element occurrences usually indicate a viable population of the species, although they may also reflect historically documented observations which may no longer be extant.

Documented habitat includes basin swamp, bottomland forest, dome swamp, floodplain swamp, mesic flatwoods, mesic hammock, pine plantation, scrubby flatwoods, wet flatwoods, and wet prairie. Rare species which have been documented on the site are listed in Exhibit L.

b. **Likely and Potential Habitat for Rare Species**

In addition to documented occurrences, other rare species and natural communities may be identified on or near WISF. FNAI reports that the creek siltsnail (*Floridobia fraterna*)

is likely present on the Watson Island Tract. The Florida Fish and Wildlife Conservation Commission has indicated that roughly 42% of WISF contains habitat suitable for the federally-threatened wood stork (*Mycteria americana*). If wood storks become documented on the property, the FFS will consult the United States Fish and Wildlife Service's habitat management guidelines before taking non-emergency management actions.

c. Land Acquisition Projects

The St. Johns River Blueway runs along the eastern shore of the St. Johns River between Green Cove Springs and Palatka. It includes considerable forested wetlands by the river and around six tributary creeks, plus mesic flatwoods, freshwater marsh, and a portion of disturbed uplands. The project also bounds the WISF on the west bank of the St. Johns River. See Exhibit R.

FNAI recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species before expansions or alterations are made to any facilities.

3. Florida Fish and Wildlife Conservation Commission

The FWC Fish and Wildlife Research Institute (FWRI) reports numerous records of listed species occurrences or critical habitats within the confines of the property. This includes state and federally listed endangered or threatened species.

Other findings by the FWC include:

- a. The property is located adjacent to a Strategic Habitat Conservation Area for the bald eagle (*Haliaeetus leucocephalus*) and painted bunting (*Passerina ciris*).
- b. WISF is located within an area of moderate Species Richness which indicates the total number of species within potential habitat identified in a specific location.
- c. WISF is adjacent to Priority Wetlands, which are wetlands significant to listed wetland-dependent vertebrates.
- d. FWC's response includes a map indicating multiple species locations.

These data represent 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 are not entered into the database on a site-specific basis. Therefore, one should not assume that an absence of occurrences in their database indicates that species of significance do not occur in the area. See Exhibit M.

The FWC recommends the review of management guidelines in the published FWC Gopher Tortoise Species Management Plan to guide management actions for the gopher tortoise (*Gopherus polyphemus*) on the forest. The FWC Gopher Tortoise Species Management Plan provides beneficial resource guidelines for habitat management and monitoring of the gopher tortoise. For reference, the FWC Gopher Tortoise Species Management Plan can be accessed at MyFWC.com.

The FWC recommends the review 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. Further, FWC recommends the review FWC Species Conservation Measures and Permitting Guidelines and to incorporate as appropriate on WISF. For reference, the FWC Species Action Plans and Species Conservation Measures and Permitting Guidelines can be accessed at MyFWC.com.

4. Game Species and Other Wildlife

Wildlife is an important element of the WISF ecosystem. The forest is open to the public year-round except in portions of the forest where access is limited during wet periods, most notably the Watson Island Tract. There is currently no hunting at WISF; however, FWC is responsible for providing technical assistance for the biological aspect of the management of wildlife and fish populations and overall fish and wildlife law enforcement.

Notable wildlife species inhabiting the forest include bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), pileated woodpecker (*Dryocopus pileatus*), wild turkey (*Meleagris gallopavo*), and yellow-bellied sapsucker (*Sphyrapicus varius*).

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

5. Survey and Monitoring

FFS may implement species-specific management plans developed by FWC and other agencies as applicable. FFS will cooperate with FWC and other agencies in the development of new wildlife management plans and monitoring protocols, as necessary. Such plans will be consistent with rule and statute promulgated for the management of such species.

a. Gopher Tortoises

Surveys for gopher tortoise burrows will be conducted as needed by FFS and FWC staff intermittently, as needed. All surveys are done in cooperation with FWC.

The FFS follows and utilizes the Best Management Practices for gopher tortoises to assist in meeting management objectives for both the species and the communities in which it is found.

b. Florida Black Bear

FFS will continue to cooperate with FWC to implement FWC's Florida Black Bear Management Plan, with emphasis on maintaining sustainable black bear populations in suitable habitats throughout Florida for the benefit of the species and people.

c. Listed Plant Species

All known locations of listed or rare flora are GIS mapped and location data are shared with FNAI.

d. Other Rare Biota Surveys

Surveys are done as time and staffing allow. High quality plant communities continue to incur ad hoc surveys for both invasive plants and animals. The FFS will utilize FWC Species Action Plans for guidance both monitoring populations and for habitat management recommendations for rare and imperiled species, where appropriate.

Most of the isolated WISF wetlands have received a cursory biological survey, with rare and significant plant and animal species observed and documented. Assistance will be offered to FWC for gopher tortoise burrow commensals monitoring, as well as monitoring for other rare species, as appropriate.

During routine management activities, incidental sightings of rare animals and plants are GIS mapped by FFS staff. All rare species data is collected and sent to FNAI annually.

6. Gopher Tortoise Recipient Site Feasibility Assessment

The FFS has assessed the feasibility of establishing a gopher tortoise recipient site on WISF. The total size of the property is only 505 acres, existing in two non-adjacent parcels (Watson Island Tract, 275.5 acres; Warner Tract, 230 acres). The Watson Island Tract occurs directly adjacent to the St. John's River, which has no direct access, and consists of hydric and muck soils, which are incompatible with gopher tortoise habitat. The smaller Warner Tract also has limited access, and its soils are only marginally better than on the Watson Island Tract. Therefore, the FFS has determined that WISF is not a feasible location to establish a gopher tortoise recipient site.

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. Forest inventories will be updated on a continual basis according to guidelines established by the FFS Forest Management Bureau.

E. Beaches and Dune Resources

No beaches or dunes occur within WISF.

F. Mineral Resources

There are no mineral deposits of commercial value known to exist on WISF.

G. Unique Natural Features and Outstanding Native Landscapes

The most unique natural feature that exists on WISF is the pattern of wet flatwoods and bottomland forest interlaced amongst the marshes and swamps with meandering live oak hammocks dispersed throughout. On the Watson Island Tract there is a little over one mile of frontage on the St. Johns River.

H. Research Projects / Specimen Collection

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

All research to be considered on WISF must be in accordance with the guidelines stated in the State Forest Handbook. Any requests for research 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. Requests are subject to review by FFS Foresters, Biologists, the Forest Health Section, and the Forest Hydrology Section, as appropriate. Authorization to conduct research will require that the investigator provide copies of any reports or studies generated from any research to the FFS and the WISF staff. Other special conditions may be applicable, and the authorization may be terminated at any point if the study is not in compliance.

