

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres (Updated July 2022)

Instructions for managers:

Complete each item and fill in the applicable correlating page numbers and/or appendix where the item can be found within the land management plan (LMP). If an item does not apply to the subject property, please describe that fact on a correlating page number of the LMP. Do not mark an "N/A" for any items below.

For more information, please visit the stewardship portion of the Division of State Lands' website at: <http://floridadep.gov/lands/environmental-services/content/land-stewardship>

Section A: Acquisition Information Items

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

Section B: Use Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
11	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	Page 1 (Executive Summary); Page 3 (I.A); Page 11 (II.B.3)
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	Page 4 (I.B); Page 11 (II.B.4); Page 15 (II.D.6); Page 15 (II.E); Page 17 (III); Page 19 (IV); Page 29 (V); Page 34 (VI); Page 41 (VII)
13	A description of alternative or multiple uses of the property considered by the lessee and a statement detailing why such uses were not adopted.	18-2.018	Page 14 (II.D)

14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	Page 1 (Executive Summary); Page 15 (II.E.1)
15	Include a provision that requires that the managing agency consult with the Division of Historical Resources, Department of State before taking actions that may adversely affect archeological or historical resources.	18-2.021	Page 19 (III.C-D); Exhibit H
16	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	Page 17 (II.E.6); Page 19 (III.C); Page 24 (IV.C.2-3); Page 41 (VI.F)
17	A determination of the public uses and public access that would be consistent with the purposes for which the lands were acquired.	259.032	Page 3 (I.A)
18	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent "balanced public utilization," specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	Page 12 (II.B.5)
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Page 15 (II.D.5); Exhibit S
20	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	Page 7 (I.C Goal 7); Page 19 (IV); Exhibits J & K
21	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	Page 3 (I.A); Page 11 (II.B.4)
22	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	Page 37 (VI.C)
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	Page 14 (II.D.1)

*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.

Section C: Public Involvement Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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24	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	Page 1 (Executive Summary); Page 16 (II.E.4); Exhibits R, S, T, V
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032	✓
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032	Page 16 (II.E.4); Exhibit T
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Exhibit T
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034 & 259.032	✓
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	Page 17 (II.E.4); Exhibit R
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	Exhibit R
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	Exhibit R

Section D: Natural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	Page 20 (IV.A); Exhibit I
33	Insert FNAI based natural community maps when available.	ARC consensus	Exhibits L, P, Q
34	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna and geological conditions.	18-2.021	Page 22 (IV.C); Exhibits I, L, M
35	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns and large sinkholes.	18-2.018 & 18-2.021	Page 27 (IV.G)
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	Page 27 (IV.E)
37	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding mineral resources, such as oil, gas and phosphate, etc.	18-2.018 & 18-2.021	Page 27 (IV.F)

38	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding fish and wildlife, both game and non-game, and their habitat.	18-2.018 & 18-2.021	Page 25 (IV.C.4); Exhibits L, M
39	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	Page 22 (IV.C.1); Exhibits L, M
40	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	Page 24 (IV.C.2); Exhibits L, P, Q
41	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032	Page 4 (I.C); Page 19 (III.C,D); Page 19 (IV); Page 34 (VI.A-B); Page 41 (VII)
42	Habitat Restoration and Improvement	259.032 & 253.034	Page 19 (IV)
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.	↓	Page 4 (I.C); Page 41 (VII)
42-B.	Provide a detailed description of both short (2-year planning period) and long-term (10-year planning period) management goals, and a priority schedule based on the purposes for which the lands were acquired and include a timeline for completion.		Page 4 (I.C)
42-C.	The associated measurable objectives to achieve the goals.		Page 4 (I.C)
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		Page 4 (I.C); Page 34 (VI); Page 41 (VII)
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		Page 13 (II.C.4), Exhibit U
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034	Page 8 (II.A.2); Page 10 (II.A.4); Page 12 (II.C); Page 41 (VII); Exhibits E, I, L, P, R
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034 & 259.032 ↓	Page 34 (VI); Exhibit N
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 5 (I.C. Goal 1); Page 34 (VI); Page 41 (VII)
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 5 (I.C. Goal 1)
44-C.	Measurable objectives (see requirement for #42-C).		Page 5 (I.C. Goal 1)
44-D.	Related activities (see requirement for #42-D).		Page 34 (VI); Page 41 (VII)
44-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032 & 253.034	Page 22 (IV.C)
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 7 (I.C Goal 4); Page 22 (IV.C.1); Page 41 (VII)
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 7 (I.C Goal 4); Page 22 (IV.C.1); Page 41 (VII)
45-C.	Measurable objectives (see requirement for #42-C).		Page 7 (I.C Goal 4)

45-D.	Related activities (see requirement for #42-D).		Page 22 (IV.C.1); Page 41 (VII)
45-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U
45-F	Assess the feasibility of managing the lands > 40 contiguous acres as a recipient site for gopher tortoises consistent with rules of the Fish and Wildlife Conservation Commission, as prepared by the agency or cooperatively with a Fish and Wildlife Conservation Commission wildlife biologist.	259.105	Page 27 (IV.C.6)
45-G	Economic feasibility of establishing a gopher tortoise recipient site, including the initial cost, recurring management costs and the revenue projections.	259.105	Page 27 (IV.C.6)
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. <i>See footnote.</i>	253.034	Page 39 (VI.D); Exhibit O
47	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	Exhibit V
48	Exotic and invasive species maintenance and control	259.032 & 253.034 ↓	Page 39 (VI.D)
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 7 (I.C Goal 5); Exhibit O
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 7 (I.C Goal 5)
48-C.	Measurable objectives (see requirement for #42-C).		Page 7 (I.C Goal 5)
48-D.	Related activities (see requirement for #42-D).		Page 39 (VI.D,E); Page 41 (VII)
48-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	Page 12 (II.B.7)
50	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	Page 20 (IV.B); Exhibits J,K
51	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding swamps, marshes and other wetlands.	18-2.021	Page 21 (IV.B.4)
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034	Page 20 (IV.B); Page 41 (VII)
53	Hydrological Preservation and Restoration	259.032 & 253.034 ↓	Page 20 (IV.B)
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 7 (I.C. Goal 7); Page 20 (IV.B)
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 7 (I.C. Goal 7)
53-C.	Measurable objectives (see requirement for #42-C).		Page 7 (I.C. Goal 7)
53-D.	Related activities (see requirement for #42-D).		Page 7 (I.C. Goal 7); Page 20 (IV.B)

53-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U
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Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	Page 18 (III.B); Exhibit G
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034	Page 18 (III.B); Exhibit G
56	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	Page 19 (III.C,D); Exhibit H
57	Cultural and Historical Resources	259.032 & 253.034	Page 17 (III)
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 7 (I.C. Goal 6)
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 7 (I.C. Goal 6)
57-C.	Measurable objectives (see requirement for #42-C).		Page 7 (I.C. Goal 6)
57-D.	Related activities (see requirement for #42-D).		Page 19 (III.C,D)
57-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U

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

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034	Page 12 (II.C); Exhibit D
59	Capital Facilities and Infrastructure	259.032 & 253.034	Page 12 (II.C.)
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 8 (I.C. Goal 8); Page 12 (II.C.)
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 8 (I.C. Goal 8); Page 12 (II.C.)
59-C.	Measurable objectives (see requirement for #42-C).		Page 8 (I.C. Goal 8); Page 12 (II.C.)
59-D.	Related activities (see requirement for #42-D).		Page 12 (II.C); Page 29 (V)
59-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034	Page 29 (V); Exhibit D
61	Public Access and Recreational Opportunities	259.032 & 253.034	Page 29 (V)
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 5 (I.C. Goal 2)
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 5 (I.C. Goal 2)
61-C.	Measurable objectives (see requirement for #42-C).		Page 5 (I.C. Goal 2)

61-D.	Related activities (see requirement for #42-D).		Page 11 (II.B.4); Page 16 (II.E.5,6); Exhibits A, B, C, D
61-E.	Budgets (see requirement for #42-E).		Page 13 (II.C.4); Exhibit U

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	✓
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034	Page 1 (Executive Summary)
64	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	Page 4 (I.B); Exhibit A
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032	Page 4 (I.C.); Page 41 (VII)
66	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, law enforcement activities.	253.034	Page 13 (II.C.4); Exhibit U
67	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032	Page 13 (II.C.4); Exhibit U
68	A statement of gross income generated, net income and expenses.	18-2.018	Page 13 (II.C.4); Exhibit U

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

TEN-YEAR LAND MANAGEMENT PLAN

FOR THE

CARY STATE FOREST

NASSAU AND DUVAL COUNTIES



PREPARED BY THE

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

FLORIDA FOREST SERVICE

APPROVED ON

MONTH DD, 2024

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
CARY STATE FOREST



Approved by:

Richard Dolan, Director
Florida Forest Service

Date

James Roberts, Chief
Forest Management Bureau

Date

**TEN-YEAR LAND MANAGEMENT PLAN
CARY STATE FOREST
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**TEN-YEAR LAND MANAGEMENT PLAN
CARY STATE FOREST
EXHIBITS**

CSF Ten-Year Management Accomplishment Summary	Exhibit A
Boundary Map	Exhibit B
Optimal Management Boundary Map	Exhibit C
Facilities, Recreation, and Improvements Map	Exhibit D
Road Maps	Exhibit E
Proximity to Significant Managed Lands	Exhibit F
Department of State Report on Archaeological and Historical Sites.....	Exhibit G
Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands	Exhibit H
Soil Types Map and Descriptions	Exhibit I
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Water Resources and BMAP Map.....	Exhibit K
FNAI Managed Area Tracking Record.....	Exhibit L
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Invasive Species Map	Exhibit O
Current FNAI Natural Communities Map	Exhibit P
Historic FNAI Natural Communities Map	Exhibit Q
Land Management Reviews (2012, 2017 and 2022)	Exhibit R
Compliance with Local Comprehensive Plan	Exhibit S
State Forest Management Plan Advisory Group Summary	Exhibit T
State Forest Summary Budget	Exhibit U
Arthropod Control Plans	Exhibit V
Ground Water Monitoring Wells Map.....	Exhibit W
Borrow Pit Map.....	Exhibit X
Florida Forever Project	Exhibit Y

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service
COMMON NAME: Cary State Forest (CSF)
LOCATION: Nassau and Duval Counties
ACREAGE TOTAL: 13,384.71 acres

Historic Natural Communities	Approximate Acreage
Wet flatwoods	3,987
Mesic flatwoods	3,470
Basin swamp	2,359
Sandhill	1,049
Dome swamp	669

Historic Natural Communities	Approximate Acreage
Floodplain swamp	575
Wet Prairie	452
Bottomland forest	364
Baygall	330
Depression marsh	28

*Note: Acreage difference due to two parcels totaling 130 acres that were not mapped and are managed by the St. Johns River Water Management District, as well as rounding error.

TIITF LEASE AGREEMENT NUMBERS: 3687 and 4609

USE: Single ____ Multiple X

MANAGEMENT AGENCY

FDACS, 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 and Archaeological Resource Management

DESIGNATED LAND USE:

Multiple-Use State Forest

SUBLEASES:

Sublessor: FDACS, Sublessee: City of Bryceville;

Sublessor: TIITF, Sublessee: Nassau County

ENCUMBRANCES:

Various easements

TYPE OF ACQUISITION:

1935 Florida Conservation Committee, Florida Forever, Save Our Rivers, U.S. Department of Defense Navy, and the City of Jacksonville

UNIQUE FEATURES:

Thomas Creek and three unnamed tributaries flow through the forest

ARCHAEOLOGICAL / HISTORICAL:

Three known sites

MANAGEMENT NEEDS:

Adequate funding to implement Hydrological Restoration Plan, Ground Cover Restoration and Reforestation

ACQUISITION NEEDS:

Approximately 7,556 acres located in the Optimal Management Boundary

SURPLUS ACREAGE:

None

PUBLIC INVOLVEMENT:

2012, 2017, and 2022 Land Management Reviews, Management Plan Advisory Group and Public Hearing, Liaison Committee Meetings, and FDEP Acquisition and Restoration Council Public Hearing - - - - -

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

ARC Approval Date: _____ TIITF Approval Date: _____

Comments: _____

I. Introduction

Cary State Forest (CSF) was established as Florida's second state forest in 1937. The forest is known for its scenic mature flatwoods, sandhill, and basin marsh communities. CSF is comprised of approximately 13,384.71 acres located approximately 23 miles west of downtown Jacksonville in western Duval and southwestern Nassau Counties (see Exhibit B). The Cary, Monticello, and Norfolk Southern Tracts are contiguous while the Thomas Creek Tract is separate and located to the north. CSF protects portions of the St. Johns, St. Marys, and Nassau River watersheds. Thomas Creek and several unnamed tributaries flow through and out of the forest. CSF is important to aquifer recharge and surface water storage. In addition, it is a key component in a regional wildlife and recreation corridor, connecting other publicly owned lands.

Thomas Creek meanders through a nearly intact, mature bottomland hardwood forest and floodplain swamp. A closed canopy of large live oak, swamp laurel oak, swamp chestnut oak, sweetbay, southern magnolia, swamp tupelo, sweetgum, red maple, cypress, and loblolly pine dominate this unique natural feature of CSF. The slowly flowing waters of Thomas Creek are darkly stained with naturally occurring tannic acids from the hardwoods through which the creek flows. This scenic blackwater creek is home to otters, alligators, and water moccasins. The creek can be viewed from the three wooden bridges along Acree Road.

CSF contains nine different natural communities, each containing unique flora and fauna. The natural communities found on the forest support a variety of wildlife, including Sherman's fox squirrel, gopher tortoise, wood stork, swallow-tailed kite, eastern bluebird, wild turkey, white-tailed deer, bobcat, and various wading birds. The forest also supports several threatened and endangered plant species including night-flowering wild petunia, purple honeycomb-head, and several wild orchids.

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 CSF center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) Florida Statutes. 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 CSF 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 to water resources, and health of associated wetland 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, Florida Statutes (F.S.), and was prepared utilizing guidelines outlined in Section 18-2.021 of the Florida Administrative Code (FAC). It is not an annual work plan or detailed operational plan but provides general guidance for the management of CSF for the next ten-year period and outlines the major concepts that will guide management activities on the forest. Though not part of this plan, each state forest also updates and maintains five-year action plans for silviculture, ecology, prescribed fire, roads and bridges, boundary maintenance, and recreation. These internal plans are updated annually with the current year serving as the annual operations plan for the forest.

B. Past Accomplishments

Data regarding past management activities and public use on CSF 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 the forest but summarizes major activities. It does not list the multitude of daily activities and public interactions involved in managing the forest.