There have been no research projects or specimen collections conducted on WISF.

I. Ground Disturbing Activities

Although the FFS's approach to handling ground disturbing activities is identified in other sections of this plan, the FFS's overall approach to this issue is summarized here. 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. Sensitive resources include areas such as known sensitive species locations; archaeological, fossil, and historical sites; ecotones, wetlands, and water resources. The process for evaluating and obtaining approval for ground disturbing activities is outlined in Appendix 2.A.6. of the State Forest Handbook.

When new pre-suppression firelines, recreation trails, or other low-impact recreation 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, the FFS will consult with FNAI, DHR, SJRWMD, and ARC, as appropriate.

V. Public Access and Recreation

The primary recreation objective is to provide the public with dispersed outdoor recreation activities that are dependent on the natural environment. FFS will continue to promote and encourage public access and recreation use while protecting resources and practicing multiple-use management.

The demand for resource-based outdoor recreation activities on WISF is expected to be low, considering that public access to the forest is limited by topography (Watson Island Tract), public roads access, proximity, and size (both tracts). Planned public access points and those public use improvements that can be accomplished in the short term are illustrated in Exhibit D.

The Warner Tract has public access via Oscar Ashton Road, located off of County Road 13-A. An unnamed service road (former logging road) and various types of relic trails (firelines, ATV, mowed) are scattered throughout the tract.

The Watson Island Tract currently has no public access via roads and is only accessible by boat. The tract is surrounded almost entirely by wetlands, and approximately one mile of the St. Johns River. There is one small upland area that abuts State Road 13 where access for parking could be provided via a pullout and small parking area. However, only foot access is possible from that point due to the immediate transition to the bottomland forest community which dominates the tract. Although a parking area is possible, it is not feasible due to the topography. Parking will be reassessed if or when additional land is purchased for the tract. It is especially critical on this tract that considerations to develop public use improvements include management capacity (access and staff) to monitor impacts, provide maintenance, and or law enforcement needs associated with public use.

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

The Watson Island Tract (276 acres) has public river access, but no designated trails or facilities. The Warner Tract (230 acres) has public access, but no designated trails or facilities. Firelines can be used as hiking trails. See Exhibit D for maps of access points and service roads, and proposed improvements for each tract.

B. Planned

FFS will assess plans for recreation opportunities based on demand, carrying capacity, demographics, and impact to the resources on the forest. All planned improvements may be completed as staff and funding permits. Both terrestrial and aquatic resources and related activities will be evaluated. Any plans will be incorporated into the Five-Year Outdoor Recreation Plan on file for WISF.

1. Public Access and Parking

During this ten-year planning period, FFS will coordinate with the State Road Crew to install a parking lot along Oscar Ashton Road within the Warner Tract. Trees must be removed and hauled off to establish the parking area. For the Watson Island Tract, establishing a parking area is possible, but not feasible, due to lack of vehicular access and very wet ground conditions. Therefore, unless the need increases or significant acreage is added to the Watson Island Tract, the only planned parking area at this time is for the Warner Tract.

Parking area(s) will be designated by appropriate FFS staff by location. Listed plants and animals, as well as known archeological sites, will be avoided. The size of parking area(s) and materials needed will be determined by location for public access. An estimated half-acre to one-acre parking area will be planned for Warner Tract. Signage for both tracts will be installed and may need to be updated during this ten-year planning period.

2. Recreation Trails

During this ten-year planning period, the construction of a hiking trail is planned for the Warner Tract. The proposed hiking trail will traverse approximately two (2) miles, most likely in a loop format, originating from the planned parking area described above. A kiosk will be installed near the trailhead. A trail will be blazed into the tract, utilizing existing

firelines and service road. A short trail will need to be installed from the proposed parking area back to the fireline system and will necessitate establishment of a bridge or crossing to pass a low area. This crossing will abide by BMPs and both terrestrial and aquatic resources will be evaluated. Additional recreation infrastructure will be evaluated and assessed on the Warner Tract should additional land become available to add to the tract.

At this time, there are no plans to install recreation trails or other infrastructure on the Watson Island Tract due to the lack of vehicular access and wet ground conditions. Should additional land become available to add to this tract, recreation opportunities will be reevaluated.

3. Environmental Education

During this ten-year planning period, kiosks, educational materials, or displays will be installed on the Watson Island Tract or Warner Tract. Each may be installed, replaced, or repaired as needed. FFS may install displays on either tract with information that includes forest management, prescribed fire, wildlife, plants, or recreation. Environmental education for WISF may be conducted through guided tours and hands-on events by request. If a need is determined in the future, WISF may implement an environmental education program which may include guided tours, hands-on events, and more.

FFS may create partnerships with local K-12 schools and / or universities for the development and implementation of educational opportunities on WISF. The Five-Year Outdoor Recreation Plan on file for WISF may lend more insight to management activities as they pertain to future educational opportunities that the State Forest may provide to the public.

4. Equestrian, Hiker, Biker, and Hunter Education

During this ten-year planning period, FFS will install a kiosk at each tract of WISF. Each kiosk installed during this ten-year planning cycle will be used for display, education, and / or information on recreation activities on the State Forest. These tracts are not WMAs and are not open for hunting.

5. Amenities (Pavilions, Docks, Bathrooms, etc.)

During this ten-year planning period, FFS will assess the feasibility of installing gate(s), fencing, a vault toilet, a bicycle rack, benches, bridge(s), culvert(s), and viewing platform(s) on the Warner Tract of WISF. Materials for these projects will be determined by location and funding.

The Florida Forest Service will handle permitting requests for recreation activities.

VI. Forest Management Practices

A. Prescribed Fire

Forest management practices on WISF are important in the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians. Management practices on WISF include a prescribed fire program which is an effective tool in controlling the encroachment of shrubs and off-site hardwoods, stimulating the recovery of native herbaceous groundcover, and promoting the regeneration of native pines.

FFS utilizes a fire management program on State Forests that includes wildfire prevention, detection and suppression, and prescribed burning. This program is the responsibility of FFS's Bunnell District 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 chart detailing the recent history of prescribed burns and wildfires at WISF is available in Exhibit N.

FFS has 1 fire tower, 2 brush trucks, and 4 tractor-plow units located in St. Johns County. Additional support is available from neighboring counties. Personnel and equipment stationed at WISF will be used for pre-suppression practices, establishment of firebreaks, rehabilitation of existing firelines, construction of new firelines, maintenance of perimeter firebreaks, and prescribed burning.

The annual forest prescribed burning program produces multiple benefits. The purposes of prescribed burning on WISF are to facilitate forest management operations; enhance wildlife and listed species habitat; decrease fuel loading; enhance public safety; and 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 WISF, which will consist of dormant and growing season burns. An update to the Five-Year Prescribed Burning Management Plan is developed each year by FFS staff. All burns conducted on WISF are executed by Florida Certified Prescribed Burn Managers in accordance with Chapters 590.125, F.S. and 5I-2 F.A.C.

According to FNAI, historic, fire-dependent natural communities on WISF are estimated to have occupied approximately 221 acres and to have burned at approximately 2 to 15-year intervals. Current fire-dependent communities encompass 223 acres. Some historically fire-dependent communities have been altered through past land use practices, which inhibits the ability to meet objectives with prescribed fire alone. Based on current conditions and management objectives, WISF will plan for 56 to 112 acres to be prescribed burned annually. Priority ranking of burn units is used to keep fire return intervals maintained while slowly adding additional acreage. Meeting prescribed fire goals will be largely dependent on weather conditions, available personnel, and statewide emergency situations such as wildfires, hurricanes, and other natural disaster response and relief. Currently it is estimated that 141 acres of WISF are within the desired fire-return interval.

1. Fire Management

The WISF Fire Management Plan serves as a working tool and an informational document for WISF. The plan provides guidelines regarding wildfire suppression and prescribed fire management. It will specify burn units, burn unit prescriptions, appropriate fire return intervals, and fire pre-suppression planning. The plan may be reviewed and amended as necessary.

The use of prescribed fire in the management of timber, wildlife, and ecological resources on WISF is necessary if the FFS is to fulfill the goals and objectives stated in this plan including: enhancing and restoring native plant communities, managing protected species, managing

timber, recreation, historical, and other resource values. The fire management plan and its objectives shall reflect and incorporate these multiple-resource objectives.

- a. **Prescribed Fire:** Prescribed fire is the most important land management tool, both ecologically and economically, for managing vegetation and natural communities and perpetuating existing wildlife populations in Florida. Forest operation records and staff experience should be combined with the FNAI inventory and assessment (2019) to identify areas that may require mechanical or chemical treatments in conjunction with prescribed fire to restore a more natural vegetative structure.
- b. **Burn Unit Plans:** Each prescribed fire will be conducted in accordance with FFS regulations and state law (Rule Chapter 5I-2 F.A.C., Chapter 590 F.S.) and have a burn unit plan (or prescription). Each prescription will contain, at a minimum, the information, as required by Section 590.125(3), F.S., needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

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

Aerial ignition may be considered for large burn units where this tactic can be cost effective for larger acreages. Consideration should be given to rotating burn units between dormant and growing season burns over time. Fire return intervals for a burn unit are recommended to fall within the natural, historic range for the dominant natural community or communities within a given burn unit.

B. Wildfire Prevention and Mitigation Strategies

FFS utilizes a comprehensive wildfire management approach on State Forests that includes an ongoing program of wildfire prevention, detection and suppression, and prescribed burning. Implementation of this program is the responsibility of FFS's Bunnell District. 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 are established in priority order:

- 1) Protection of human lives
- 2) Protection of improvements
- 3) Protection of natural resources

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

1. Suppression Strategies

If a wildfire occurs on WISF there are two (2) alternative suppression strategies as defined below:

- a. **Contain and Control** 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 fire's 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 conditions that keep a wildfire from burning a large area or for a long duration.
- b. **Direct Suppression** 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 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. 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 WISF 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 pre-suppression fire breaks will meet the established Silvicultural BMP criteria.

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

4. **Sensitive Areas**

WISF retains 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. FFS personnel are aware of these areas in the event of a wildfire. Special precautions will be followed when prescribed burning in sensitive areas on WISF. When possible, fire staff will avoid line construction in wetlands ecotones throughout

the forest.

5. Firewise Communities

FFS has implemented a firewise community approach for prevention statewide. Specifically, in the area adjacent to or nearby WISF, efforts in this regard will continue to identify communities at risk and to contact their representatives.

6. Adjacent Neighbor Contacts

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

7. Post-Burn Evaluations

A post-burn evaluation is required for each prescribed burn on the State Forest to assess impacts on timber and habitat. Based on the evaluations after prescribed fires in particular, decisions will be made on the effectiveness of the prescribed burn and improvements that can be made in the future. A historical fire record for all significant fires and prescribed burns will be maintained. This will be accomplished using completed burn plans and the maintenance of GIS data. These records are intended to provide data for future management decisions.

C. Sustainable Forestry and Silviculture

Timber is a valuable economic and ecological resource, and timber harvesting for the purposes of generating revenue, improving stand viability, forest health, wildlife, and ecological 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 WISF:

- 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 or artificial regeneration, uneven-aged, and even-aged management, a forest with both young and old growth components that yields sustainable economic, ecological, and social benefits.

2. Silvicultural Operations

Silvicultural operations on WISF will be directed toward improving forest health, wildlife habitat, and ecological and economical sustainability, as well as toward recovery from past management practices that are not in accordance with the objectives of this plan. Stands of off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with one or more 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. Herbicides used will be registered for forestry use by the U.S. Environmental Protection Agency (EPA) and will not adversely affect water resources.

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

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

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

3. Forest Inventory

The purpose of a forest inventory is to provide FFS resource managers with information and tools for short and long-range resource management and planning. The WISF forest will be re-inventoried every 5-10 years to provide an accurate estimation of the standing timber and to ensure that stands will be managed sustainably.

Timber / forestry resources available on the property include longleaf and slash pine. In addition, there are mixed hardwoods and cypress found throughout the forest.

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.

5. Cattle Grazing

Cattle grazing activities can assist in maintaining pastures and controlling non-native plants. However, due to its small size and largely wetland habitats, WISF is unlikely to provide a cost-effective lease site for cattle.

There are currently no cattle leases on WISF.

D. Non-Native Invasive Species Control

FFS employees continually monitor the forest for non-native invasive species while conducting management activities. FFS will locate, identify, and apply control measures with the intent to eradicate or control non-native invasive species. Table 5 lists the general treatment strategy, acres impacted, and population stability trend for non-native invasive plant species occurring on WISF. Also see Exhibit O.

On-going maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan, which is developed to locate, identify, and control non-native invasive plant

species. Occurrences of non-native invasive species are recorded in the WISF GIS database and are monitored and treated annually as funding permits. The GIS database is updated as new infestations are discovered.

Adjacent landowners who are known to have these species on their property will be approached to cooperate on control measures. FFS works to control the spread of non-native invasive species by decontaminating agency equipment and equipment used by private contractors according to the State Forest Handbook.