There have been numerous events, developments, and activities since the 2012 Ten-Year Land Management Plan was approved. Some noteworthy accomplishments include:

- Prescribed fire applied to more than 12,088 acres
- 57,402 tons of timber harvested from 1,360 acres
- 231,846 containerized longleaf pines planted on 327 acres
- 20,328 bare root slash pines planted on 28 acres
- 1,250 bare root bald cypress planted on 4 acres
- 10,515 acres inventoried (>10% annually)
- 95 acres treated for invasive plants
- 73 miles of forest boundary marked or maintained
- 143 miles of roads graded
- 66 miles of roads rebuilt and stabilized
- 37 culverts installed
- 4 low water crossings installed
- 3,658,095 estimated day-use visitors
- 78 programs or tours conducted on the forest
- 126 apiary sites maintained

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

The following goals and objectives provide direction and focus management resources for the next ten-year planning period. Funding, agency program priorities, and the potential for wildfire during the planning period will determine the degree to which these objectives can be met. Management activities on CSF 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 goals, with each goal containing short-term objectives, long-term objectives, or ongoing objectives. Short-term objectives are those that are achievable within a two-year planning period, and long-term objectives 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 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: Maintain public access and recreation opportunities that are compatible with multiple-use management. (Ongoing objective)

Performance Measure: Number of visitor opportunities per day

Objective 2: Evaluate the potential for additional public access and recreation areas on CSF that are compatible with multiple-use management. Recreation opportunities will fall under the scope of multiple-use management in accordance with watershed protection, conservation, ecosystem restoration, and as detailed in the purpose for acquisition. (Short-term objective)

Performance Measure: List of viable access points and visitor opportunities for consideration

Objective 3: Continue to safely integrate visitor use into CSF, follow the Five-Year Outdoor Recreation Plan, and update 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: Continue to involve and meet with the Liaison Committee. The purpose of Liaison Committee meetings is to facilitate communication between the FFS and committee members (and the groups they represent) about state forest management and to obtain feedback from these entities. The Liaison Committee consists of local residents, community leaders, special interest

group representatives (vendors, hunters, and other recreation users, etc.), environmental group representatives, and other public / private entities. (Ongoing objective)

Performance Measures:

- Liaison Committee remains organized
- Continued annual meetings

Objective 5: Maintain cooperation with Florida Fish and Wildlife Conservation Commission (FWC) to develop specific hunting season quotas and bag limits, and to address hunting issues which are to be agreed upon at an annual cooperator meeting between FFS and FWC. (Ongoing objective)

Performance Measures:

- Annual letter on agreed-upon hunting issues
- Updated rules posted and WMA brochures available online at MyFWC.com

Objective 6: 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 CSF currently contains approximately 8,375 acres of fire-dependent communities. CSF 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 two (2) to five (5) years for most fire-dependent communities, FFS will attempt to conduct prescribed burns on an average of approximately 1,400 to 2,500 acres per year. Currently FFS staff estimates 3,440 (past 5 years) acres at CSF 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 CSF 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 completed
- 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 Florida Fish and Wildlife Conservation Commission (FWC), develop a Wildlife Management Strategy addressing the wildlife species for CSF, with emphasis on imperiled species and associated management prescriptions for their habitats. (Long-term objective)

Performance Measures:

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

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: Invasive Species Management and Control**

Objective 1: Continue to follow and annually update the Five-Year Ecological Plan for CSF, to locate, identify, and control 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 CSF invasive species database information annually

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

Objective 1: Ensure all known sites are recorded in the Florida 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 (BMP) that are applicable to forest road maintenance

and construction, construction of pre-suppression firelines, timber stand improvement activities, timber harvesting, 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: 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: CSF staff, along with help from volunteers, and / or user groups, will continue maintenance of four (4) parking areas, two (2) trailheads, 23 miles of trails, and 33 miles of open roads. (Ongoing objective)

Performance Measure: Number of existing facilities, miles of roads, and miles of trails maintained

Objective 2: Continue to follow the Five-Year Roads and Bridges Management Plan and update annually. (Ongoing objective)

Performance Measures:

- Continued implementation of the Five-Year Roads and Bridges Management Plan
- Annual updates of the Five-Year Roads and Bridges Management Plan completed

Objective 3: Continue to implement the Five-Year Boundary Survey and Maintenance Management Plan and update annually. Approximately 20% of the forest boundary will be 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 annually per State Forest Handbook guidelines
- 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 the Cary State Forest.

2. Legal Description and Acreage

The CSF encompasses 13,384.71 acres, more or less.

The forest is comprised of four separate tracts located along the Nassau-Duval County line in western Duval and southwestern Nassau Counties. Approximately 8,321 acres or 62% of CSF is within Duval County and 5,064 acres or 38% is within Nassau County. The property is located in all or part of Sections 31, 32, 40, 41 Township 01 North, Range 25 East; Sections 4-6, 31, 43, 44 Township 01 South, Range 25 East; Sections 6,7 Township 02 South, Range 25 East; Sections 25-27, 34-37 Township 01 North, Range 24 East; Sections 15-17, 19-28, 34- 36 Township 01 South, Range 24 East; and Sections 1,2 Township 02 South, Range 24 East. Acreage acquired is identified in Table 1.

Table 1. CSF Acreage by Funding Source

Funding Source	Acres
1935 Florida Conservation Committee	3,412.50
Florida Forever	7,463.22
Save Our Rivers	2,508.99

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF) is on record at the Florida Department of Environmental Protection (FDEP) 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 15 miles of the forest are mapped in Exhibit F and listed in Table 2.

Table 2. Nearby Significant Public Conservation Lands

Tract	Managing Agency	Distance
Whitehouse Field	USDOD, Navy	Adjacent
Thomas Creek Conservation Area	WMD / COJ	Adjacent
Monticello Wildlands (Monticello A, Scarborough, Block, International Tracts)	COJ	Adjacent
Jacksonville-Baldwin Rail Trail	COJ	Adjacent
Monticello Wildlands Conservation Easement	Duval County	Adjacent
Camp Milton Historic Preserve	COJ	5 miles SE
Miller Farm	JEA	5 miles SW
Cecil Field Conservation Corridor	COJ	7 miles S
Peterson Tract	JEA	7 miles S
St. Marys River House	TNC	7 miles W
Stone Mountain Industrial Park	WMD	7 miles E
Bulls Bay Preserve	COJ	9 miles SE
Loblolly Mitigation Preserve	LMB, LLC	9 miles SW
Yellow Water Branch Trailhead	COJ	10 miles SW
Jennings State Forest	FFS	12 miles S
Four Creeks State Forest	FFS	13 miles NE
Sal Taylor Creek Preserve	COJ	13 miles S

Tract	Managing Agency	Distance
Ribault River Preserve	COJ	13 miles E
McGirts Creek Preserve	COJ	14 miles SE
Branan Field Mitigation Park Wildlife Area	FWC	14 miles SE
Thomas Creek Preserve	COJ	15 miles NE

COJ – City of Jacksonville

FFS – Florida Forest Service

FWC – Fish and Wildlife Conservation Commission

JEA – Jacksonville Electric Authority

LMB – Loblolly Mitigation Bank

TNC – The Nature Conservancy

WMD – Water Management District

USDOD – United States Department of Defense

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

The original 3,413-acre Cary Tract was acquired by purchasing multiple parcels between 1935 and 1942, establishing CSF as Florida's second state forest (See Table 3). CSF is named after the George F. and Charlotte C. Cary family who sold the first parcel to the state. Between July 20th, 2005, and May 14th, 2008, the Thomas Creek Tract (4,039 acres), Monticello Tract (3,942 acres), and Norfolk Southern Tract (1,651 acres) were acquired through Florida Forever's Northeast Florida Timberlands and Watershed Reserve Project and funds provided by the US Navy and the City of Jacksonville.

The lease agreements can be viewed at the offices of the Florida Department of Environmental Protection (FDEP), Division of State Lands and CSF Headquarters. All parcels acquired are identified in Table 3.

Table 3. Parcel Acquisition

Parcel Name	Lease No.	Lease Date	Acres
1935 Florida Conservation Committee	3687	11/22/1968	3,412.50
Monticello Drug	3687	7/7/2006	3,942.12
Norfolk Southern	3687	3/18/2009	1,651.00
Thomas Creek / Rayonier*	4609	3/18/2009	570.76
Thomas Creek / Rayonier	4609	3/18/2009	1,598.02
Thomas Creek / Rayonier*	4609	9/8/2009	15.21
Thomas Creek / Rayonier	3687	4/29/2010	736.87
Foster Milne	3687	4/29/2010	1,133.23
Red Shirt	3687	1/26/2011	325.00

* TIITF and WMD 50% interest

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

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

In the mid-1930s, Florida Governor David Sholtz, at the request of President Roosevelt, appointed a Conservation Committee. This committee drafted legislation, which was passed by the 1935 Florida Legislature, authorizing the acquisition, development, and management of a system of state forests and parks, and appropriating funds for this purpose. The Cary Tract was established through this program.

In December 2001, the Acquisition and Restoration Council (ARC) added the Northeast Florida Timberlands and Watershed Reserve project to the Florida Forever 2001 Priority List. This fee-simple and less-than-fee acquisition located in Clay, Duval, and Nassau Counties and sponsored by The Nature Conservancy (TNC), the City of Jacksonville and SJRWMD, funded procurement of the Thomas Creek, Monticello, and Norfolk Southern Tracts. Under the program, the main objectives for the acquisition are to:

- Increase the protection of Florida's biodiversity at the species, community, and landscape levels.
- Increase the amount of open space available in urban areas conserving spaces suitable for greenways or outdoor recreation that are compatible with conservation purposes.
- Increase natural resource-based public recreation and educational opportunities: camping, picnicking, nature appreciation, hiking, and horseback riding will be considered.
- Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state.

The management prospectus for this Florida Forever project can be found in Exhibit Y.

2. Degree of Title Interest Held by the Board

All tracts are held 100% fee simple by the TIITF except the original Thomas Creek parcel (2,169 acres). The St. Johns River Water Management District (SJRWMD) owns a 50% undivided interest of this parcel. Lease agreements 3687 and 4609 delegate authority to manage the CSF.

3. Designated Single or Multiple-Use Management

CSF 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 Numbers 3687 and 4609.

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 CSF provide for multiple use, as well as generate revenue, to offset management costs. Revenue producing activities will be considered when they have been determined to be financially feasible and will not adversely impact management of the forest.

Current and potential revenue producing activities for CSF include, but are not limited to:

- *Timber Harvests* – Timber harvests on CSF will be conducted on a regular basis to improve forest health, promote wildlife habitat, restore plant communities, and provide other benefits.
- *Recreation Fees* – Fees are currently collected for day-use, camping, and miscellaneous commercial vendor permits.
- *Other miscellaneous* – Other miscellaneous forest products including, but not limited to, apiary leases, palm fronds and berries, pinecones, pine straw, and firewood may be considered.

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 CSF.

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

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

C. Capital Facilities and Infrastructure

1. Property Boundaries Establishment and Preservation

The CSF boundary lines are managed by state forest personnel in accordance with the guidelines stated in the State Forest Handbook (FFS 2016). Approximately 95% of CSF boundaries have been painted and signs posted according to FFS boundary marking specifications. Forest boundary firelines are partially established and will be completed where appropriate in uplands. The state forest boundary lines are to be maintained by periodic clearing, repainting, and reposting of state forest boundary signs by FFS personnel.

2. Improvements

Major FFS structures include the CSF headquarters office, the Jacksonville District Office, District Shop, recreation pavilion, pole barn / shop, recreation bathhouse / restrooms, fire tower, two boardwalks, well pumphouse, mobile home site near the CSF headquarters and a metal woodshed. Other structures located on subleases to Nassau County include a Nassau

County Fire Station, two separate stretches of the same Florida Power and Light (FPL) power line and a Jacksonville Electric Authority (JEA) power line. A single lane steel bridge crossing No Catch Swamp is located on No Catch Road about half-way between the intersections of Cypress Pond and Basin Roads.

3. On-Site Housing

FFS may establish on-site housing (mobile / manufactured home) on CSF if deemed necessary to alleviate security and management issues. The need and feasibility specific 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 the purpose of 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.

There is potential to establish on-site housing at the future Monticello Recreation Area near Garden Street. Currently an FWC officer is utilizing a trailer site near the CSF headquarters on the Cary Tract.

4. Operations Infrastructure

a. Operations Budget

For Fiscal Year 2022-2023, the annual operational budget for CSF was \$39,711.60. This amount includes expense, fuel, contractual encumbrance, and expense encumbrance. A summary budget for CSF is contained in Exhibit U. Implementation of any of the activities within this management plan is contingent on availability of funding, other resources, and other statewide priorities.

b. Equipment

To carry out the mission of the FFS, CSF maintains a diverse range of equipment such as one pick-up truck, road grader, loader, dump truck, farm tractor, ATV, ATV pull-behind harrows, UTV, batwing mower, riding mower, and several other pieces of landscape maintenance equipment. Additional equipment can be used from other resources throughout the Jacksonville District, when needed, for management activities on CSF.

c. Staffing

The CSF is managed by one (1) state lands Forester. Additional FFS employees provide support to forest resource planning, administrative function, and work project coordination, including the Duval County Forest Area Supervisor, District Recreation Coordinator, OPS Biologist, and Nassau County based Forest Rangers.

The Forester will work to achieve the goals outlined in this management plan. Resource management and planning activities, such as timber cruising and sale administration are the responsibility of the Forester under the supervision of the Resource Administrator and District Manager. The recreation planning and management activities, such as trail flagging

/ identification and recreation facility placement will be done in conjunction with the Recreation Coordinator. The Forester will also work in conjunction with the Forest Area Supervisor under the direction of the Operations Administrator and District Manager to facilitate forest operations, such as road maintenance, operations / recreation facility maintenance, and prescribed burning.

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, communication towers and antennas, 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 with nor considered appropriate use within or adjacent to the state forest boundaries. Although no water resource projects are being considered at this time on SJRWMD-owned lands within CSF, they should not be precluded.

2. Additional Land Needs

The purchasing of additional land within the optimal management boundary would facilitate restoration, protection, maintenance, and management of the natural resources on CSF.

There are 60 parcels of land comprised of 7,556 acres adjacent to the property which should receive priority for acquisition, as they would benefit the management of the property. FFS will work with the property owners, on a willing seller basis, to acquire these parcels. 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 recreational use, and GIS modeling and analysis.

The evaluation of CSF by FFS has determined that all portions of the forest are being managed and operated for the original purpose 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 CSF is recommended for potential surplus.

4. Adjacent Conflicting Uses

Residential and commercial development adjacent to and within several miles of the CSF boundary may restrict prescribed burning due to smoke management concerns.

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.

5. Compliance with Local Comprehensive Plan

This plan was submitted to the Board of County Commissioners in Nassau and Duval Counties for review and compliance with their local comprehensive plans. See Exhibit S.

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.

Currently there is one (1) established utility corridor on CSF. Florida Power and Light Company has a 230kV power transmission line running southwest to northeast bisecting the Cary and Thomas Creek Tracts. The FFS does not consider CSF suitable for any new linear facilities.

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.

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 the SJRWMD. Requests for linear facility uses will be handled according to the Governor and the Cabinet's linear facilities policy.

E. Agency and 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 Numbers 3687 and 4609. 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 DHR regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, F.S. DHR will be consulted prior to the initiation of any ground disturbing activities by the FFS or any other agency involved with the forest.

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 resources 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 CSF are stated in Chapter 5I-4 of the 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 CSF. This task is shared among multiple FWC officers who also patrol and enforce laws on properties and waterways outside of CSF.

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

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

3. Wildland Fire

FFS has the primary responsibility for prevention, detection, and suppression of wildfires wherever they may occur. FFS shall provide leadership and direction in the evaluation, coordination, allocation of resources, and monitoring of wildfire management and protection as stated in 590.01, F.S. FFS also has the responsibility of authorizing prescribed burns as stated in 590.02 (1)(i), F.S.

4. Public and Local Government Involvement

This plan has been prepared by FFS and will be implemented by FFS. FFS responds to public involvement through liaison committees, management plan advisory groups, public hearings, and through ongoing direct contact with user groups. Land Management Review Teams as coordinated by the Division of State Lands have conducted three reviews of management plan implementation in 2012, 2017, and 2022. See Exhibit R. The review teams' recommendations were addressed in this plan, as appropriate.

A state forest liaison committee of private citizens and representatives of forest user groups meet annually to provide input on forest management activities and share their ideas with FFS staff to improve the state forest.

The plan was developed with input from the CSF Management Plan Advisory Group and was reviewed at a public hearing on January 11, 2024. A summary of the advisory group's meetings and discussions, as well as written comments received on the plan, are included in Exhibit T. 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

Volunteers are important assets to CSF. Volunteer activities may occur as one-time events or in association with long-term recurring projects and routine maintenance. Additional volunteer recruitment will continue to assist furthering the FFS's mission.

6. Friends of Florida State Forest

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

Cary Tract

CSF was originally managed from the FFS state office in Tallahassee until 1971 when management responsibility was given to the Jacksonville District. Prior to FFS acquisition the forest was managed for timber, turpentine, cattle, and agricultural production among other uses by the Cary family and other local landowners.

Since acquisition in 1939, the forest has been managed for multiple use by the FFS and State of Florida. Forest management has included various silvicultural treatments such as thinning and clear-cuts with artificial regeneration. Group selections (small clear-cuts) and seed tree cuts for natural regeneration and uneven-aged management goals have also been utilized. Some portions of the wetland communities appear to have had complete and partial harvests prior to FFS management.

In an effort to improve fire protection for local communities, in 1973 the TIITF agreed to a 50-year lease of one acre of CSF to Nassau County for the construction of a Nassau County Fire Station and meeting hall. The FDACS also subleased five acres to the city of Bryceville for community improvements including a library / community center and a baseball field.

Monticello Tract

Prior to state acquisition, the Monticello Tract was managed by Jacksonville-based Monticello Land and Monticello Drug Companies. A former local landowner, St. Regis Timber Company, leased and managed this parcel prior to the Monticello companies. When acquired, the property had not been prescribed burned since the 1970s.