FFS will enlist support from FWC in efforts to control non-native invasive animals. FWC has issued a feral hog control permit to FFS for all State Forests and FFS will allow for feral hog removal through trapping and hunting as necessary. There is currently no evidence of feral hogs (*Sus scrofa*) inhabiting WISF.

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

Table 5. Non-Native Invasive Plant Species Occurring on WISF

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Increasing /Decreasing
Wild taro	(<i>Colocasia esculenta</i>)	Due to the remoteness of the infestation and large infestations on adjacent property along the river, currently the infestation is only being monitored.	2.5	Stable
Chinese tallow	(<i>Triadica sebifera</i>)	Basal bark treatment with 20% triclopyr or cut stump application of 20% triclopyr and hand pull seedlings or 2% triclopyr foliar application.	0.1	Decreasing
Japanese climbing fern	(<i>Lygodium japonicum</i>)	Foliar application with 2% glyphosate mixed in water with surfactant and applied immediately when plants are found.	0.1	Decreasing
Cogongrass	(<i>Imperata cylindrica</i>)	Foliar application of 2% glyphosate with 1% imazapyr and 2% triclopyr on dry sites only.	0.1	Decreasing
Coral ardisia	(<i>Ardisia crenata</i>)	Foliar application of 2% glyphosate mixed in water with a surfactant or basal bark of 20% triclopyr mixed in carrier oil cut stump treatment with 20% triclopyr.	0.1	Stable

E. Insects, Disease and Forest Health

Currently there are no significant insect or disease problems on WISF. In the event of a forest pest outbreak, WISF resource managers will consult with the Forest Management Bureau's Forest Health Section to formulate an appropriate and effective response.

In compliance with Section 388.4111, F.S. and in Section 5E-13.042, F.A.C., all lands have been evaluated and subsequently designated as environmentally sensitive and biologically highly

productive. Such designation is appropriate and consistent with the previously documented natural resources and ecosystem values and affords the appropriate protection for these resources from arthropod control practices that would impose a potential hazard to fish, wildlife, and other natural resources existing on this property. The local arthropod control agencies in St. Johns County will be notified of the approval of this plan documenting this designation.

As a result, prior to conducting any arthropod control activities on WISF, 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 WISF. This public lands control plan must comply with FDACS guidelines and use the appropriate FDACS form. The plan must then be approved and mutually adopted by the county, FFS, and FDACS, 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. See Exhibit V.

F. 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. Herbicide applications
2. Restoration
3. Site preparation
4. Reforestation
5. Timber harvesting
6. Biological assessments and mapping
7. Fixed capital and infrastructure improvements

VII. Proposed Management Activities for Natural Communities

In 2019, FNAI completed an inventory and natural community mapping project on WISF. Current and historic natural community cover types can be found in Exhibits P and Q, and Table 6. The inventory included altered community types which are habitats that have been impacted by humans and do not fit into FNAI’s Natural Community Classification. See Tables 7 and 8.

Table 6. Natural Community Types

Community Type	Historic acres*	Current acres*
Basin swamp	19	19
Bottomland forest	87	87
Dome swamp	2	2
Floodplain swamp	142	142
Mesic flatwoods	32	22
Mesic hammock	28	35
Scrubby flatwoods	3	3
Wet flatwoods	106	157
Wet prairie	59	0
Managed and other altered landcover types***	0	13

Community Type	Historic acres*	Current acres*
TOTAL	478**	480**

* Rounding errors exist
 ** A 25-acre area has not been surveyed
 *** See Tables 7 & 8

Table 7. Managed Community Types

Community Type*	Current acres**
Pine Plantation	10

* Protocol as described in Appendix 2 of FNAI’s “Guide to the Natural Communities of Florida”, 2010 Edition.
 ** Note rounding errors exist

Table 8. Other Altered Landcover Types

Altered Landcover Type*	Current Acres**
Developed	1
Road	2

* Protocol as described in Appendix 2 of FNAI’s “Guide to the Natural Communities of Florida”, 2010 Edition.
 ** Note rounding errors exist.

For the purposes of this management plan, restoration is defined as the process of returning ecosystems to the appropriate structure and species composition, based on soil type. Management during this ten-year period will begin with a forest-wide assessment of the fuel loading, timber densities, reforestation needs, and groundcover in order to develop a five-year comprehensive operational plan for prescribed burning and other management activities across the forest. Strategies may include thinning pine plantations, mowing or chopping in areas of heavy fuel buildup, application of both dormant and growing season fires, and / or the use of herbicides to control hardwoods and / or hardwood regeneration. Site preparation and reforestation may be required to increase pine stocking in stands with very poor stocking or in restoration efforts. Fire return intervals are included as a guide and may vary depending upon specific conditions and are intended to attain desired forest and resource management goals. See Table 9.

Table 9. Prescribed Fire Interval Guide on WISF

Habitat Type	Historic Fire Return Intervals*	WISF Fire Frequency Goal (Local)	Comments
Basin swamp	2 – 5	3 – 4	Fire intervals in basin swamps are highly variable. The lowest portions of basin swamps rarely, if ever, burn. Fire is more frequent in cypress dominated swamps and may be absent or rare in hardwood swamps.
Bottomland forest	N / A	N / A	Fire is not a significant factor in bottomland forest and is primarily limited to individual trees affected by lightning strikes.
Dome swamp	3 – 5	3 – 4	Fire on the edges of dome swamp is essential for limiting hardwood encroachment and peat buildup while encouraging herbaceous growth.

Habitat Type	Historic Fire Return Intervals*	WISF Fire Frequency Goal (Local)	Comments
Floodplain swamp	N / A	N / A	This community is typically too wet to carry a fire.
Mesic flatwoods	2 – 4	3 – 4	Frequent, low intensity fires in the dormant or growing seasons, as appropriate, are critical for preserving the structure of the flatwoods, preventing woody encroachment, and reducing weedy competition.
Mesic hammock	N / A	N / A	Mesic conditions dampen fires throughout the year.
Pine Plantation	2 – 10	3 – 4	Pine plantations are burned on the same frequency as the surrounding and/or historic natural community as appropriate.
Scrubby flatwoods	5 – 15	3 – 4	Variability in season and frequency of prescribed fires should produce a mosaic of burned and unburned patches desirable for maintaining high biotic diversity.
Wet flatwoods	3 – 10	3 – 4	Prescribed fires applied on a 3 to 4-year cycle reduces woody encroachment, sustains herbaceous species, and aids in preventing heavy fuel loads that can lead to catastrophic wildfires.
Wet prairie	2 – 3	3 – 4	Frequent fires (2 to 3 years) prevent the invasion of weedy shrubs and trees that shade out the herbaceous species.