Both St. Regis and the Monticello companies managed the property intensively for timber production and other uses including hunting leases and turpentine production. Upon acquisition, the Monticello Tract's upland communities were and continue to be dominated by merchantable

and pre-merchantable timber, mostly intensively managed slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), loblolly pine (*Pinus taeda*), and sand pine (*Pinus clausa* var. *clausa*) plantations. Most of the wetland communities appear to have had complete or partial timber harvests during past ownerships. A 6" water monitoring well is located on the Monticello Tract and has been plugged. The monitoring well has since been abandoned and is no longer in use. Based on a 2005 DEP boundary survey map, there are two (2) former United States Geological Survey (USGS) Water Resources Division observation wells within several yards of another, but only one is visibly verifiable.

Thomas Creek Tract

The Thomas Creek and Gopher Ridge parcels of the current CSF Thomas Creek Tract were acquired from Rayonier Forest Resources, Inc. Engraved concrete boundary markers on site indicate portions of these parcels may have been owned or leased by the St. Regis Timber Company at some point prior to Rayonier. The Foster-Milne parcel of the Thomas Creek Tract was acquired by the Foster and Milne families. This parcel changed ownership many times over the past 50 years, including various timber companies, land holdings, and small private, non-industrial forest landowners such as the Foster and Milne families.

The Thomas Creek parcel's upland communities were mostly clear-cut prior to State acquisition. Most of the wetland communities appear to have had complete or partial timber harvests during past ownerships. Past land uses on the Thomas Creek, Gopher Ridge, and Foster-Milne parcels include but are not limited to intensive and non-intensive timber production, cattle grazing, turpentine production, agricultural production, and nearby suspected homesteads.

The Thomas Creek Tract also includes the 325-acre Red Shirt Parcel that is owned fee simple by St. Johns River Water Management District and is managed by FFS under a lease agreement as part of CSF. Past land use here is very similar to the other parcels on the tract. Further, there are two unmapped parcels (totaling 130 acres) of CSF on the eastern side of the railroad tracks on the eastern boundary of the Thomas Creek Tract which are now managed by the St. Johns River Water Management District under a management agreement with FDACS.

Norfolk Southern Tract

This parcel was acquired from the Norfolk Southern Railroad Company. The tract was intensively managed for timber production in both the upland and wetland communities. Approximately 40% of wetland communities were clear-cut by the previous landowner prior to State acquisition. Upland communities are approaching merchantability and consist of bedded slash pine plantations with small clear-cut areas of naturally regenerating slash pine. The property was also leased by a local hunting club prior to acquisition.

B. Archaeological and Historical Resources

A review of information contained in the Florida Department of State, Division of Historical Resources, Florida Master Site file has determined there are three (3) recorded archaeological sites and one (1) recorded historic cemetery on CSF. They are currently not listed in the National Register of Historic Places. See Exhibit G.

Table 4. Historical Sites on CSF

Site ID	Site Name	Address	Site Type
NA00746	Medium Chicken	Bryceville	Archaeological site
NA01278	Thomas Creek Cattle Dip	Bryceville	Archaeological site
NA01279	Bryce Cattle Dip	Bryceville	Archaeological site
NA01865	Thomas Creek Cemetery	Bryceville	Cemetery

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. 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. (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 one assigned CSF staff member is trained by DHR as an Archaeological Resource (ARM) monitor. Additionally, seven district staff trained as ARM monitors provide oversight as required for any ground disturbing and management activities that occur, as needed. 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 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 personnel 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 resource discoveries 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 for FFS management of CSF is protection of wetlands and associated natural communities within the floodplain of the St. Johns River through a stewardship ethic to assure these resources will be available for future generations. Management activities will be executed in a manner to minimize soil erosion and maintain and protect/enhance the hydrological resources on

CSF. 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 CSF's waterbodies and their associated water quality and native plants and animals.

CSF falls within the jurisdiction of the SJRWMD. FFS will coordinate with SJRWMD and/or FDEP, 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 CSF was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). There are several different soil series found on CSF. They range from deep, well-drained sands to poorly drained organic muck soils associated with wetlands. The predominant soils listed by the NRCS are Boulogne fine sand, Evergreen-Wesconnett complex, Leon fine sand, Evergreen-Leon muck, Lynn Haven fine sand, and Surrency loamy 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 minimize soil erosion. 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.

The blown-out culvert system at Line Road on Thomas Creek and Jennifer Road at the Culvert Crossings across Thomas Creek has minor erosion due to flooding. Additional erosion issues must be addressed in areas on Norfolk Road on the Norfolk Southern Tract. Across the forest, excessive jeep/off-road style vehicle use damages roads and contributes to minor erosion issues. Ongoing road maintenance and repair plans should resolve those issues in the future.

B. Water Resources

The water resources on CSF 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 wetland restoration into the overall resource management program as opportunities arise, particularly where wetland systems have been impaired or negatively impacted by previous management activities or natural disasters. See Exhibit K for a map of the water resources at CSF.

1. Resources

CSF protects portions of the St. Johns, St. Marys, and Nassau River watersheds. There are two freshwater creeks that flow through and originate within the CSF boundary. The first is Thomas Creek, which flows northeast through the Thomas Creek Tract towards Four Creeks

State Forest and the headwaters of the Nassau River. The second creek on CSF is an unnamed, intermittent creek and begins within No Catch Swamp on the Norfolk Southern Tract. It then flows northwest through the Monticello Tract and then west out of the swamp and southwest out of CSF, eventually flowing into Brandy Branch, which flows into the St. Marys River. There are two unnamed tributaries within CSF that flow into Thomas Creek. The first is located on the western portion of the Thomas Creek Tract and flows south directly into Thomas Creek. The second intermittent creek / headwaters begin on the northeastern portion of the Cary Tract and flows northeast out of CSF through private lands and eventually flows directly into Thomas Creek. There are several drainages and wetlands that flow out of CSF into major waterways such as the Trout River and McGirts Creek. See Exhibit K.

Additionally, two man-made borrow pits have formed small ponds on CSF. The first is located along Motes Road on the Cary Tract, is infested with torpedo grass, and is no longer used as a borrow pit. The torpedo grass must be controlled or eliminated to prevent spread of this invasive species. The second pond is located directly east of a large windrow along the north end of Sandhill Road on the Thomas Creek Tract. This borrow pit was created by prior landowner(s) and will not be used by FFS for road material. See Exhibit X.

Approximately 35% of the CSF land area is occupied by wetlands, with 71% of these wetlands being basin swamp. These crucial wetland communities provide watershed protection, aquifer recharge for the region, valuable water storage / flood control, water filtration, and aquatic habitat preservation. No Catch Swamp, the Thomas Creek floodplain, and bottomland forest communities are significant wetland communities within CSF.

2. Water Classification

The Florida Department of Environmental Protection, Standards Development Section reports all surface waters within, adjacent to, or within five (5) miles of CSF are classified as Class III waters (Fish Consumption, Recreation and Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife) according to Rule 62-302.400, F.A.C.

According to subsection 62-302.700(9), F.A.C., there are no Outstanding Florida Waters (OFWs) within or adjacent to Cary State Forest. The OFW closest to Cary State Forest is the Timucuan Ecological and Historic Preserve, which is located 10 miles to the northeast. See Exhibit J.

3. Water Protection

Water resource protection measures, at a minimum, will be accomplished using BMP guidelines as described in the most current version of the Silviculture Best Management Practices Manual.

4. Swamps, Marshes, and Other Wetlands

In addition to the waterways, CSF contains approximately 4,374 acres in seven hydric communities: basin swamp, dome swamp, floodplain swamp, bottomland forest, baygall, basin marsh and depression marsh. Maintenance of naturally occurring wetland communities

is a high priority and will be accomplished through appropriate management activities, including prescribed fire when appropriate, and adherence to Silviculture BMP.

5. Wetland Restoration

Wetland restoration objectives on the state forest include erosion control, restoration of water levels and / or hydroperiods, and restoration of wetland plant and animal communities. To achieve these objectives, restoration activities may involve road and soil stabilization, water level control structure removal or installation, invasive species control, site preparation and re-vegetation with native wetland 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. Wetland restoration projects should be conducted in conjunction with other restoration activities indicated elsewhere in this plan.

Where applicable, CSF, with assistance from the FFS Forest Management Bureau, may pursue funding to develop and implement wetland 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 SJRWMD. Any activities requiring permits from the water management district will be handled accordingly and will follow the latest edition of the FFS Silviculture BMP Manual.

6. Florida Department of Environmental Protection Basin Management Action Plans

A Basin Management Action Plan (BMAP) 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.

CSF resides in / adjacent to the Lower St. Johns Mainstem BMAP zone. See Exhibit K.

C. Flora and Fauna Resources

1. Rare, Threatened, and Endangered Species

The intent of FFS is to manage CSF in a fashion that will minimize the potential for wildlife and plant 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 5.

Table 5. Rare, Threatened, or Endangered Species Documented on CSF

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
American alligator	<i>Alligator mississippiensis</i>	G5	S4	SAT	FT(S/A)
Blueflower butterwort	<i>Pinguicula caerulea</i>	G4	S3S4	N	LT
Crested yellow orchid	<i>Platanthera cristata</i>	G5	S3S4	N	LT
Giant Orchid	<i>Pteroglossaspis ecristata</i>	G4	S4	N	T
Gopher tortoise	<i>Gopherus polyphemus</i>	G3	S3	C	ST
Hooded pitcherplant	<i>Sarracenia minor</i>	G4	S4	N	ST
Little blue heron	<i>Egretta caerulea</i>	G5	S4	N	ST
Painted bunting	<i>Passerina ciris</i>	G5	S3	N	N
Snowy egret	<i>Egretta thula</i>	G5	S3	N	N
Tricolored heron	<i>Egretta tricolor</i>	G5	S4	N	ST
White ibis	<i>Eudocimus albus</i>	G5	S4	N	N
Wood stork	<i>Mycteria americana</i>	G4	S2	T	FT
Purpledisk honeycomb-head	<i>Balduina atropurpurea</i>	G2	S2	N	E
Frosted flatwoods salamander	<i>Ambystoma cingulatum</i>	G2	S1	T	FT
Southern dusky salamander	<i>Desmognathus auriculatus</i>	G3	S1	N	N
Pondspice	<i>Litsea aestivalis</i>	G3?	S2	N	E
Southern milkweed	<i>Asclepias viridula</i>	G2	S2	N	T
Many-flowered grass-pink	<i>Calopogon multiflorus</i>	G2G3	S2S3	N	T
Large rosebud orchid	<i>Cleistes divaricata</i>	G4	S1	N	E
Ciliate-leaf tickseed	<i>Coreopsis integrifolia</i>	G1G2	S1	N	E
Florida toothache grass	<i>Ctenium floridanum</i>	G2	S2	N	E
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	G3	S3	N	N
Eastern indigo snake	<i>Drymarchon couperi</i>	G3	S2	T	FT
Florida pine snake	<i>Pituophis melanoleucus</i>	G4	S3	N	ST
Timber rattlesnake	<i>Crotalus horridus</i>	G4	S3	E	FE
Red-cockaded woodpecker	<i>Dryobates borealis</i>	G3	S2	E	FE
Roseate spoonbill	<i>Platalea ajaja</i>	G5	S2	N	ST

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Swallow-tailed kite	<i>Elanoides forficatus</i>	G5	S2	N	N
Hartwrightia	<i>Hartwrightia floridana</i>	G2	S2	N	T
Gopher frog	<i>Lithobates capito</i>	G2	S2	N	T
Tawny sanddragon	<i>Progomphus alachuensis</i>	G3	S3	N	N
Nightflowering wild petunia	<i>Ruellia noctiflora</i>	G3	S2	N	E
Southern fox squirrel	<i>Sciurus niger</i>	G5TG	S3	N	N
Florida black bear	<i>Ursus americanus floridanus</i>	G5T4	S3	N	N
Variable-leaf crownbeard	<i>Verbesina heterophylla</i>	G2	S2	N	E

*** STATUS/RANK KEY**

FNAI Global Rank: G1= Critically Imperiled, G2= Imperiled, G3= Rare, G4= Secure, G5= Demonstrably Secure, G#Q= Rare but questionable whether it is species or subspecies

FNAI State Rank: S1= Critically Imperiled in Florida, S2= Imperiled in Florida, S3= Rare in Florida, S4= Secure in Florida, S5= Demonstrably secure in Florida, SU= Not under review in Florida

Federal Status (USFWS): 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, E= Endangered, N= Not currently listed, T= Threatened, SAT= Treated as Threatened due to similarity of appearance.

State Status (FWC): C= Candidate for listing, FE= Listed as Endangered Species at the Federal level by the USFWS, FT= Listed as Threatened Species at the Federal level by the USFWS, FT(S/A)= Federal Threatened due to similarity of appearance, N= Not currently listed, nor currently being considered for listing, ST= State population listed as Threatened by the FFWCC.

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

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. FNAI reports a few documented Element Occurrences of rare or endangered species within the vicinity of the property. See Exhibit L.

Documented habitat includes basin marsh, basin swamp, baygall, bottomland forest, dome swamp, floodplain marsh, floodplain swamp, mesic flatwoods, sandhill, wet flatwoods, and wet prairie.

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 CSF. Rare species and communities that have not been documented but that are likely or potential at the site are listed in Exhibit L.

c. Land Acquisition Projects

CSF is located within the Northeast Florida Timberlands and Watershed Reserve Project,

a Florida Forever project, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program.

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. No Strategic Habitat Conservation Areas (SHCA) occur within a reasonable distance of the property.
- b. CSF is located within an area of low to moderate Species Richness, which indicates the total number of species within potential habitat identified in a specific location.
- c. CSF is adjacent to Priority Wetlands, which are wetlands significant to listed wetland-dependent vertebrates.

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 area. 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 species. The FWC Species Action Plans provide beneficial resource guidelines for habitat management and monitoring of the respective species. For reference, the FWC Species Action Plans can be accessed at MyFWC.com.

4. Game Species and Other Wildlife

Wildlife management plays an important role in the management of resources on CSF. The Cary, Monticello, and Thomas Creek Tracts currently comprise the 11,410-acre Cary Wildlife Management Area (WMA). Management of this area will be directed to the production of biological diversity and species composition consistent with existing natural community types. Such communities will be restored and / or maintained through habitat management. All biological resources will be managed to maintain diversity.

The FWC provides cooperative technical assistance in managing wildlife and fish populations, setting seasons, establishing bag and season limits, and overall wildlife and fish law enforcement. Hunting on the Cary State Forest WMA is provided through both non-quota and quota hunts. Hunting is prohibited in the environmental education area on the Cary Tract and the private easement on the Monticello Tract.

Game species on the Cary WMA include white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), wild hog (*Sus scrofa*), gray squirrel (*Sciurus carolinensis*), eastern cottontail rabbit (*Sylvilagus floridanus*), northern bobwhite (*Colinus virginianus*), and migratory birds in season. Visit MyFWC.com to view the Cary WMA regulations summary brochure.

Other notable wildlife documented in the WMA includes gopher tortoise (*Gopherus polyphemus*), southern fox squirrel (*Sciurus niger*), bobcat (*Lynx rufus*), great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), American alligator (*Alligator mississippiensis*), pileated woodpecker (*Dryocopus pileatus*), and yellow-throated vireo (*Vireo flavifrons*).

There are no permanently maintained wildlife openings or planted food plots on CSF. Wildlife openings and food plots will be established and maintained in accordance with the FFS State Forest Handbook.

Non-game species will be managed and protected through the restoration and maintenance of native ecosystems found on the forest. The current State Forest Handbook gives additional details for such topics 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 have been conducted by FFS and FWC staff intermittently, as needed. All surveys are done in cooperation with FWC.

b. Florida Black Bear

FFS will continue to cooperate with FWC to implement FWC's state-wide Florida Black Bear Management Plan, with an 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 listed plants and animals. 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.

Surveys conducted by university researchers and students and knowledgeable naturalists on CSF augment information provided by formal surveys conducted by FWC and other cooperating agencies. The FFS will seek assistance from citizen science, colleges, universities, and other agencies to gather data on plant and animal species.

6. Gopher Tortoise Recipient Site Feasibility Assessment

The FFS has assessed the feasibility of establishing a gopher tortoise recipient site on CSF. The vast majority of CSF is regularly too wet with soil classes unsupportive of a large gopher tortoise population. CSF staff have identified six (6) parcels totaling 167 acres (largest is 90 ac; smallest is 4 ac) in the central portion of the Thomas Creek Tract, either directly abutting or just east of the powerline easement. These sites have been typed by FNAI as either sandhill or mesic flatwoods, and all are in the process of being restored. Soils on these sites range from somewhat poorly drained to moderately well drained. A site-specific survey would need to be completed in order to determine the current stocking density of these sites. No formal Line Transect Distance Sampling survey has been conducted on CSF to date.

Operational budget, staffing levels, and technical capacity considerations preclude the FFS from installing a gopher tortoise recipient area on CSF. The FFS would require financial and technical assistance from FWC to establish a recipient site on CSF. Should that assistance be available, the FFS would be amenable to partnering and establishing 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 occur on CSF.

F. Mineral Resources

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

G. Unique Natural Features and Outstanding Native Landscapes

Thomas Creek itself, and the nearly intact bottomland hardwood forest and floodplain swamp through which the creek flows, are considered unique natural features. No Catch Swamp and the associated basin marsh are also unique natural features of CSF.

The Cary Tract contains particularly well-managed and representative mesic and wet flatwoods, cypress domes, and basin swamps. The Thomas Creek bottomland forest and floodplain swamp are also exceptional native landscapes found on CSF.

H. Research Projects / Specimen Collection

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

Research projects / specimen collections that have been initiated on the property include:

- University of North Florida (Nuszkowski). 2022. Research regarding an improved method of wildfire tracking.
- Duke University (Crowl). 2021. Investigation of genetics, taxonomy, and distribution of North American blueberries (*Vaccinium* section *Cyanococcus*).
- University of Florida, FL Museum of Natural History (Miller and Gott). 2018 – 2020. Conduct research on the biology and systematics of the Florida duskywings
- University of Florida, FL Museum of Natural History (Warren). 2015 – 2021. Collect voucher specimens of non-listed (state or federal) insects from the orders Lepidoptera, Coleoptera, Diptera, and Hymenoptera to fill data gaps and augment species-level records at the Florida State Collection of Arthropods (FSCA) to investigate taxonomy, biogeography, and systematics of insects. (*Lepidoptera:Hesperiidae:Erynnis*).
- Florida Fish and Wildlife Conservation Commission/FWRI (Farmer/Enge). 2015 – 2018. Determine the status, distribution, and reproductive success of the gopher frog (*Lithobates capito*) in Florida.
- Barbour and Barbour. 2014 – 2016. Collect voucher specimens of plants at Cary SF.

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 the Acquisition and Restoration Council (ARC), as appropriate.

V. Public Access and Recreation

The primary recreation objective is to provide the public with passive outdoor recreation activities that are dependent on the natural environment and to provide outdoor recreation opportunities to wounded veterans through Operation Outdoor Freedom (OOF). FFS will continue to promote and encourage public access and recreational use by the public while protecting resources and practicing multiple-use management.

Periodic evaluations will be conducted by FFS staff to monitor recreation impacts on resources. Modifications to recreational uses will be implemented should significant negative impacts be identified. New recreation opportunities and facilities, which are compatible with the primary goals and responsibilities of the FFS, will be considered only after FFS determines their compatibility with other forest uses and forest resources. Assessment of visitor impacts, outdoor recreation opportunities and facilities, and proposed changes will all be addressed in the Five-Year Outdoor Recreation Plan updates.

A. Existing Recreation Opportunities

CSF offers a variety of passive, resource-based recreation opportunities, including hiking, RV and primitive camping, wildlife viewing, horseback riding, environmental education and hunting. Recreation facilities and designated trails are located on the original Cary Tract, as well as the Thomas Creek Tract. Bicycling, hiking, and horseback riding are permitted on all forest roads and fire lines on the Cary, Monticello, Thomas Creek, and Norfolk Southern tracts unless posted as closed to public access. The forest is open during daylight hours for visitors to enjoy picnicking, hiking, bicycling, fishing, wildlife viewing, and horseback riding. See Exhibit D for a map of the facilities and improvements.

1. Public Access and Parking

CSF is bordered by several major and local roadways including US 301, Ford / Plummer Road, Thomas Creek / Acree Road, Motes Road, and Garden Street (Exhibit M). Old Plank Road is an important nearby roadway, and the paved Jacksonville-Baldwin Rail Trail runs through the southern portion of the Norfolk Southern Tract.

Access is available to recreation users through three designated entrances. CSF is open to public day-use, 1.5 hours before sunrise until 1.5 hours after sunset. All open forest roads permit hiking, bicycle, and equestrian use, except in the Private Easement area on the

Monticello Tract which is closed to all public use. Due to its long history as a state forest, the majority of the recreation facilities are located on the Cary Tract.

Cary Tract

The main day-use and camping recreation area for CSF is accessible from Pavilion Road. Designated vehicle access to this site is provided at US 301 and Pavilion Road. A large grassy parking area and a smaller overflow lime rock parking area are located on Pavilion Road. Hunting is prohibited in the Cary Campground recreation area.

Monticello Tract

Designated vehicle access is provided where Garden Street dead-ends into CSF at Monticello Road. Licensed vehicles, hikers, equestrians, and bicyclists are permitted on open roads. There is no public access permitted in the Private Easement located along the southwestern boundary of this Tract.

Thomas Creek Tract

Designated vehicle access is provided at US 301 and Jennifer Road. A large grassy parking area is located on Jennifer Road. Year-round walk-in access and vehicular access (during hunting season) is permitted at the Acree / Thomas Creek Road gate. Walk-in access only is permitted at the Cross County / Thomas Creek Road gate.

2. Recreation Areas

The S. Bryan Jennings Recreation Pavilion (approximately 1,200 square feet), recreation bathhouse / restrooms, 6 RV Full Hook Up campsites and 1 completed (2023) overflow RV Full Hook Up campsite, 1 Group campsite with 50-person capacity, two boardwalks, and a fire tower are all located within the Cary Campground recreation area on Pavilion and Fire Tower Roads.

Picnicking is available in the parking area under shade trees and at the pavilion. Potable water for all users is provided. Day use fees are payable by QR code or online through the FFS campground reservation system. All campsites on Cary are reservation only and are made via the campground reservation system. Brochures, forest information, general rules and a map are located at the trailhead kiosk.

The Whittmore Mill Recreation Area is located on the Thomas Creek Tract off Jennifer Road. This area offers parking, an information kiosk, and a nature trail.

3. Trails

Recreation trails are monitored for negative impacts through routine inspections and maintenance. Trails are maintained and are closed during prescribed burning activities, following intense storm events, or at other times when necessary. Significant ground disturbance caused by recreation use may require the closing or rerouting of trails.

The Pavilion Road parking area provides the trailhead for the Pavilion Road Trail Complex. The associated trails within this complex include the: 0.85-mile Wetland Pine Boardwalk Loop Trail and 1.25-mile Cypress Swamp Boardwalk Loop Trail (these comprise the Nature

Trail), 7.75-mile Red Root Equestrian Trail, and the 12.2-mile Fireline Multiple Use Trail. The Red Root trail is a designated FFS Trail Trotter program trail and the Nature Trail is a Trail Walker trail. The Whittmore Mill parking area provides trailhead access for the 1-mile Dahoma Historic Interpretive Nature Trail on the Thomas Creek Tract.

4. Camping

The campground along Pavilion Road contains 6 large, RV or tent designated campsites with electric and water hook ups. Campers have access to a bathhouse restroom facility with showers and hot water. Each campsite has a 20'x30' concrete pad, grills, a fire-pit, picnic tables, and benches. Reservations are made via the online campground reservation system. A large group site is also available in this area with a 50-person capacity. It is equipped with grills, large fire ring, and picnic tables. This group site also has access to the bathhouse and pavilion and must be reserved via the campground reservation system.

5. Hunting and Fishing

The Cary, Monticello, and Thomas Creek Tracts compose the Cary State Forest Wildlife Management Area (WMA). All hunting is prohibited in the Cary Campground recreation area on the Cary Tract and the private easement on the Monticello Tract. Regulated hunting is permitted within the WMA during designated hunting dates and with possession of appropriate quota permits and licenses. Hunting and fishing activities are regulated by FWC. FFS will evaluate areas along the boundary to identify possible safety issues where actions need to be taken to mitigate these concerns to protect adjacent properties and neighbors. Possible solutions include increased signage, road closures, and setbacks.

6. Environmental Education and Public Outreach

Current staffing allows for programs and tours to be conducted upon request. Programs and tours are conducted annually for the Boy Scouts of America, church groups, local schools, summer camps, University of Florida Master Naturalist classes, and other groups. Approximately 94 environmental education programs and / or newspaper articles were conducted between 2012 and 2022. Volunteers will be utilized in the future to assist with environmental education and public outreach programs.

B. Planned Recreation Opportunities

FFS will continue to assess plans for additional 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 specific plans will be incorporated into the Five-Year Outdoor Recreation Plan on file at CSF.

1. Public Access and Parking

Monticello Tract

Within this ten-year planning cycle, the potential for new parking areas will be evaluated and considered for use on the Monticello Tract. Current parking and forest access points will continue to be evaluated for updates and improvements. A potential observation tower and boardwalk overlooking the basin marsh with a parking area will be considered within the Basin Swamp Recreation Area Footprint.

Improvements to the Garden Street Entrance, including a parking area, trail system, pavilion, grills, and picnic tables may be explored if funding is secured within the Garden St Recreation Area Footprint.

Thomas Creek Tract

The potential for new parking areas will be evaluated and considered for use on the Thomas Creek Tract. Current parking and forest access points will continue to be evaluated for updates and improvements.

Norfolk Southern Tract

The possibility of opening the Norfolk Southern tract to vehicular access and installing new parking areas will be evaluated and considered. Current parking and forest access points will continue to be evaluated for updates and improvements. The current parking area located on the Chaffee Road connector may be expanded within this planning period to accommodate a trailhead and possible picnic area. Considerable upgrades to the Norfolk Southern Road system will be required before vehicular access can be allowed.

Cary Tract

At this time, there are no plans for additional access points to the Cary Tract. The potential for new parking areas will be evaluated and considered based on increased user needs and resource protection. Current parking and forest access points will continue to be evaluated for updates and improvements.

2. Facilities

Cary Tract

Expansion of the current restroom facilities or installation of another facility may be explored within the timeframe of this plan within the Restroom Facility Footprint. This will be based on visitor use and available funding and maintenance personnel. Installation of new facilities will be tied to expansion of the Cary Campground.

Monticello Tract

Within the timeframe of this plan, funding from outside sources may be available to install facilities at the Garden Street Entrance Recreation Area.

Additional facilities may include the construction of a boardwalk, viewing tower, and parking area which may be installed within the Basin Swamp Recreation Area Footprint. This area provides unique wildlife viewing opportunities for the public.

Thomas Creek Tract

The installation of a pavilion(s) may be considered on the Thomas Creek Tract within the Thomas Creek Recreation Area Improvement Footprint as visitor use increases and as funding is available.

3. Trails

Suitable locations are being explored on all tracts of Cary State Forest for additional hiking trails. The construction, maintenance, and improvements of nature and hiking trails will be

on-going. Trails will be designated and developed with user group input to the greatest extent possible.

The Cary Tract will be assessed during this planning period for potential additional hiking, equestrian, or bicycle trails. Trail surveys have been completed on the Monticello Tract. The potential for year-round, all-weather trail system development is best suited on the dryer portions of the Monticello and Thomas Creek Tracts.

4. Camping

Additional primitive camp zones may be considered on all tracts of Cary State Forest to meet growing camping demands. Monticello and Thomas Creek Tracts will be the primary areas for consideration. These camp zones would be affiliated with new or existing hiking trails, useable on a first come, first served basis, and will be only accessible by hike-in.

5. Day Use Areas

The Garden St Recreation Area near the Garden Street entrance and Monticello Road will be a focus for development during this planning period. Parking, a picnic pavilion, shade trees, a trailhead, and grills will be considered within the Garden St Recreation Area Footprint. The possibility for grant funding from adjacent housing community contractors may be used for the construction of this recreation area.

Potential recreation opportunities will be evaluated on the Norfolk Southern Tract. These may include hiking, bicycling, and/or horseback riding.

6. Recreation Vehicle (RV) Camping

The potential for expansion of the current Cary Campground will continue to be evaluated during this plan period. Depending upon use, funding, and personnel, additional full hook up sites, new roads, and restroom/shower facilities may be installed within the Cary Campground Expansion Footprint. Sites would be constructed in the same manner as the current sites at Cary.

7. Environmental Education

As the surrounding population continues to grow, environmental education opportunities will be supported by the FFS and local staff. Programs and/or projects with school groups, environmental organizations, private landowners, Boy/Girl Scouts, 4-H, local FFA, and similar entities will be encouraged. Jacksonville District staff will continue to deliver on-site and off-site environmental education programs as requested.

FFS currently provides visitors to CSF environmental education through interpretive displays in existing kiosks and on existing nature trails on the Cary and Thomas Creek Tracts. The addition of new kiosks and other interpretive displays will be evaluated and installed based on management determined needs.

8. Waterway Stabilization and Improvements

The improvement of current boardwalks and the installation of new boardwalks will be evaluated or installed during this plan period. The current boardwalks at Cary will need

replacement or refurbishment and the possibility of a new boardwalk at the Basin Swamp may be considered, depending on funding and personnel availability.

9. Wildlife Viewing / Scenic Overlooks

Suitable locations are being evaluated for wildlife viewing and scenic overlook platforms. These structures may be constructed along existing boardwalks and the possible basin swamp boardwalk or overlooking established food plots and other openings.

C. Hunter Access

The majority of CSF is open to regulated hunting. FWC manages hunting on CSF. Hunting season dates, limits, and methods are established annually by FWC, in cooperation with the FFS. Cary Wildlife Management Area regulations are updated annually and are identified in the current WMA online brochure provided by FWC at MyFWC.com. Non-hunting recreation users are encouraged to check the WMA regulations and season dates before visiting CSF.

VI. Forest Management Practices

A. Prescribed Fire

Forest management practices on CSF are important in the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians. Management practices on CSF 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 Jacksonville 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 graph detailing the recent history of prescribed burns and wildfires at CSF is available in Exhibit N.

FFS has one non-useable fire tower and three tractor-plow units located in Nassau County. An additional tractor-plow unit located at the Tisonia field station in Duval County provides support to the Nassau response area. Additional support is available from neighboring counties. Personnel and equipment stationed at CSF 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 CSF 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 CSF, 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 CSF

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 CSF are estimated to have occupied approximately 8,508 acres and to have burned at approximately 2 to 10-year (depending on ground cover type) intervals in the flatwoods, 1 to 2-year intervals in the sandhills, and from 2 to 100-year intervals in the dome swamps and floodplains. Current fire-dependent communities encompass 8,400 acres. Based on current conditions and management objectives, CSF will plan for 1,400 to 2,500 acres to be prescribed burned annually. 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.

1. Fire Management

The fire management plan serves as a working tool and an informational document for CSF. 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 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 CSF 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 for perpetuating existing wildlife populations in Florida. Forest operational 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 required by Section 590.125(3), F.S. needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

Aerial ignition may be considered for large burn units where this tactic can be cost effective for larger burn 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.

Based upon available species survey data, burn units within a prescription that have listed wildlife species shall explicitly state their presence and any restrictions or requirements relative to prescribed burning in proximity to these species or habitats. These may

include time of year, pre-burn preparation, fire-return intervals, and other burn parameters.

B. Wildfires Prevention 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 Jacksonville 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 these 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 CSF Fire Management Plan.

1. Suppression Strategies

If a wildfire occurs on CSF there are two 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 absolutely necessary.

Appropriate suppression action will be that which provides for the most reasonable probability of minimizing fire suppression cost and critical resource damage, consistent with probable fire behavior, total fire load, potential resource and environmental impacts, safety, and smoke management considerations. 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 Florida Certified Prescribed Burn Manager. If smoke threatens to cause a safety hazard, then direct immediate suppression action will be taken.

3. Firebreaks and Firelines

A system of permanent firelines have been developed and maintained around and within the boundaries of CSF to guard against fires escaping from and entering the forest. Such fire breaks 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

CSF 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 CSF. When possible, fire staff will avoid line construction in wetland ecotones throughout the forest.

5. Firewise Communities

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

6. Adjacent Neighbor Contacts

The staff at CSF 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 through 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 CSF:

- 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 CSF will be directed toward improving forest health, wildlife habitat, 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 any off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with the appropriate tree species. Herbicide applications may be necessary to control woody competition and to re-establish desired native 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.

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 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. Ten percent of CSF's forested acreage will be re-inventoried annually 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 commercially important pine species such as slash, longleaf, loblolly, and occasional pond pine, as well as other significant species such as cypress, cedar, and mixed hardwoods.

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 assist in maintaining pastures and controlling non-native plants, support the maintenance of fences and gates, and provide a source of income.

Currently there are no cattle leases on CSF.