* Years, as determined by FNAI

The following community descriptions, existing condition descriptions, and management recommendations are taken from a 2019 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 WISF.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural and managed communities at WISF 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. Basin Swamp **Description:**

Basin swamps are forested depressions that are typically large and/or embedded in a non-pyrogenic community and thus are not heavily influenced by frequent fires in the surrounding landscape. The soils are generally acidic, nutrient-poor peats overlying an impervious soil layer. This community type is dominated by hydrophytic trees and shrubs that can withstand inundation for most or all of the year, including bald (or pond) cypress (*Taxodium distichum*) and/or swamp tupelo (*Nyssa sylvatica* var. *biflora*). Slash pine (*Pinus elliottii*) may be found on hummocks within the swamp. Basin swamps have variable shrub layers and sparse to dense herbaceous species cover. A mature canopy is usually closed and dominated by pond cypress, swamp tupelo, slash pine, and to a lesser extent, red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanicus*),

diamond leaf oak (*Quercus laurifolia*), loblolly bay (*Gordonia lasianthus*), swamp bay (*Persea palustris*), and sweetbay (*Magnolia virginiana*). In most cases, shrubs do not form a dense layer below the canopy or in the ecotones of the swamps but are typically scattered throughout the swamp. In densely forested portions of basin swamps, herbs are sparse. Epiphytes and vines may be common.

Basin swamps appear much the same as baygall communities on the 1943 aerial photographs, as medium to dark gray forested patches, and are difficult to distinguish in the complex mosaic that also includes wet flatwoods and basin marsh. Ecotones between the basin swamp and adjacent flatwoods communities were historically occupied by a wet prairie community.

Current Conditions:

Basin swamps at WISF are primarily found on the Warner Tract. The tree canopy and subcanopy of basin swamps on WISF consist of red maple, titi (*Cyrilla racemiflora*), sweetgum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), sweetbay, cabbage palm (*Sabal palmetto*), and pond cypress (*Taxodium ascendens*).

Fire Regimes:

Fire intervals in basin swamps are highly variable. The lowest portions of basin swamps rarely, if ever, burn. Graminoid-dominated ecotones often burn in conjunction with the adjacent uplands, and these may burn as frequently as every 2 to 5 years.

Fire is more frequent in cypress dominated swamps and may be absent or rare in hardwood swamps. Slash pine, pond pine, and cypress can establish in these areas immediately after a fire, benefiting from ample sunlight and available bare mineral soils; they are also tolerant of moderate fires once past a certain size, thus systems dominated by these two species may have been subjected to fires every 10 to 20 years.

Management Needs:

Little active management is needed for this community type. Where it can be done safely, prescribed fires should be allowed to burn into the edges of the basin swamp, to restrict the encroachment of shrubs. Infrequent low intensity ground fires within basin swamps may also be used to maintain the cypress component.

This community is thought to be very stable if hydrological conditions and water quality are maintained.

B. Bottomland Forest

Description:

Bottomland forest is a deciduous, or mixed deciduous/evergreen, closed-canopy forest on terraces and levees within riverine floodplains and in shallow depressions. Found in situations intermediate between swamps (which are flooded most of the time) and uplands, the canopy may be quite diverse with both deciduous and evergreen hydrophytic to mesophytic trees such as live oak (*Quercus virginiana*), swamp laurel oak (*Quercus laurifolia*), sweetbay, swamp tupelo, sweetgum, bald cypress, and red maple. A subcanopy of younger canopy species should be present. Understory species composition should remain as variable as the canopy, with shrubs

being the dominant component. Shrubs should include saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), coastal doghobble (*Leucothoe axillaris*), wax myrtle (*Myrica cerifera*), fetterbush, and highbush blueberry (*Vaccinium corymbosum*), among others. Herbs should be generally sparse due to the closed canopy and dense shrub layer. Species may include woods grass (*Oplismenus hirtellus*), bracken fern (*Pteridium aquilinum*), Virginia chain fern (*Woodwardia virginica*), woodoats (*Chasmanthium laxum*), and lizard's tail (*Saururus cernuus*). Epiphytes should be infrequent to occasional and include Spanish moss (*Tillandsia usneoides*), resurrection fern (*Pleopeltis polypodioides*), and ball moss (*Tillandsia recurvata*). Vines should be infrequent to common and include muscadine (*Vitis rotundifolia*) and poison ivy (*Toxicodendron radicans*).

Current Conditions:

Bottomland forests include a canopy and subcanopy of red maple, loblolly bay, dahoon (*Ilex cassine*), sweetgum, southern bayberry (*Morella cerifera*), swamp bay, slash pine, and swamp laurel oak. The shrub layer includes smaller canopy species and fireweed (*Erechtites hieraciifolius*) and saw palmetto. Herbs are sparse and include Virginia chain fern.

Fire Regimes:

Fire is not a significant factor in bottomland forest and is primarily limited to individual trees affected by lightning strikes.

Management Needs:

Management activities should focus on maintaining natural hydrologic patterns and allowing prescribed fires from adjacent communities to burn into the edges of the community. Fire breaks should not be created to isolate this community. Activities that alter the surrounding hydrology, including ditches and canals, should be avoided.

C. Dome Swamp

Description:

Dome swamps are isolated, shallow, forested wetland basins that are imbedded in a pyrogenic matrix community such as pine flatwoods. These swamps often have domed profiles resulting from smaller trees growing around the edges and larger trees growing in the interior. Dome swamps have peat soils that are thickest toward the center and are generally underlain with acidic soils. Dome swamps are distinguished from basin swamps principally by their often more circular shape, smaller size, and higher historical fire frequency due to landscape position.

The mature canopy is dominated by pond cypress and / or swamp tupelo and may also have a mixture of bay species such as sweetbay as well as a midstory of scattered tall shrubs including dahoon, fetterbush, wax myrtle, and swamp bay. The herbaceous layer is sparse in the interior, becoming denser on the edges, and dominated by various hydrophytic herbs. Species composition and hydroperiods are similar to basin swamps, but generally with fewer shrubs and greater herbaceous cover and diversity. Dome swamps usually have a diverse herbaceous ecotone with the surrounding pine dominated community, created through frequent fires that extinguish naturally along the edge of the dome.

A small, isolated dome swamp can be found embedded in flatwoods and wet prairie on the Warner Tract. Dome swamps usually appear on the 1943 aerial photographs as a slightly lighter, textured signature, although they can be difficult to distinguish from non-forested depression marshes due to the faint color of the cypress.

Current Conditions:

There is a small dome swamp on the Warner Tract surrounded by flatwoods and pine plantation. This is a shallow depression area that is isolated from surface water drainage except during periods of flooding. The canopy and subcanopy of dome swamps at WISF contains pond cypress and slash pine. The shrub layer of the dome swamp community includes myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), sweetbay, and pond cypress.