D. **Invasive Species Control**

FFS employees continually monitor the forest for invasive species while conducting management activities. FFS will locate, identify, and apply control measures with the intent to eradicate or control invasive species. Table 6 lists the general treatment strategy, acres impacted, and population stability trend for invasive plant species occurring on CSF. Also see Exhibit O.

Ongoing maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan which is developed to locate, identify, and control invasive plant species. Occurrences of invasive species are recorded in the CSF 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 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 invasive animals. Feral hogs (*Sus scrofa*) are present on CSF but are not believed to occur in any substantial numbers at this time. FWC has issued a feral hog control permit to FFS for WMA state forests and FFS will allow for feral hog removal on CSF through trapping and hunting as necessary.

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

Table 6. Invasive Plant Species Occurring on CSF

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Status
Brazilian vervain	<i>Verbena brasiliensis</i>	Spot treatment with herbicide	No occurrences known at this time	Stable
Chinese tallow	<i>Triadica sebifera</i>	Single and broadcast	Sporadic occurrences, heavier on	Increasing

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Status
			Norfolk Southern tract	
Cogon Grass	<i>Imperata cylindrica</i>	Spot treatment with herbicide, timed with burning	No occurrences known on CSF, however significant encroachment on neighboring land and roadways	Potential for increase
Japanese climbing fern	<i>Lygodium japonicum</i>	Spot treatment with herbicide	Sporadic occurrences	Stable/increasing
Mimosa	<i>Albizia julibrissin</i>	Single and broadcast	Sporadic occurrences	Stable
Showy rattlebox	<i>Crotalaria spectabilis</i>	Spot treatment with herbicide	Sporadic with varying degrees of intensity	Increasing
Silky sesban	<i>Sesbania sericea</i>	Spot treatment with herbicide	Sporadic with varying degrees of intensity	Increasing
Sword fern	<i>Nephrolepis exaltata</i>	Spot treatment with herbicide	No occurrences known at this time	Stable
Torpedograss	<i>Panicum repens</i>	Roadside broadcast with herbicide	Forest-wide, mostly along roads and disturbed areas	Increasing

E. Insects, Disease, and Forest Health

Currently there are no significant insect or disease problems on CSF. State forest staff monitors for incidental outbreaks of pine bark beetles (*Ips* spp.) throughout the forest. These outbreaks generally run their course without involving more than several acres. Aerial surveys are conducted every March / April through the growing season for southern pine beetle (*Dendroctonus frontalis*) outbreaks. In the event of a forest pest or disease outbreak, CSF 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 agency in Nassau County will be notified of the approval of this plan, documenting this designation.

As a result, prior to conducting any arthropod control activities on CSF, 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 CSF. This public land control plan must be in compliance 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. Ecosystem 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 CSF. Current and historic natural community types can be found in Exhibits P and Q, and Table 7. This inventory included managed and altered community types which are habitats that have been impacted by humans and do not fit into FNAI's Natural Community Classification. See Tables 8 and 9.

Table 7. Natural Community Types

Community Type	Historic Acres*	Current Acres*
Basin marsh	0	83
Basin swamp	2,359	2,310
Baygall	330	332
Bottomland forest	364	355
Depression marsh	28	27
Dome swamp	669	692
Floodplain swamp	575	575
Mesic flatwoods	3,470	1,788
Sandhill	1,049	670
Wet flatwoods	3,987	2,572
Wet prairie	452	0
Managed and other altered landcover types**	0	3,883
TOTAL	13,283	13,287

* Rounding errors exist and mapping did not occur on severed 90.1-acre parcel managed by SJRWMD.

** See Tables 8 and 9

Table 8. Managed Community Types

Community Type*	Current Acres**
Pine plantation	3,636

* Protocol as described in Appendix 2 of FNAI's "Guide to the Natural Communities of Florida", 2010 Edition.

** Rounding errors exist.

Table 9. Altered Landcover Types

Landcover Type*	Current Acres**
Artificial pond	4
Borrow pit	9
Clearing	12
Developed	32
Road	190

* Protocol as described in Appendix 2 of FNAI's "Guide to the Natural Communities of Florida", 2010 Edition.

** 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, representative species present, and hydrology. 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 of pine plantations, mowing, or chopping in areas of heavy fuel buildup, application of both dormant and growing season fires, reforestation, the use of site preparation methods, both mechanically 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 10.

Table 10. Prescribed Fire Interval Guide on CSF

Habitat Type	Historic Fire Return Intervals*	CSF Fire Frequency Goal (Local)	Comments
Basin marsh	5-150 years	5-20 years	Although the lowest portions of basin marshes rarely burn through, the edges of these swamps often have graminoid-dominated ecotones that burn with the adjacent uplands.
Basin swamp	5-150 years	5-20 years	Although the lowest portions of basin swamps rarely burn through, the edges of these swamps often have graminoid-dominated ecotones that burn with the adjacent uplands.
Baygall	N/A	N/A	Baygall burn infrequently, perhaps only a few times each century in the deepest baygalls.

Habitat Type	Historic Fire Return Intervals*	CSF Fire Frequency Goal (Local)	Comments
Bottomland forest	N/A	N/A	Fires are rare in bottomland forest, occurring only during times of extreme drought.
Depression marsh	1-8	1-8	The natural fire return interval for depression marshes is every 1-8 years, primarily during the growing season. Prescribed burns will be implemented at the same time as surrounding uplands.
Dome swamp	3-100 years	3-10 years	Fire frequency is greatest at the periphery of a dome swamp, where a normal fire cycle might be as short as 3 to 5 years. In contrast, fires may occur as infrequently as every 100 years in the wetter interior portions.
Floodplain swamp	N/A		Floodplain swamps rarely burn and only under extreme drought conditions.
Mesic flatwoods	2-4 years	2-4 years	Mesic flatwoods require repeated applications of growing season fires on a 2- to 4-year cycle.
Sandhill	1-3 years	1-3 years	Sandhill depends on growing season fires to maintain open structure. Every 1-3 years fire of variable intensity will increase species diversity.
Wet flatwoods	2-5 years	2-5 years	Wet flatwoods require repeated applications of growing season fires on a 2- to 5-year cycle.

* As determined by FNAI

The following community descriptions, existing condition descriptions, and management recommendations are taken from the 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 CSF.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural and managed communities at CSF 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 marsh
Description:

Basin marshes are depressional, non-forested wetlands 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. This type of marsh usually develops in large solution depressions that were formerly shallow lakes. The soils are generally acidic, nutrient-poor peats overlying an impervious soil layer. This community type is dominated by herbs or occasionally shrubs that can withstand inundation for most or all of the year.

The desired future condition of basin marshes at CSF should be large, irregularly shaped, depressions, or herbaceous dominated areas imbedded in basin swamps, that are dominated by hydrophytic plants that can withstand an extended hydroperiod such as sawgrass (*Cladium jamaicense*), maidencane (*Panicum hemitomon*), and pickerelweed (*Pontederia cordata*). They should have dense herbaceous species cover, variable density of shrubs, and no to widely scattered trees.

Trees are sparse, usually only occupying higher areas in the marsh or around the edge. These can include typical swamp species such as pond cypress (*Taxodium ascendens*) and swamp tupelo (*Nyssa sylvatica* var. *biflora*) with occasional slash pine, loblolly bay (*Gordonia lasianthus*), swamp bay (*Persea palustris*), and sweetbay (*Magnolia virginiana*). Currently there are scattered cypress and swamp tupelo with small patches of bay trees imbedded in the basin marsh and in most areas, these are trees that were left standing after a timber harvest. Subcanopy trees should be widely scattered or in patches and shrub species composition should be primarily buttonbush (*Cephalanthus occidentalis*), fetterbush (*Lyonia lucida*), and Carolina willow (*Salix caroliniana*) with occasionally myrtle dahoon (*Ilex cassine* var. *myrtifolia*), and highbush blueberry (*Vaccinium corymbosum*). In most cases, shrubs should not form a dense layer but rather be scattered throughout the marsh, although there may be areas with heavier concentrations. Herbaceous species typically occur in zones determined by water depth. The deepest areas will have American white waterlily (*Nymphaea odorata*), watershield (*Brasenia schreberi*), and bladderworts (*Utricularia* sp.) followed by bulltongue arrowhead (*Sagittaria lancifolia*), and pickerelweed. Toward the outer margin and shallow areas, maidencane, yellow-eyed grasses (*Xyris* spp.), bladderworts, sphagnum moss (*Sphagnum* spp.), Virginia chain fern (*Woodwardia virginica*), sawgrass, Carolina redroot (*Lachnanthes caroliniana*), and southern umbrellasedge (*Fuirena scirpoidea*). Currently there are not obvious vegetation zones within the three large basin marshes. Many of the species present appear to be responding to the disturbance caused by logging portions of basin swamps. There are many logs remaining on site and there are deep ruts and other forms of soil disturbance as a result of the timber operations. In turn, many species which might be considered weedy titi (*Cyrilla racemiflora*), broadleaf cattail (*Typha latifolia*), dogfennel (*Eupatorium capillifolium*) are dominant and likely responding to the present condition of these basin marshes.

Frequent fires (e.g., 1 to 10 years) will maintain the herbaceous dominated basin marshes that currently exist within the basin swamps of CSF. The basin marsh will succeed into basin swamp with fire frequencies of a longer duration (>20 years). The ecotones of basin swamps and basin marshes that are adjacent to mesic and wet flatwoods should be dominated by herbaceous and graminoid species. The three large basin marshes delineated on the current natural communities of CSF appear to have been basin swamps converted to basin marshes because of logging. For this reason, it may be more desirable to allow the forest to regenerate before allowing fire to carry into these areas. However, during high water periods the basin marsh ecotones should be allowed to burn as well as areas of basin swamp that are capable of carrying fire. These areas of basin swamp traditionally may have naturally switched between basin marsh and successional basin swamp forest depending on the frequency of fire.

Basin marsh historically, and presently to some extent, existed as inclusions within the larger basin swamps. Basin marsh inclusions on historic aerial photograph have a smooth signature within the slightly darker shaded areas and “rougher” textured (forested) basin swamps.

Current Conditions:

Basin marsh delineated in the current natural community map of CSF was the result of intense peat fires. Basin marsh occurs within a matrix of basin swamp. Generally, the basin marsh canopies at CSF consist of widely scattered pond cypress, swamp tupelo, and slash pine. The three large basin marshes contain many stumps indicating they were likely basin swamps within the last 20 years. Shrub cover is sparse or patchy, except for the shrub dominated ecotones, in most locations and consists primarily of fetterbush, southern bayberry (*Morella cerifera*), and myrtle dahoon, and to a lesser extent young swamp bay, loblolly bay, and sweetbay, and occasionally highbush blueberry, titi, gallberry (*Ilex glabra*), and large gallberry (*Ilex coriacea*). Vines are uncommon. Sawgrass, Carolina redroot (*Lachnanthes caroliana*), American white waterlily, maidencane, broadleaf cattail, dogfennel, Virginia chain fern, and yellow-eyed grass (*Xyris* sp.) are abundant components of the ground layer.

Fire Regimes:

Fire intervals in basin marsh are highly variable, with natural fires more possible at the end of the dry season. Dense sawgrass and maidencane marshes will burn even when there is standing water. Frequency of fire varies depending on the hydrology of the marsh and its exposure to fire from surrounding areas.

Management Needs:

Restoring historic hydrological regimes and applying fire to adjacent uplands (where appropriate) is a recommended focus for forest management. Occasional fires within the basin marshes are necessary to remove encroaching woody vegetation and reduce the buildup of organic soils. However, FFS staff will only plan and conduct prescribed burns in this community on the periphery, as smoke management concerns will preclude allowing fire across the community under dry conditions.

Management should focus on restoring historic hydrological regimes and applying fire to adjacent uplands; fires should be allowed to burn into the basin marshes and extinguish naturally.

B. 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.

The desired future condition of basin swamps at CSF should be large, irregularly shaped, forested depressions that are dominated by hydrophytic trees and shrubs that can withstand an extended hydroperiod such as pond cypress, swamp tupelo, slash pine, and fetterbush. They should have variable shrub layers and sparse to dense herbaceous species cover. A mature canopy dominated

by pond cypress, swamp tupelo, slash pine, and to a lesser extent, loblolly bay, swamp bay, and sweetbay. In most cases, shrubs should not form a dense layer below the canopy or in the ecotones of the swamps but rather be scattered throughout the swamp, although there may be some areas with heavier concentrations. Subcanopy tree and shrub species composition should be similar to the species currently inhabiting the swamps, primarily myrtle dahoon, fetterbush, and highbush blueberry. In the densely forested portions of basin swamps, herbs should be sparse and consist mostly of netted chain fern (*Woodwardia areolata*), Virginia chain fern (*W. virginica*), cinnamon fern (*Osmunda cinnamomea*), and lizard's tail (*Saururus cernuus*). However, many of the basin swamps on CSF appear to be relatively shallow depressions and in the basin swamps that burn frequently (e.g., 3 to 10 years), herbaceous species should more closely resemble the desired future conditions of wet flatwoods. The ecotones of basin swamps that are adjacent to mesic and wet flatwoods should be dominated by herbaceous and graminoid species.

Judging from the historic aerial photo, the large slash pines in the canopy, and the frequency of pine stumps, many of the basin swamps on CSF should have more open canopies and subcanopies with a higher density of shrubs or herbaceous species. This vegetation structure and the resulting species composition will be obtained and maintained by allowing more frequent fire into these systems.

In the 1953 aerial photograph, the much darker, rougher textured basin swamps are easily distinguished from the much lighter smoother textured flatwoods they tend to be imbedded in. The typical graminoid ecotones appear as light gray, smooth (relatively treeless) areas with intermixed slightly darker shaded areas (standing water) adjacent to the much darker and "rougher" textured (forested) basin swamps. In some cases, the graminoid areas grade into wet flatwoods with apparently a very sparse overstory. The graminoid / herbaceous ecotones of basin swamps should be dominated by wiregrass (*Aristida stricta*) and include species of beaksedges (*Rhynchospora*), yellow-eyed grasses, Carolina redroot, tenangle pipewort (*Eriocaulon decangulare*), netted and Virginia chain fern, peelbark St. John's wort (*Hypericum fasciculatum*), and hooded pitcher plants (*Sarracenia minor*).

Current Conditions:

Basin swamps occur throughout and are the dominant wetland community type, by area, at CSF. They are highly variable in size, shape, and species composition. Previous anthropogenic disturbances, such as logging and ditching, are evident in most of the basin swamps and likely have changed the vegetation species composition and structure from historic condition. Young, planted slash pines are also common in the basin swamp ecotones. During high water periods and heavy rains, the basin swamps at Cary function much like cypress strands in conveying water across the relatively flat landscape. Where forest roads cross the basin swamps, the sheet flow is constricted to narrow culverts placed under the limerock roadways.

Generally, the basin swamp canopies at CSF are dominated by stunted pond cypress, red maple (*Acer rubrum*), coastalplain willow (*Salix caroliniana*), and swamp tupelo overtopped by slash pine. Many of the existing slash pine trees and stumps in the basin swamps have cat-faces (i.e., scars dating back to the early 1900s incurred during turpentine operations); this suggests that slash pine was an important component of the relatively shallow basin swamps historically found

at CSF. The subcanopy is comprised primarily of myrtle dahoon, which can be very abundant just below the cypress and swamp tupelo. Shrub cover is dense (particularly in the ecotones) in most locations and consists primarily of fetterbush and myrtle dahoon, and to a lesser extent young swamp bay, loblolly bay, and sweetbay, and occasionally highbush blueberry, titi, gallberry, and large gallberry. Little herb cover exists in the densely forested portions (basal area of all trees = 90-130 ft²/acre) of the basin swamps, but herbs like Carolina redroot, cinnamon fern, netted chain fern, Virginia chain fern, and sphagnum (*Sphagnum* sp.) can be abundant in areas where the canopy is less dense and along the fire-maintained ecotones. The abundance of epiphytes and vines is variable. The epiphytes consist of primarily Bartram's airplant (*Tillandsia bartramii*), and Spanish moss (*Tillandsia usneoides*) and the dominant vines are earleaf greenbrier (*Smilax auriculata*), laurel greenbrier (*Smilax laurifolia*), and muscadine (*Vitis rotundifolia*).

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 should be required for this community type. Where it can be done safely, prescribed fires should be allowed to burn into basin swamp edges to restrict encroaching shrubs. Infrequent low intensity ground fires within basin swamps are necessary to maintain the cypress component. Swamp tupelo and other hardwoods dominate areas that burn less often. Similar to basin marsh, FFS staff will only plan and conduct prescribed burns in this community on the periphery, as smoke management concerns will preclude allowing fire across the community under dry conditions.