Fire Regimes:

Fire is essential for the maintenance of dome swamps, limiting hardwood encroachment, particularly by bay species, and peat buildup while encouraging herbaceous growth. The fire frequency is greatest at the periphery of the dome swamp where a normal fire cycle might be as short as 3 to 5 years. The interior of large dome swamps may burn less frequently because of standing water or soil saturation.

Management Needs:

Dome swamps on WISF would benefit from groundcover restoration. Prescribed fire will be the main tool used to restore and manage dome swamps. Prescribed fires from neighboring flatwoods communities will be allowed to burn into dome swamps and extinguish naturally at the ecotone or burn through the swamp, as conditions permit. Existing fire breaks around dome swamps should be rehabilitated whenever possible, and new lines will only be established in extreme situations.

D. Floodplain Swamp

Description:

Floodplain swamp is a closed-canopy forest of hydrophytic trees occurring on frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains. The canopy is typically closed and dominated by pond cypress and / or bald cypress, water tupelo (*Nyssa aquatica*), and swamp tupelo (*Nyssa biflora*) with occasional Carolina ash (*Fraxinus caroliniana*), and swamp laurel oak. Shrubs and smaller trees such as titi, green ash (*Fraxinus pennsylvanica*), Virginia willow (*Itea virginica*), common buttonbush (*Cephalanthus occidentalis*), cabbage palm, and dahoon may be present. A groundcover of flood tolerant ferns and herbs such as royal fern (*Osmunda regalis* var. *spectabilis*), netted chain fern (*Woodwardia areolata*), swamp dock (*Rumex verticillatus*), and lizard's tail may be occasional.

At WISF, floodplain swamp occurs in a mosaic with bottomland forest. The two communities are indistinguishable on the historic aerals. Current aerial photography and ground-truthing were used to delineate both communities.

Current Conditions:

The floodplain swamps at WISF have a canopy of red maple, sweetbay, and pond cypress. The subcanopy and taller shrubs include smaller canopy species and Carolina ash, and sweetgum. The understory shrub layer contains smaller subcanopy species and groundsel tree (*Baccharis*

halimifolia) and common buttonbush. The herbaceous layer includes snow squarestem (*Melanthera nivea*), savannah panicum (*Phanopyrum gymnocarpon*), pickerelweed (*Pontederia cordata*), hottentot fern (*Thelypteris interrupta*), and Virginia chain fern. There are occasionally vines and epiphytes growing into the canopy, including Bartram's air-plant (*Tillandsia bartramii*), Spanish moss, trumpet creeper (*Campsis radicans*), and eastern poison ivy.

Fire Regimes:

Fire is not necessary to maintain floodplain swamp. This community is typically too wet to carry a fire. If floodplain swamps experience drought, fires may occur and cause damage to the understory.

Management Needs:

The maintenance of natural hydrologic regimes is critical to the health of floodplain swamps and to the downstream systems with which they are connected. Where it can be done safely, prescribed fires should be allowed to burn into floodplain swamp edges to restrict encroaching shrubs. Where possible, eliminate plowed firebreaks and ditches through or around floodplain swamps to restore hydrology to its natural state.

E. Mesic Flatwoods

Description:

Mesic flatwoods are relatively open-canopy forests of southern yellow pines, but most notably longleaf pine (*Pinus palustris*). Slash pine is present more frequently in transitions to adjacent wetlands or on more calcareous soils. There is little or no subcanopy and tall shrub layer other than pine recruitment. The shrub layer is moderately dense with an average height that does not generally exceed four feet. Typical species include saw palmetto, gallberry (*Ilex glabra*), tarflower (*Bejaria racemosa*), coastalplain staggerbush (*Lyonia fruticosa*), wax myrtle, winged sumac (*Rhus copallinum*), netted pawpaw (*Asimina reticulata*), running oak (*Quercus elliotii*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), and a diversity of other low shrubs. Herb cover is also moderately dense and dominated by grasses which help to carry frequent fires, especially wiregrass (*Aristida stricta*). Herbaceous species diversity is high in good quality mesic flatwoods. Vines occur rarely. Community types embedded within mesic flatwoods include dome swamp, basin swamp, depression marshes, wet flatwoods, and hydric hammocks.

Current Conditions:

Typical vegetation in the mesic flatwoods at WISF includes an open canopy of longleaf pine, slash pine, and water oak (*Quercus nigra*). A subcanopy and tall shrub layer of titi, loblolly bay, sweetgum, swamp laurel oak, and water oak indicate a need for increased prescribed fire. Short shrubs include blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), coastalplain staggerbush, fetterbush, and saw palmetto. The sparse herbaceous layer includes bluestem (*Andropogon* sp.), bracken fern, sweet goldenrod (*Solidago odora*), and Virginia chain fern.

Fire Regimes:

Historically, fires ignited by lightning during the early wet season (April - June) would have burned the mesic flatwoods/wet flatwoods complex. These fires are critical for preserving the structure of the flatwoods, for preventing woody encroachment, and for reducing weedy

competition. Frequent, low-intensity fires help maintain a diverse herbaceous layer and provide mineral soils for longleaf pine regeneration. For management purposes, prescribed fires should be applied on a 2 to 4-year interval to keep fuel levels manageable and maintain maximum native biodiversity. If fuel loads are high, this community will be burned during the dormant season, transitioning to early growing season burns as fuels and weather conditions allow.

Management Needs:

Management goals for mesic flatwoods at WISF should focus on reducing heavy fuel loading and the reduction of woody vegetation in the mid-story and understory. These goals will be accomplished using mechanical fuel reduction techniques and frequent prescribed fires. In areas where fuel loads are too high to safely conduct prescribed fires, mechanical fuel reduction, such as mowing, roller chopping, or thinning operations will be used to reduce fuel levels. Dormant season fires will first be used to reduce the fuel load and establish a fire return interval. After fuels have been reduced to a manageable level and a fire return interval has been established, prescribed fire will ideally be conducted during the early lightning season or as close to this period as possible. Roller chopping should be avoided in areas that support wiregrass and other native species. Although chopping may reduce shrub cover in problem areas, it also reduces wiregrass cover and increases weedy species that are less likely to carry a fire.

The secondary management goal for mesic flatwoods at WISF should focus on the creation of an uneven-aged stand consisting of longleaf pine, slash pine, and scattered oak species. This goal will be accomplished with the use of selective thinning operations that will create an open forest canopy and stimulate the regeneration of native ground cover. The basal area of the pine will be managed over time to allow more adequate sunlight to penetrate the forest canopy.