If hydrology has been altered (i.e., ditches/canals), normal hydroperiod should be restored, if possible, since shortened hydroperiods can also allow devastating fire to enter, potentially altering the community. Heavy equipment that causes rutting that will alter the micro-hydrology of the ecotone; use of heavy equipment, if necessary, should be limited to dry seasons. This community is thought to be very stable as long as hydrological conditions and water quality are maintained.

C. Baygall

Description:

Baygall is an evergreen, forested wetland typically at the base of sandy slopes where water seepage maintains a saturated peat substrate. It may form an ecotone between uplands and swamps, or it may develop as a larger bay swamp in isolated basins or broad areas of seepage.

These forests are dominated by a tall canopy of abundant loblolly bay, sweetbay, and slash pine, with swamp bay and fetterbush often forming a dense thicket in the understory.

Baygall occurs throughout CSF in lower areas within mesic and wet flatwoods communities, adjacent to floodplain swamp and bottomland forest surrounding uplands or where high-water tables maintain a saturated soil. Soils are generally composed of peat and are acidic.

Characteristic canopy trees of baygalls on CSF should include loblolly bay, sweetbay, swamp bay, pond pine (*Pinus serotina*), slash pine, red maple, and swamp tupelo. Common shrubs and small trees should include fetterbush, wax myrtle (*Myrica cerifera*), dahoon (*Ilex cassine*), large gallberry, highbush blueberry, coastal doghobble (*Leucothoe axillaris*), and sweet pinxter azalea (*Rhododendron canescens*). Baygall typically have little to no herbaceous cover as a result of low light levels under the dense overstory. However, herbs such as Virginia chain fern, beaksedges (*Rhynchospora* spp.), sedges (*Carex* spp.), sphagnum moss, Carolina redroot, and cinnamon fern may be present. Baygalls associated with creeks may have lizard's tail and goldenclub (*Orontium aquaticum*). Epiphytes should be infrequent to absent. Vines should be found occasionally and may include laurel greenbrier and muscadine.

On the 1953 geo-rectified photographs, baygall appeared as a grainy, nearly black signature that is darker than any other community found on CSF. Some of the darker areas on the photograph appeared to have this same signature but were characterized as a different community, mostly wet flatwoods with baygall inclusions or mesic flatwoods that may have been burned just prior to the photo being taken, based on information obtained during ground-truthing.

Current Conditions:

Characteristic canopy trees of what was historically baygall on CSF include loblolly bay, sweetbay, swamp bay, pond pine, and slash pine. Red maple, and swamp tupelo are also usually present. Common shrubs and small trees include fetterbush, wax myrtle, dahoon, large gallberry, highbush blueberry, coastal doghobble, swamp doghobble (*Leucothoe racemosa*), poison sumac (*Toxicodendron vernix*), and sweet pinxter azalea. Herbs are scarce and include Virginia chain fern (*Woowardia virginica*), beaksedges, sphagnum moss, and cinnamon fern. Vines are occasional and include laurel greenbrier and muscadine. The latter often forms thickets around the edges of baygall and where the canopy trees are sparse.

Fire Regimes:

Baygall should burn infrequently, perhaps only a few times each century in the deepest baygalls. Although the saturated soils and humid conditions within baygalls typically inhibit fire, droughts may create conditions that allow them to burn catastrophically. These fires not only destroy the canopy, but also may ignite the deep peat layers that can smolder for weeks, or even months.

Management Needs:

If it can be done safely, prescribed fires in adjacent uplands should be allowed to burn into baygall edges to maintain grassy ecotones and to kill bay shrubs encroaching into the uplands. Plowed firebreaks and ditches should be restored, and hydrology should be returned to its natural state where possible.

D. 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 (*Liquidambar styraciflua*), bald cypress (*Taxodium distichum*), 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, wax myrtle, fetterbush, and highbush blueberry, 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, woodoats (*Chasmanthium laxum*), and lizard's tail. Epiphytes should be infrequent to occasional and include Spanish moss, resurrection fern (*Pleopeltis polypodioides*), and ball moss (*Tillandsia recurvata*). Vines should be infrequent to common and include muscadine and poison ivy (*Toxicodendron radicans*).

At CSF, bottomland forest occurs along portions of Thomas Creek (name from 1994 USGS 7.5-minute topographic map) and an unnamed creek bottom in the southern portion of the forest. Floodplain swamp is often included within or adjacent to the bottomland forest community along Thomas Creek. The current condition varies little from the desired condition. There is evidence of past timbering within the community. Generally, the habitat is in the later stages of succession and species composition is typical of bottomland forests in northeast Florida.

On the 1953 geo-rectified photographs, bottomland forest has a dark, rough grained signature. Delineation was aided by ground-truthing in the field.

Current Conditions:

Bottomland forests currently found on CSF show evidence of logging and changes to the hydrology, particularly near road crossings. An emergent canopy of usually slash pine and loblolly pine and infrequently pond pine reaching >100 feet exist in some areas, while other areas have a canopy of live oak, swamp laurel oak, water oak (*Quercus nigra*), sweetbay, swamp tupelo, sweetgum, pond cypress, and red maple. The shrub layer is dominated by smaller canopy species, titi, wax myrtle, loblolly bay, fetterbush, coastal doghobble, southern bayberry, fetterbush, bluestem palmetto (*Sabal minor*), devil's walkingstick (*Aralia spinosa*), and highbush blueberry. Herbs are generally sparse due to the closed canopy and dense shrub layer. Herbs present include woods grass, woodoats, bracken fern, Virginia chain fern, partridgeberry (*Mitchella repens*), switchcane (*Arundinaria gigantea*), and lizard's tail. Epiphytes are infrequent to occasional and include Bartram's air-plant (*Tillandsia bartramii*), Spanish moss, and resurrection fern. Vines are infrequent to common and include muscadine, cat greenbrier (*Smilax glauca*), trumpet creeper (*Campsis radicans*), and poison ivy.

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 extinguish themselves at 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 as they are highly detrimental to bottomland forest.

E. Depression Marsh**Description:**

Depression marshes are generally circular, shallow, herb-dominated wetlands found in slumps in sand substrate. Depression marshes occur most often within mesic or wet flatwoods. Frequently there are concentric zones of vegetation that respond to the hydroperiod and edaphic conditions within each zone. A common series of vegetation zones in depression marshes is blue maidencane (*Amphicarpum muhlenbergianum*) closest to and grading into the adjacent flatwoods, then peelbark St. John's wort dominates the shallow outer zone followed by an often-extensive area of maidencane, and in the deeper center of depressions bulltongue arrowhead and pickerelweed often are dominant.

Depression marshes on CSF should be dominated by herbaceous species, particularly maidencane and blue maidencane but may also include sawgrass, tenangle pipewort, rough hedgehyssop (*Gratiola hispida*), Carolina redroot, meadowbeauty (*Rhexia* spp.), beaksedges, sugarcane plumegrass (*Saccharum giganteum*), yellow hatpins (*Syngonanthus flavidulus*), Virginia chain fern, and yellow-eyed grasses. Species of St. John's wort should be prevalent, and typically most other shrubs should occur infrequently, such as fetterbush, myrtle dahoon, and wax myrtle. Trees should be absent or infrequent. However, there is often widely scattered swamp tupelo present. Epiphytes and vines are usually absent.

Current Conditions:

Currently, many of the depression marshes on CSF are encroached by woody species due to lack of frequent fire. The species found encroaching the depression marshes include red maple, titi, loblolly bay, swamp tupelo, myrtle dahoon, common persimmon (*Diospyros virginiana*), swamp bay, pond cypress, and slash pine. Slash pine has been planted through the majority of the depression marshes and there is evidence of past ditching and bedding. The herbaceous species component contains many of the species mentioned in the desired future conditions section, but also include typically more weedy species (i.e., species indicative of past disturbance) such as broomsedge bluestem (*Andropogon virginicus*) and soft rush (*Juncus effusus* subsp. *solutus*). Epiphytes and vines are generally absent. In some instances, wetlands currently named depression marshes were historically dome swamps and were converted due to past logging events.

Fire Regimes:

Depression marshes require frequent, light intensity fires to maintain a high herbaceous species component and reduce woody encroachment. The natural fire return interval for depression marshes is every 1 to 8 years, primarily during the growing season (April-June) when water levels are low and fuels in surrounding uplands are dry. Prescribed burns should be implemented more often (1 to 3 years) for depression marshes encroached by woody species to reduce the woody species abundance.

Management Needs:

Marshes should generally be allowed to burn with the surrounding communities. Ideally, fire should be prescribed at a time when water is low, but not absent, in the marshes to provide the highest quality burn while mitigating smoke management concerns. Marshes with substantial shrub cover (either within the marsh or surrounding edges) should be targeted for repeated lightning season fires on a short return interval.

F. Dome Swamp**Description:**

Dome swamps are isolated, shallow, forested wetland basins imbedded typically in a pyrogenic matrix community such as pine flatwoods. Dome swamps have domed profiles resulting from smaller trees growing around the edges and larger trees growing in the interior. Dome swamps have peat soils, which are thickest toward the center of the dome and are generally underlain with acidic soils and then limestone. Like basin swamps, dome swamps often have fire-maintained herbaceous ecotones that are species-diverse and important for rare plants and animals. Dome swamps are distinguished from basin swamps principally by their more circular shape, smaller size, and higher historical fire frequency due to landscape position.

The desired future condition of dome swamps at CSF should be small, isolated, forested wetland basins. Like basin swamps, dome swamps should have fire-maintained herbaceous ecotones that are species-diverse. They should have mature canopies dominated by pond cypress or swamp tupelo with sparse subcanopy and shrub layers. Typical dominant shrubs include myrtle dahoon, gallberry, fetterbush, wax myrtle, and highbush blueberry. The herbaceous layer should be sparse to dense and will become denser with greater frequency of fire and the resulting mortality of shrub and woody plant species. Slash pine can be scattered throughout the dome but typically should not be the most dominant species.

The herbaceous ecotones should be dominated by wiregrass and also include blue maidencane, beaksedges, yellow-eyed grasses, Carolina redroot, netted chain fern, Virginia chain fern, tenangle pipewort, flattened pipewort (*Eriocaulon compressum*), fox club moss (*Lycopodiella alopecuroides*), sphagnum moss (*Sphagnum* sp.), peelbark St. John's wort, and hooded pitcher plant (*Sarracenia minor*).

Current Conditions:

Dome swamps of CSF typically have canopies dominated by pond cypress and / or swamp tupelo with scattered emergent slash pine. The density of swamp tupelo appears to be related to the dome's fire history. Domes with little to no swamp tupelo have burned more regularly or had higher intensity fires in the past than domes dominated by swamp tupelo. Subcanopy and shrub

species consists of myrtle dahoon, loblolly bay, sweetbay, swamp bay, fetterbush, gallberry, highbush blueberry, and wax myrtle. The density of the herbaceous layer in the dome swamps of CSF is highly variable and likely a result of fire frequency and intensity. Some of the more common constituents of the herbaceous layer include beaksedges, longleaf threeawn (*Aristida palustris*), sedge (*Carex* sp.), Walter's sedge (*Carex striata*), flatsedge (*Cyperus* sp.), cockspur (*Echinochloa* sp.), cinnamon fern, maidencane, crowngrass (*Paspalum* sp.), tenangle pipewort, yellow-eyed grasses, fox club moss, and sphagnum moss. The domes with an intact fire maintained outer fringe also frequently have blue maidencane, hooded pitcher plant, dwarf sundew (*Drosera brevifolia*), and peelbark St. John's wort.

Many dome swamps at CSF have an unnatural vegetation structure caused by the combination of logging, fire exclusion, and planting of slash pines. Furthermore, the hydrology of many domes may be compromised. Typically, fire breaks ring the outer edge and are connected to a maze of fire breaks that traverse the surrounding flatwoods. Structurally, the fire breaks are ditches 6 to 15 inches deep and act as conduits during wetter periods. This may increase the likelihood of colonization of the dome swamps by predatory fishes, to the detriment of amphibian species that depend on fishless habitats for successful reproduction. A large proportion of these ditches are evident on the 1953 photo.

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 as a result of standing water or soil saturation.

Management Needs:

At CSF, the herbaceous ecotones surrounding dome swamps have largely been disturbed by past silvicultural practices, fire breaks, and a lack of fire. Restoration of these ecotones will entail the application of frequent prescribed fire, the rehabilitation of fire breaks when appropriate, closure of drainage channels, and the thinning of dense stands of planted slash pine where they encroach on the swamp ecotones. Initially, burning around dome swamps during years of normal precipitation (as opposed to drought years) will reduce heavy fuel loads that can facilitate catastrophic fires.

G. 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. Higher ridges/levees, often found along the riverbank, may be included within the swamp, although these can harbor species that are more typical of drier communities. Floodplain swamp is common along Thomas Creek (name from 1994 USGS 7.5-minute topographic map).

Desired future condition for floodplain swamps is a semi-closed to closed canopy dominated by pond cypress and / or bald cypress. Swamp tupelo, water tupelo (*Nyssa aquatica*), swamp laurel

oak, sweetgum, swamp bay, red maple, myrtle dahoon, Carolina ash (*Fraxinus caroliniana*), southern magnolia (*Magnolia grandiflora*), tulip poplar (*Liriodendron tulipifera*), and pond pine form a semi-closed subcanopy and may also be found in the canopy. Swamp laurel oak, southern magnolia, and pond pine are found on the higher levees within the swamp, usually along the banks. The understory is comprised mostly of shrubs with herbs sparse in most areas but frequent to abundant in light gaps. Understory shrubs include dwarf palmetto (*Sabal minor*), false indigobush (*Amorpha fruticosa*), titi, wild olive (*Osmanthus americanus*), azalea (*Rhododendron* spp.), coastal sweet pepperbush (*Clethra alnifolia*), bayberry (*Myrica* spp.), buttonbush, hawthorn (*Crataegus* spp.), and highbush blueberry. Herbs include wood oats (*Chasmanthium* spp.), partridgeberry, sedge (*Carex* spp.), green arrow arum (*Peltandra virginica*), tall nutgrass (*Scleria triglomerata*), switchcane, lobelia (*Lobelia* sp.), swamp leather flower (*Clematis crispa*), witchgrass (*Dichanthelium* spp.), panic grass (*Panicum* spp.), and cinnamon fern. Epiphytes are infrequent to occasional and consist of Spanish moss. Vines are found frequently and include laurel greenbrier, Carolina jessamine (*Gelsemium sempervirens*), and climbing hydrangea (*Decumaria barbara*).

Current Conditions:

The floodplain swamps currently found on CSF have been affected by past logging activities and in most areas, there are few large old trees. The canopy is semi-open to closed and consists of pond cypress, slash pine, sweetbay, sweetgum, swamp tupelo, and red maple. The subcanopy is typically closed and made up of swamp laurel oak, water oak, swamp bay, red maple, American hornbeam (*Carpinus caroliniana*), dahoon, Carolina ash and southern magnolia. The understory is typically shrub dominated, with herbs abundant in light gap areas. Shrubs include titi, large gallberry, fetterbush, dwarf palmetto, needle palm (*Rhapidophyllum histrix*), and buttonbush. Herbs include wood oats, partridgeberry, green arrow arum, tall nutgrass, switchcane, witchgrass, panic grass, cinnamon fern, lizard's tail, and Virginia chain fern. Epiphytes are infrequent and consist of Spanish moss. Vines are occasional and consist of laurel greenbrier, and Carolina jessamine.

Fire Regimes:

Floodplain swamps are usually too wet to support fires. However, fires in surrounding uplands that creep into the swamp edges are important to reduce pine and bay species invasion. In CSF, the large floodplain swamps associated with Thomas Creek rarely or never burn.

Management Needs:

Maintain natural hydrology and allow fires from surrounding uplands to burn into the swamp edges. Natural hydrology is crucial for maintaining species diversity and water quality. Hydrologic alterations associated with roads, berms, and ditches should be minimized as much as possible. Allowing fires from surrounding uplands to burn into the swamps will enhance diversity in ecotones and decrease bay and pine encroachment.