F. Mesic Hammock

Description:

Mesic hammock is a well-developed evergreen hardwood and/or palm forest on soils that are rarely inundated. Mesic hammock typically has a closed canopy of live oak with cabbage palm generally common in the canopy and subcanopy. Southern magnolia (*Magnolia grandiflora*) and pignut hickory (*Carya glabra*) may be occasional in the subcanopy. The shrubby understory may be dense or open, tall or short, and is typically composed of a mix of saw palmetto, American beautyberry, American holly (*Ilex opaca*), gallberry, sparkleberry (*Vaccinium arboreum*), hog plum (*Ximenia americana*), common persimmon (*Diospyros virginiana*), highbush blueberry, wild olive (*Osmanthus americanus*), and Carolina laurelcherry (*Prunus caroliniana*). The groundcover is often sparse or patchy and includes a variety of herbaceous species. Mesic hammock occurs on moderately poorly drained soils in areas that receive infrequent fire. They are typically associated with wetland communities that inhibit the spread of fire on the landscape.

Current Conditions:

At WISF, the mesic hammock community is located along the St. Johns River on the Watson Island Tract and is surrounded by bottomland forest and floodplain swamp. The canopy of mesic hammock is dominated by live oak, southern magnolia, sand live oak (*Quercus geminata*), swamp laurel oak, and water oak. Additional shrubs and herbs found in mesic hammock include wild olive (*Cartrema americanum*), dahoon, American holly, coastalplain staggerbush, bluestem palmetto (*Sabal minor*), whip nutrush (*Scleria triglomerata*), saw palmetto, and the invasive coral

ardisia (*Ardisia crenata*). Occasionally, epiphytes and vines are found growing on the canopy species. The mesic hammock community has been relatively undisturbed due to its remoteness and is currently in good condition.

Fire Regimes:

Fire is infrequent in mesic hammock. In most cases, leaf litter and mesic conditions dampen fires throughout the year. Fires from adjacent pyrogenic communities can be allowed to burn into the edges of mesic hammock.

Management Needs:

Due to the remote location of the community, few management opportunities are available for this community. Management in mesic hammocks should be focused on removal of invasive species.

G. Scrubby Flatwoods

Description:

Scrubby flatwoods are a well-drained, pine-dominated forests intermediate between scrub and mesic flatwoods. Good quality scrubby flatwoods have a relatively open canopy of southern yellow pines, most notably longleaf pine, and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. The shrub layer consists of a variety of mesophytic and xerophytic species, including rusty staggerbush (*Lyonia ferruginea*), coastalplain staggerbush, fetterbush, Chapman's oak (*Quercus chapmanii*), sand live oak, myrtle oak (*Quercus myrtifolia*), winged sumac, saw palmetto, and shiny blueberry. Unlike scrub, a herbaceous layer dominated by wiregrass is present and helps carry fire through the community more regularly than in scrub. Typical herbs include witchgrass (*Dichanthelium* sp.), tall elephantsfoot (*Elephantopus elatus*), narrowleaf silkgrass (*Pityopsis graminifolia*), blackroot (*Pterocaulon pycnostachyum*), and lopsided indiagrass (*Sorghastrum secundum*).

Current Conditions:

Scrubby flatwoods at WISF are primarily found on the Warner Tract. These communities are characterized by a canopy of slash pine and a shrub stratum dominated by wild olive, coastalplain staggerbush, wild pennyroyal (*Piloblephis rigida*), Chapman's oak, sand live oak, saw palmetto, and shiny blueberry. The herbaceous groundcover is patchy and includes bracken fern and sweet goldenrod. Due to the absence of fire, the fuel loads have steadily increased over the years, and the woody vegetation has become very thick.

Fire Regimes:

Scrubby flatwoods natural fire regime ranges from 5 to 15 years. Sparse groundcover and incombustible scrub oak leaf litter may reduce the occurrence of fires leading to a slightly longer average fire-return interval than is the case for mesic flatwoods. Variability in season and frequency of prescribed fires should produce a mosaic of burned and unburned patches desirable for maintaining high biotic diversity in this community.

Management Needs:

Management goals for scrubby flatwoods at WISF should focus on reducing heavy fuel loading and the reduction of woody vegetation in the mid and understory. These goals will be

accomplished using mechanical fuel reduction and frequent prescribed fires. In areas where fuel loads are too high to safely conduct prescribed fires, mechanical fuel reduction, such as mowing, roller chopping, or thinning operations will be used to reduce fuel levels. Dormant season fires will first be used to reduce the fuel load and establish a fire rotation. After fuels have been reduced to a manageable level and a fire rotation has been established, prescribed fire will ideally be conducted during the early lightning season or as close to this period as possible. Roller chopping should be avoided in areas that support wiregrass and other native species. Although chopping may reduce shrub cover in problem areas, it also reduces wiregrass cover and increases weedy species that are less likely to carry a fire.

H. Wet Flatwoods

Description:

Wet flatwoods are characterized as relatively open-canopy forests of pines with a thick shrubby understory and very sparse groundcover, or a fire-maintained, sparse understory and a dense groundcover of hydrophytic herbs and shrubs. Vegetation may be very similar to mesic flatwoods, but often with little or no saw palmetto. The canopy is typically longleaf pine or slash pine.

Current Conditions:

The canopy in the wet flatwoods at WISF consists of slash pine, longleaf pine, and sweetbay with a subcanopy and tall shrub layer that includes red maple, and water oak, titi, swamp bay, and sweetgum. The hardwood presence in the shrub layer and subcanopy is indicative of the need for increased prescribed fire. Short-statured shrubs are common and include roundpod St. John's wort (*Hypericum cistifolium*), gallberry, and southern bayberry. In general, the native herbaceous groundcover of wet flatwoods is made up of wiregrass, witchgrass, tenangle pipewort (*Eriocaulon decangulare*), Carolina redroot (*Lachnanthes caroliana*), rosy camphorweed (*Pluchea baccharis*), whip nutrush, Virginia chain fern, and yellow-eyed grass (*Xyris* sp.). Most of the wet flatwoods found on the Warner Tract has been impacted by past land management activities. There are remnants of intact groundcover scattered through the community, but, due to the lack of fire, most of the understory is dominated by woody/hardwood vegetation and heavy fuels.

Fire Regimes:

Historically, natural fires may have occurred every 3 to 10 years in wet flatwood communities. For management purposes, prescribed fires are applied on a 3 to 4-year cycle. This reduces woody encroachment, sustains herbaceous species, and aids in preventing heavy fuel loads that can lead to catastrophic wildfires.