H. Mesic flatwoods

Description:

Mesic flatwoods are forests consisting of southern pine species, frequently including 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 but a dense ground cover of herbs

and shrubs. Mesic flatwoods are noted for their herbaceous diversity, which includes many rare species. Historically, the open community structure of mesic flatwoods was maintained by frequent, low intensity, growing season fires. Soils are mainly in the spodosol family, bearing a spodic horizon (i.e., a clay hardpan) that develops under poorly drained conditions, and are characterized by low levels of nutrients and organic matter and a low pH. Herbaceous plants and short shrubs help to maintain the structure of the community by fueling growing-season fires; common species include wiregrass, bottlebrush threeawn (*Aristida spiciformis*), Curtiss' dropseed (*Sporobolus curtissii*), lopsided Indiangrass (*Sorghastrum secundum*), witchgrasses (*Dichanthelium* spp.), beaksedges, dwarf huckleberry (*Gaylussacia dumosa*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), gallberry, gopher apple (*Licania michauxii*), coastalplain staggerbush (*Lyonia fruticosa*), dwarf live oak (*Quercus minima*), saw palmetto, highbush blueberry, and shiny blueberry (*Vaccinium myrsinites*).

CSF is predominantly pine flatwoods habitat with imbedded wetlands. Distinction between mesic and wet flatwoods is exceedingly difficult on aerial photographs, and the two community types naturally intergrade. In the analysis of 1953 historic photographs, most flatwoods were designated as mesic. Those situated closer to wetlands and with a slightly darker signature were designated as wet.

Most mesic flatwoods areas in CSF have inclusions of wetter habitats such as wet flatwoods and dome swamps. The ecotone between mesic flatwoods and wetland communities is an important area for many rare species and should be maintained with frequent fire (approximately 2 to 5 years).

Current Conditions:

Twenty-nine mesic flatwoods polygons were identified at CSF, although their delineation is inexact because of the natural gradation between mesic and wet flatwoods.

There are several good examples of mesic flatwoods at CSF, although many of the flatwoods within the newly acquired parcels suffer from years of fire exclusion and have dense stands of planted pines. The groundcover has suffered as a result of these conditions, as well as from past ditching and bedding. Longleaf (*Pinus palustris*) and slash pine are the dominant overstory species within the mixed-aged stands of mesic flatwoods while loblolly (*Pinus taeda*) and slash pine are typically the dominant trees in the planted stands. Fire-suppressed stands have a subcanopy of loblolly bay, red maple, sweetgum, and often densely planted slash or loblolly pine. The shrub layer is dominated by saw palmetto, fetterbush, sand live oak (*Quercus geminata*), gallberry, southern bayberry, coastalplain staggerbush, tarflower (*Bejaria racemosa*), dwarf huckleberry, highbush blueberry, shiny blueberry, and dwarf live oak. The most common herbaceous/graminoid species of the fire-maintained mesic flatwoods include wiregrass, lopsided Indiangrass, toothache grass (*Ctenium aromaticum*), Curtiss' dropseed, broomsedge (*Andropogon virginicus*), bottlebrush threeawn, (*Aristida spiciformis*), witchgrasses, beaksedges, shortleaf rosegentian (*Sabatia brevifolia*), Walter's aster (*Symphyotrichum walteri*), hairy chaffhead (*Carphephorus paniculatus*), slender gayfeather (*Liatris gracilis*), and blackroot (*Pterocaulon pycnostachyum*). In the fire-suppressed stands, many of these herbs and grasses are still present but in greatly reduced densities as a result of shading by an overgrown shrub layer.

Fire Regimes:

Mesic flatwoods depend on frequent, low-intensity fires to maintain a diverse herbaceous layer and provide mineral soils for pine regeneration. Fires naturally occurred every 1 to 8 years, with the majority of fires on the landscape occurring every 1 to 3 years, ignited by lightning storms in late spring and early summer. For management purposes, prescribed fires at a 2 to 4-year interval are needed to keep fuel levels manageable and maintain maximum native biodiversity.

Management Needs:

Ecological management activities of mesic flatwoods at CSF should focus on regular prescribed burning and minimizing soil disturbance. Prescribed fire every 2 to 4 years is needed to reduce woody encroachment, stimulate herbaceous plant diversity, and expose bare mineral soil for longleaf pine regeneration.

I. Sandhill**Description:**

Sandhills occur on crests and slopes of rolling hills and ridges with steep or gentle topography. Soils are deep, marine-deposited, often yellowish sands that are well-drained and relatively infertile. Sandhill is important for aquifer recharge because the porous sands allow water to percolate rapidly with little runoff and minimal evaporation. The deep, sandy soils and a lack of near surface hardpan or water table contribute to a xeric environment. Sandhills are forests of mature, large longleaf pine trees, typically with a sparse subcanopy of turkey oak (*Quercus laevis*), bluejack oak (*Quercus incana*) and / or sand post oak (*Quercus margaretta*), and a fairly dense groundcover of herbs, particularly wiregrass. The greatest plant diversity within sandhill is in the herbaceous groundcover. Dominant grasses, in addition to wiregrass, include other three-awns (*Aristida* spp.), pineywoods dropseed (*Sporobolus junceus*), lopsided Indiangrass, several species of bluestems (*Andropogon* spp.), and little bluestem (*Schizachyrium scoparium*). Sandhills are fire-maintained communities that occur on relatively well-drained, deep sands. The majority of the sandhill habitat on CSF has planted pines and lacks large mature trees. Despite these past silviculture practices the groundcover in some areas, particularly the sandhill in the far eastern portion of the Monticello Unit, is largely intact. These areas should be fairly easy to restore by thinning the pine density and reintroducing growing season fires. However, areas with dense stands of planted sand pine (*Pinus clausa*) have little groundcover, and may require the removal of the overstory pines, and the planting of longleaf pine and herbaceous species.

Sandhill should have an open canopy dominated by longleaf pine. The subcanopy should be slightly denser than the canopy and consist of young longleaf pine and turkey oak. The understory should be composed of a mixture of shrubs, herbs, and bare sand. Understory shrubs include saw palmetto, wooly pawpaw (*Asimina incana*), deerberry (*Vaccinium stamineum*), shiny blueberry, Chapman's oak (*Quercus chapmannii*), gopher apple, littleleaf buckbrush (*Ceanothus microphyllus*), wax myrtle, Adam's needle (*Yucca filamentosa*), and dwarf huckleberry. Herbaceous species include wiregrass, lopsided Indian grass (*Sorghastrum secundum*), pineywoods dropseed, shortleaf gayfeather (*Liatris tenuifolia*), fragrant eryngo (*Eryngium aromaticum*), whitetop aster (*Sericocarpus tortifolius*), snakeroot (*Pterocaulon pycnostachyum*), witchgrasses, summer farewell (*Dalea pinnata*), queensdelight (*Stillingia sylvatica*), tall jointweed (*Polygonella gracilis*), narrowleaf silkgrass (*Pityopsis graminifolia*),

Elliott's milkpea (*Galactia elliotii*), coastalplain chaffhead (*Carphephorus corymbosus*), pinewoods milkweed (*Asclepias humistrata*), whorled milkweed (*Asclepias verticillata*), rabbitbells (*Crotalaria rotundifolia*), sensitive brier (*Mimosa quadrivalvis*), coastalplain goldenaster (*Chrysopsis scabrella*), coastalplain dawnflower (*Stylisma patens*), coastalplain honeycombhead (*Balduina angustifolia*), dogtongue wild buckwheat (*Eriogonum tomentosum*), Florida Indian plantain (*Arnoglossum floridanum*), and Florida mountain mint (*Pycnanthemum floridanum*), among others. Epiphytes should be infrequent and include Spanish moss, ball moss, and Bartram's airplant. Vines should also be found infrequently and may include low densities of muscadine and earleaf greenbrier.

On the 1953 geo-rectified photographs, sandhills appear as a grainy, light peppered signature. Delineation was aided by ground-truthing.

Current Conditions:

Currently, none of the ten sandhill polygons mapped as historically occurring on CSF are in the desired future condition. However, with the thinning of the planted pines and reintroduction of growing season fire sandhill may be one of the more restorable habitats on CSF. Currently, the dominant overstory species are planted stands of longleaf pine, slash pine, or sand pine. For the most part, the dominant pines are less mature and rarely exceed eight (8) inches in diameter at breast height. The midstory contains scattered turkey oak, and sand live oak.

The understory is generally shaded and, in most stands, has been excluded from fire. Evidence of bedding is common throughout the sandhill habitat. Shrubs present include bigflower pawpaw (*Asimina obovata*), sand blackberry (*Rubus cuneifolius*), saw palmetto, sparkleberry (*Vaccinium arboreum*), shiny blueberry, and gopher apple. Relatively high herb species richness remains. Dominant groundcover species include wiregrass, broomsedge bluestem, bracken fern, fragrant eryngo, witchgrasses, yankeeweed (*Eupatorium compositifolium*), Elliott's bluestem (*Andropogon gyrans*), manyflower beardtongue (*Penstemon multiflorus*), Florida Indian plantain, and dogtongue wild buckwheat. Lichens, high densities indicate fire exclusion, are abundant in some areas and include British soldiers (*Cladonia leporina*), and reindeer lichens (*Cladonia evansii* and *C. subtenuis*). Epiphytes are absent. Vines are infrequent and consist of Elliott's milkpea (*Galactia elliotii*), yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier, and muscadine.

A small portion of the historic sandhill habitat has been clearcut (Thomas Creek Tract) and is in the early stages of regeneration. In this area there are very few remaining canopy trees, most of which are hardwoods like sand live oak, bluejack oak, laurel oak (*Quercus hemisphaerica*), and water oak.

Fire Regimes:

Sandhill requires repeated prescribed fires to maintain open structure. Fire should be applied to this community every 1 to 3 years. Variability in the season, frequency, and intensity of fire is important for preserving species diversity since different species in the community flourish under different fire regimes.

Management Needs:

Management activities in sandhill on CSF should focus on regular prescribed burning, minimizing practices that disturb the soil. Prescribed burning alone is the preferred method to reduce woody species abundance in the understory. Widespread soil disturbance in xeric soil types is very detrimental to native perennial groundcover such as wiregrass and should be avoided. Seasonally appropriate prescribed burning is recommended for the greatest benefit in reducing woody species abundance. During all management activities, every effort should be made to minimize any detrimental effects to the gopher tortoise (*Gopherus polyphemus*) population (and its burrows) within this community, as this species is considered a keystone ecosystem component.

J. Wet flatwoods**Description:**

Wet flatwoods are characterized by relatively open-canopy forests of southern pine species with a thick shrubby understory and very sparse ground cover, or a fire-maintained, sparse understory and dense ground cover of hydrophytic herbs. Wet flatwoods exist on relatively flat, poorly drained land. The soils are generally 1 to 3 feet of acidic sands overlying an organic hardpan or clay layer. The hardpan substantially reduces the percolation of water below and above its surface, and therefore wet flatwoods can be inundated for 1 or more months per year. Wet flatwoods often grade into basin swamps and mesic flatwoods.

Wet flatwoods on CSF are pine forests of even-aged and uneven-aged slash pine, longleaf pine (*P. palustris*), or pond pine (*P. serotina*). Wet flatwoods should have either a thick, shrubby understory and very sparse ground cover, or a sparse understory with a dense ground cover of hydrophytic herbs. Although the forest structure of wet flatwoods is similar to mesic flatwoods, species composition in wet flatwoods should contain more hydrophytic species. Shrub species that should occupy wet flatwoods at CSF are gallberry, myrtle dahoon (*I. cassine* var. *myrtifolia*), fetterbush, saw palmetto, loblolly bay, and titi. As in mesic flatwoods, the herbaceous layer in wet flatwoods should include species that help to maintain community structure by fueling growing-season fires; wiregrass should be dominant. Other herbaceous species include Carolina redroot, meadowbeauties (*Rhexia* spp.), yellow-eyed grasses, several species of beaksedges, and hooded pitcherplant (*Sarracenia minor*).

Current Conditions:

The vegetative structure of the wet flatwoods is highly variable and partially dependent on fire history, hydroperiod, and silviculture. For example, herb-dominated wet flatwoods with an open canopy typically fringe many of the basin and dome swamps. A second type is shrub-dominated with little herbaceous/graminoid groundcover. Finally, a third type, which likely has the longest hydroperiod, has a dense canopy and subcanopy with scattered shrubs and shade-adapted herbs. On the newly acquired parcels, the historical wet flatwoods have largely been converted to slash pine plantations and have a dense overstory with a dense shrub layer dominated by bay trees such as swamp bay and loblolly bay. In almost all instances, the wet flatwoods overstory is dominated by slash pine with an occasional loblolly bay, loblolly pine, or pond pine. When present, the subcanopy typically includes myrtle dahoon, dahoon, pond cypress, and occasionally swamp tupelo, blackgum (*Nyssa sylvatica*), swamp bay, and loblolly bay. Typical wet flatwood shrub species include fetterbush, saw palmetto, gallberry, peelbark St. John's wort,

primrosewillow (*Ludwigia* sp.), southern bayberry, and highbush blueberry. These shrubs are also common in the herb-dominated wet flatwoods, albeit at relatively much lower densities.

Common herbs and grasses include beaksedges, Carolina yellow-eyed grass (*Xyris caroliniana*), Elliott's yellow-eyed grass (*Xyris elliottii*), hooded pitcherplant, maidencane, blue maidencane, tenangle pipewort, water cowbane (*Tiedemannia filiformis* ssp. *filiformis*), wiregrass, chalky bluestem (*Andropogon virginicus* var. *glaucus*), toothache grass, Carolina redroot, savannah meadowbeauty (*Rhexia alifanus*), pale meadowbeauty (*Rhexia mariana*), and foxtail club-moss (*Lycopodiella alopecuroides*). Where the shrub or canopy cover is dense, herbs and grasses are uncommon; typical species are Virginia chain fern, bracken fern, cinnamon fern, and muscadine.

The herbaceous / graminoid-dominated wet flatwoods have decreased dramatically since the 1953 aerial photograph was taken (the smooth relatively light gray signature fringing basin and dome swamps); most have graded into shrub-dominated wet flatwoods resulting from fire exclusion. However, the herbaceous/graminoid dominance has returned in areas that have burned recently.

Fire Regimes:

Historically, the fire return interval in wet flatwoods is 2 to 4 years for grassy wet flatwoods and 5 to 10 years for shrubby wet flatwoods. However, in areas of heavy fire exclusion and / or densely planted slash pine, mechanical vegetation removal and/or a more frequent fire interval may need to be applied for initial restoration.

Management Needs:

Management of the wet flatwoods at CSF should focus on returning a more natural fire regime to historic wet flatwoods. Areas with remnant or restored herbaceous vegetation should be high priorities for burning and burned with late spring / early summer fires to stimulate wiregrass flowering and seed viability, though fuel loading and local weather conditions will dictate the degree of burning during that time of the year. Dense slash pine canopies should be thinned to promote a more herbaceous understory.

Prescribed burning should be applied to pine plantations in historical wet flatwoods on a 2 to 5-year cycle, with growing season burns increasing with fuel reduction. This will reduce woody encroachment, sustain herbaceous species, and aid in prevention of catastrophic wildfires.

K. 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 (*Aristida stricta* var. *beyrichiana*) in the drier portions, along with foxtail club-moss, cutover muhly (*Muhlenbergia expansa*), yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty. 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 (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*), plus longleaved threeawn (*Aristida palustris*).

Also common in wetter areas are carnivorous species, such as pitcherplants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.). Other characteristic species in this community include toothache grass, pineland rayless goldenrod (*Bigelovia nudata*), flattened pipewort, water cowbane (*Oxypolis filifolia*), and coastalplain yellow-eyed grass (*Xyris ambigua*).

The desired future condition has the species composition described above for the undisturbed areas. There should be no trees or tall shrubs. Short shrubs should cover less than 20 percent of the community. Herb cover should be greater than 75 percent, with less than 5 percent weedy cover.

Current Conditions:

There are currently no mapped wet prairies at CSF due to fire exclusion and shrub encroachment or conversion to pine plantation.

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:

On CSF, most wet prairie was mapped as historically occurring in the ecotone between wet flatwoods and dome swamps or other forested wetland communities. As such, restoration beyond applying seasonally appropriate prescribed fire will only be considered when management actions to restore the site would not cause additional impacts to historic wet prairie or the adjacent communities. CSF has significant forested and non-forested wetlands, and all restoration must be completed ensuring no BMPs are violated as part of restoration.

L. 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 to further ensure compatibility with other management goals and objectives.

1. Pine Plantation

Description:

Pine plantations are areas altered by silvicultural activities. These can include lands where either 1) planted pines have or will outcompete or shade out native groundcover, 2) the history of planted pines has reduced ground cover to the point where further restoration beyond thinning and burning is required, and/or 3) the method of planting (e.g., bedding) has adversely impacted groundcover.