Management Needs:

Management goals for wet flatwoods should focus on reducing heavy fuel loading and the reduction of woody vegetation. To accomplish this goal, mechanical fuel reduction and frequent prescribed fires will be the primary tools used. In areas where fuel loads are too high to safely conduct prescribed fires, mechanical fuel reduction, such as mowing, roller chopping, or thinning operations will be used to reduce fuel levels. Dormant season fires will first be used to reduce the fuel load and establish a fire rotation. After fuels have been reduced to a manageable level and a fire rotation has been established, prescribed fire will ideally be conducted during the early

lightning season or as close to this period as possible. Roller chopping should be avoided in areas that support wiregrass and other native species.

The use of plowed firebreaks and other practices that disturb the soil should be minimized; existing roads and wetlands should be used for firebreaks whenever possible. New ground disturbances should be avoided to prevent elimination of the natural groundcover and establishment of weedy species. Depth of plowed firebreaks should be minimized to prevent hydrologic alteration within the surrounding community.

I. Wet Prairie

Description:

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. Trees and shrubs are absent or very sparse. 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*). In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*Rhynchospora oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*Scleria georgiana*), plus longleaved threeawn (*Aristida palustris*). Also common in wetter areas are carnivorous species, such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.). Other characteristic species in this community include toothache grass (*Ctenium aromaticum*), pineland rayless goldenrod (*Bigelovia nudata*), flattened pipewort (*Eriocaulon compressum*), water cowbane (*Oxypolis filifolia*), and coastalplain yellow-eyed grass (*Xyris ambigua*). Laurel greenbrier (*Smilax laurifolia*) is a common vine in wet prairie.

Current Conditions:

There are currently no mapped wet prairies at WISF due to fire exclusion and shrub encroachment. A canopy of slash pine is present with shrubs including gallberry and roundpod St. John's wort. The herbaceous layer contains blue maidencane (*Amphicarpum muehlenbergianum*), wiregrass, and the state-listed hooded pitcherplant (*Sarracenia minor*).

Fire Regimes:

Historically, the fire-return interval in wet prairie is 2 to 3 years. These frequent fires prevent the invasion of weedy shrubs and trees that shade out the herbaceous species.

Management Needs:

As with the flatwoods, restoration and management goals for the wet prairies of WISF should focus implementing frequent prescribed fires. Timing of fires ideally should be during the early lightning season or as close to this period as practicable. Prescribed fires should also be applied to disturbed areas (mostly old agriculture areas) to reduce the dense shrub cover and encourage native species recruitment and colonization. Any trees established in wet prairies should be harvested as part of the restoration process. Chopping these areas may be an option, but exposed soil may encourage colonization by weedy and exotic species. Seeding or planting of wiregrass

and other native, pyrogenic species will allow these areas to burn more readily which will help reduce weedy and exotic species. Roller chopping should be avoided in areas that support wiregrass and other native species. Although chopping may reduce shrub cover in problem areas, it also reduces wiregrass cover and increases weedy species that are less likely to carry a fire and may alter the hydrology of these sensitive communities.

J. Managed Community Types

Pine plantations and pastures represent vegetative communities that the FFS manages as integral components of the agency's multi-use management approach. These managed communities provide both ecological benefits, such as wildlife habitat and ground and surface water filtration, as well as opportunities for generating revenue that can be used to help offset management costs. Management of plantations and pastures within the State Forests is conducted at a low-level of intensity that further ensures compatibility with other management goals and objectives.

1. Pine Plantation

Description:

Pine plantation on WISF has been established on historic wet prairie, mesic flatwoods, and wet flatwoods, and is burned according to the fire return interval for the surrounding and adjacent natural communities. This plantation consists of planted slash pine that was established utilizing intensive site preparation techniques.

Current Conditions:

Approximately 2% of the total acreage of WISF consists of pine plantation. The age of the plantation is 35 years.

The pine plantation on the Warner Tract has a dense canopy of slash pine. Subcanopy species may include younger slash pine and water oak. Other shrubs include gallberry, fetterbush, saw palmetto, and shiny blueberry. The herbaceous layer is sparse.

Fire Regimes:

Refer to the historic community.

Management Needs:

Due to the small size of the pine plantation, this community will be managed in conjunction with the surrounding flatwoods communities. The management strategy will focus on reducing heavy fuel loading and the reduction of woody vegetation. This will be accomplished by using mechanical fuel reduction and prescribed fire. In areas where fuel loads are too high to safely conduct prescribed fires, mechanical fuel reduction, such as mowing, roller chopping, or thinning operations will be used to reduce fuel levels. Dormant season fires will first be used to reduce the fuel load and establish a fire rotation. After fuels have been reduced to a manageable level and a fire rotation has been established, prescribed fire will ideally be conducted during the early lightning season or as close to this period as possible. Roller chopping should be avoided in areas that support wiregrass and other native species.

K. Altered Landcover Types

Description:

Altered landcover types are mapped where the natural communities have been overwhelmingly altered as a result of human activity. The altered landcover types described in this section are often not appropriate areas for restoration. If restoration is desired, the target future condition of the ruderal habitat is dependent on the historic community. Refer to the appropriate community type for a more specific explanation of the desired future condition.

Current Conditions:

Altered landcover types on WISF comprise developed areas and roads.

Developed (1 acres) – Check stations, ORV use areas, parking lots, buildings, maintained lawns (as part of recreation, business, or residential areas), botanical or ornamental gardens, campgrounds, recreation, industrial, and residential areas.

Road (2 acres) – Paved or unpaved

Fire Regimes:

Not fire-dependent.

Management Needs:

How ruderal areas should be managed depends on the specific site under consideration. These areas may be useful for placement of support facilities or may be targeted for restoration of the historic natural community. If left alone, most of these areas are likely to remain in a ruderal state. It may not be practical or desirable to restore some of the altered landcover types (e.g., developed land, roads, etc.) to the historic natural community.

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IX. Glossary of Abbreviations

ARC	Acquisition and Restoration Council
BMP	Best Management Practice
CAMA.....	Division of Coastal and Aquatic Managed Areas
CARL.....	Conservation and Recreation Lands Acquisition Program
DEP	Florida Department of Environmental Protection
DHR	Florida Division of Historical Resources
DRP.....	Florida Division of Recreation and Parks
F.A.C.....	Florida Administrative Code
FDACS.....	Florida Department of Agriculture and Consumer Services
FFS	Florida Forest Service
FNAI.....	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWC.....	Florida Fish and Wildlife Conservation Commission
FWRI.....	Florida Fish and Wildlife Research Institute
NRCS	Natural Resources Conservation Service
SJRWMD.....	St. Johns River Water Management District
SOR.....	Save Our Rivers
OALE.....	DACS Office of Agricultural Law Enforcement
OFW	Outstanding Florida Waters
P2000	Preservation 2000
WISF.....	Watson Island State Forest
TIITF.....	Board of Trustees of the Internal Improvement Trust Fund
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area