A large proportion of the historically-typed mesic flatwoods, wet flatwoods, and sandhill communities on CSF had been converted to pine plantation before State ownership. In limited cases and as part of the restoration process, the FFS established plantations of site-

appropriate pine species in degraded communities as required. In all cases, the habitat will return to a more natural state with the thinning of dense stands of planted pines and reintroduction of frequent prescribed fires, and restoration of areas where ditching and bedding occurred prior to State ownership. With repeated prescribed fire, the pine plantations will slowly regain the habitat structure and species composition more typical of the natural communities that were replaced. More specifically, the canopy will be more open and have fewer hardwood species, and the groundcover will be denser and more species diverse with the advent of prescribed fire.

Currently, in most of the pine plantations, the herbaceous plants which are important in fueling prescribed fires have been drastically reduced. Species such as wiregrass, bottlebrush threeawn, lopsided Indiangrass, pineywoods dropseed, and Curtiss' dropseed, are infrequently found within the pine plantations and are at much lower densities than what is typical for each of the communities replaced by the pine plantations. Some of these species may need to be seeded in areas where the native groundcover has been excluded. Similarly, pine species, most often longleaf pine, typical of each community that was replaced by pine plantation may need to be planted in areas where there is not a seed source.

Current Conditions:

The canopy layer of the pine plantations is typically dominated by planted slash pine, loblolly pine, sand pine, or longleaf pine. Also, in the wetter areas, loblolly bay can be codominant with the planted pines in the canopy layer. The sub-canopy layer of the pine plantations includes red maple, myrtle dahoon, sweetgum, wax myrtle, swamp bay, swamp laurel oak, and water oak. Common plants in the shrub layer include red maple, titi, loblolly bay, myrtle dahoon, gallberry, sweetgum, coastalplain staggerbush, fetterbush, wax myrtle, swamp bay, live oak, blue huckleberry, large gallberry, saw palmetto, highbush blueberry, southern dewberry (*Rubus trivialis*), shiny blueberry, and deerberry. The most common herbaceous species of the pine plantations include blue maidencane, broomsedge bluestem, thoroughworts (*Eupatorium* spp.), club-moss, cinnamon fern, royal fern (*Osmunda regalis* var. *spectabilis*), narrowleaf silkgrass, bracken fern, beaksedges, and Virginia chain fern. Several vine species are common throughout the pine plantations and include yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier, laurel greenbrier, and muscadine.

Fire Regimes:

Refer to the historic community. Historic pyrogenic communities may require more frequent fire in the beginning than is typical for the historic natural community.

Management Needs:

Thinning of the pine stands will promote more herbaceous cover in the understory. Planting of longleaf pine, where appropriate, would also be beneficial as long as trees are not allowed to become dense. In most areas, no further planting of native species should be necessary unless wiregrass is completely missing from the herbaceous layer. Frequent prescribed burns will be necessary to move the community towards a more natural structure and composition.

M. Other Altered Landcover Types

Description:

Altered landcover types are areas where the natural community has been overwhelmingly altered as a result of human activity. Pine plantation and restoration natural communities are described in separate sections of this report.

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. Please refer to the appropriate community type for a more specific explanation of the desired future condition.

The desired future condition of the ruderal habitat is dependent on what the historical community used to be. Please refer to the appropriate community type for a more specific explanation of the desired future condition.

Current Conditions:

Altered landcover types on CSF comprise artificial ponds, borrow areas, clearings, developed areas, pine plantations (described above), and roads.

Artificial pond (4 acres) – Water retention ponds, cattle ponds, etc.

Borrow area (9 acres) - Dry or wet depression resulting from past or present mining operation. Phosphate pits and upland borrow pits (sand pits, clay pits, etc.).

Clearing (12 acres) - Dove fields, wildlife food plots, recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community (old homesites, etc.).

Developed (31 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 (190 acres) – Paved or unpaved.

Fire Regimes:

Please refer to the appropriate historical community type.

Management Needs:

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. However, long term hydrology restoration that includes the removal of certain roadbeds and ditches would be highly beneficial to the natural communities on the site.

VIII. References

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IX. Glossary of Abbreviations

ARC	Acquisition and Restoration Council
ARM	Archaeological Resource Management
BMAP	Basin Management Action Plan
BMP	Best Management Practices
CAMA	Office of Coastal and Aquatic Managed Areas
CARL	Conservation and Recreation Lands
CSF	Cary State Forest
COJ	City of Jacksonville
DHR	Division of Historical Resources
DRP	Division of Recreation and Parks
DSO	Direct Support Organization
F.A.C.	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection

FFS	Florida Forest Service
FNAI.....	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
NPS.....	National Park Service
NRCS.....	Natural Resources Conservation Service
OALE	FDACS Office of Agricultural Law Enforcement
OFW	Outstanding Florida Waters
OPS.....	Other Personal Services Employment
SJRWMD	St. Johns River Water Management District
TIITF	Trustees of the Internal Improvement Trust Fund, Board of
USGS.....	United States Geological Survey
WMA.....	Wildlife Management Area

CARY STATE FOREST
2024 LAND MANAGEMENT PLAN

EXHIBITS

Exhibit A

Ten-Year Management Accomplishment Summary

Cary State Forest
10-Year Accomplishments

Site Preparation	Chop Single Pass	No.	187
	Disk/Raking	Acres	28
	Burning	Acres	152
	Herbicide	Acres	118

Planting	Slash Bareroot	No.	20,328
		Acres	28
	Longleaf Containerized	No.	231,846
		Acres	327
	Other	No.	1,250
		Acres	4

Seedling survival checks	Survival Checks	Acres	308
	Plots	No.	90

Timber Stand Improvement	Mechanical Treatments	Acres	33
	Herbicide	Acres	118
	Mowing	Acres	105
	Chopping	Acres	35

Timber Sales	Marking	Acres	20
	Cruising	Acres	1,164
	Harvest	Acres	1,360
		Tons	57,402

Timber Inventory	Inventory Update	Acres	10,515
	Plots	Acres	927

Invasive Control	Torpedo Grass	Acres	65.60
	Japanese Climbing Fern	Acres	15.66
	Chinese Tallow	Acres	10.43
	Cuban treefrog	No.	2.00
	Mimosa	Acres	1.77
	Rattle Box	Acres	0.30
	Sesban	Acres	0.25
	Brazilian Vervain	Acres	0.10
	Sword Fern	Acres	0.06

Fire	Wildfire	No.	8
		Acres	381
	Prescribed Burning	No.	58
		Acres	12,088

Recreation	Day Use Estimated Forest Visitors	No.	3,658,095
	Overnight Primitive Camping	No.	20,507
	Annual Entrance Pass	No.	9
	State Forest Use Permit	No.	0
	Commercial Vendor Permits	No.	2

Roadwork	Roads Constructed	Miles	2
	Roads Graded	Miles	143
	Roads Rebuilt	Miles	66
	Culverts Installed	No.	37
	Low Water Crossing	No.	4

Boundary Maintenance	Maintenance/Marking	Miles	73
-----------------------------	---------------------	-------	----

I&E Activities	Programs/Tours	No.	66
	Radio/TV Articles	No.	7
	Education/Research	No.	5

Other Activities	Field Mowed	Acres	650
	Tract Mowed	Acres	5
	Planter Rentals	Days	57
	Firelines Maintained	Miles	85
	Road Corridor Trimmed (Trees/Brush)	Miles	4
	Road Mowed	Miles	549
	Trail Corridor Mowed, Trimmed, Painted	Miles	0
	Trails Maintained	Miles	23.50
	Apiary Sites Maintained	No.	126
	Gates installed	No.	13
	Hazard Tree Removed	No.	175
	Hogs Trapped	No.	52

Exhibit B

Boundary Map



Florida Forest Service

Cary State Forest Boundary Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was prepared by the Florida Forest Service for informational purposes only. It is not intended to be used for legal or financial purposes. The Florida Forest Service does not warrant the accuracy or completeness of the information contained herein. The user assumes all liability for any use of this map.

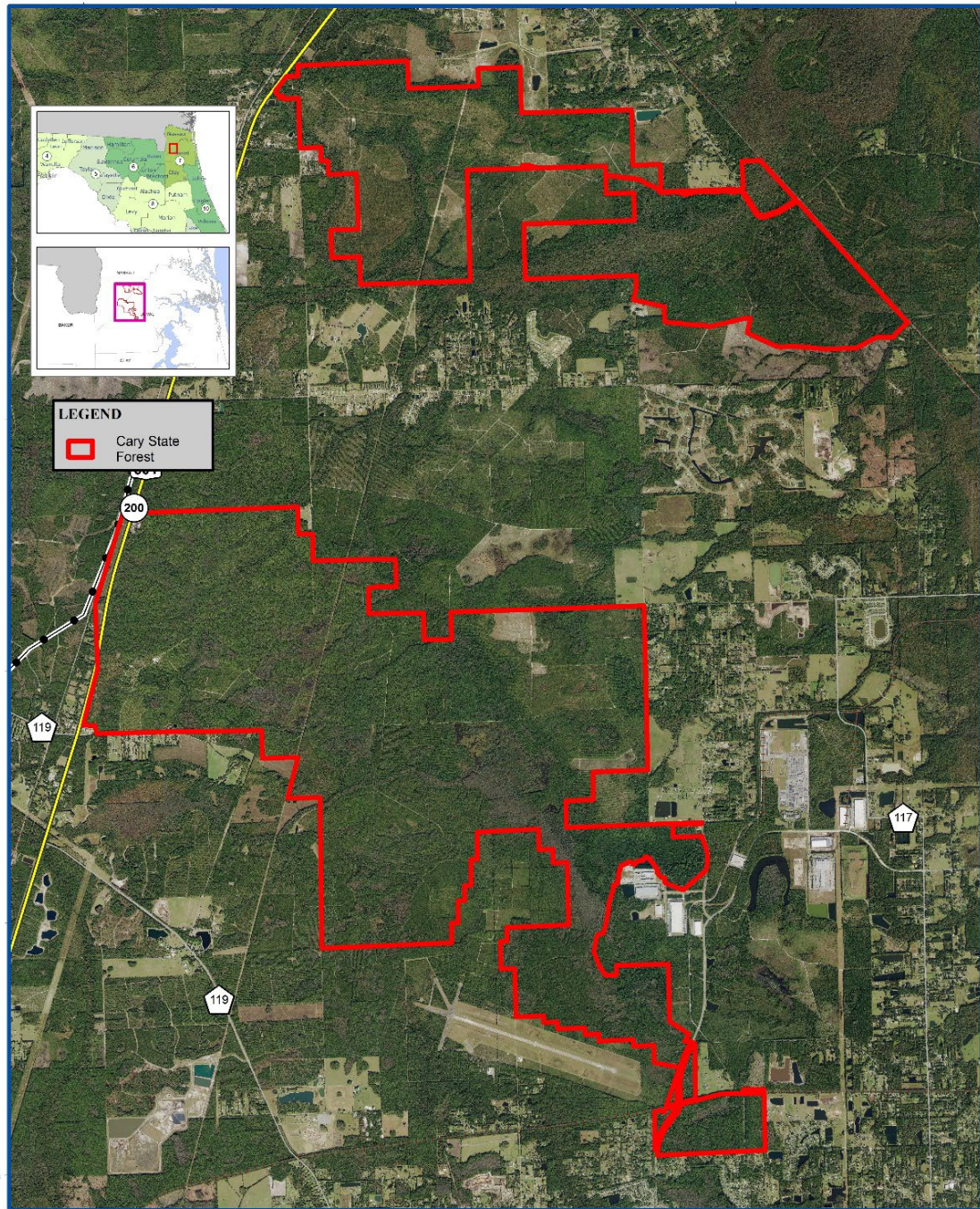
VARIOUS OTHER SOURCES:
The Florida Forest Service has used various sources of information to prepare this map, including aerial photography, ground surveys, and other maps. The user assumes all liability for any use of this map.



LEGEND



Cary State Forest



0.5 0.25 0 0.5 1 Miles



Map Month/Year: March 2022

1,000 500 0 1,000 2,000 3,000 Feet

Exhibit C

Optimal Management Boundary Map



Florida Forest Service

Cary State Forest Optimal Management Boundary Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

NOTES:
1. This map was prepared by the Florida Forest Service.
2. The map shows the optimal management boundary for the Cary State Forest.
3. The map is based on the best available data and is subject to change.
4. The map is not a legal document and should not be used for legal purposes.
5. The map is for informational purposes only.

Legend:
1. Cary State Forest
2. 1995 Cook LP parcel
3. Roberts Parcels Nassau
4. Ingle Creek 2022
5. JMC Nassau County Properties
6. RPC Travelers Duval LLC
7. CSF Optimal Boundary 201020113

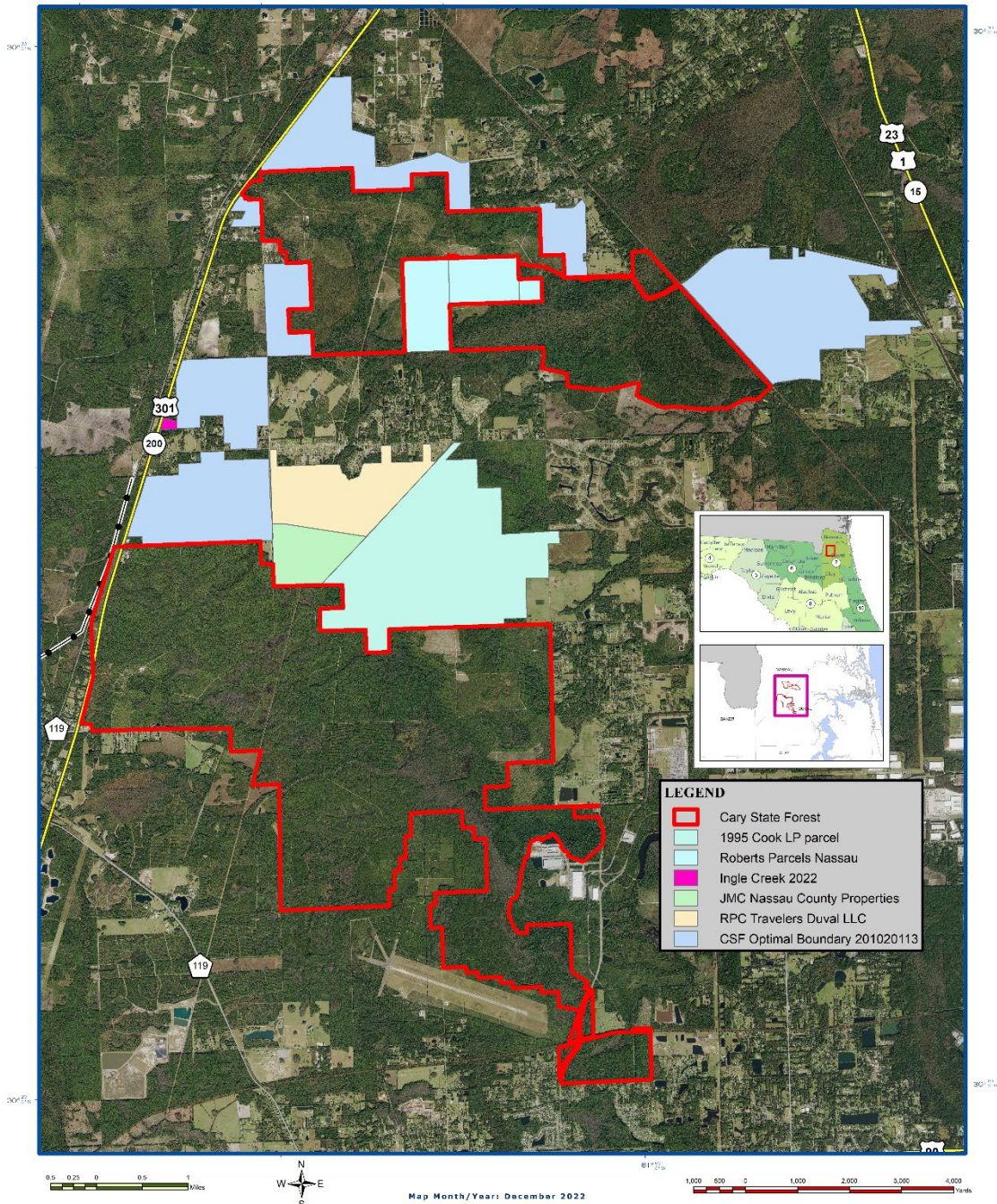


Exhibit D

Facilities, Recreation, and Improvements Map



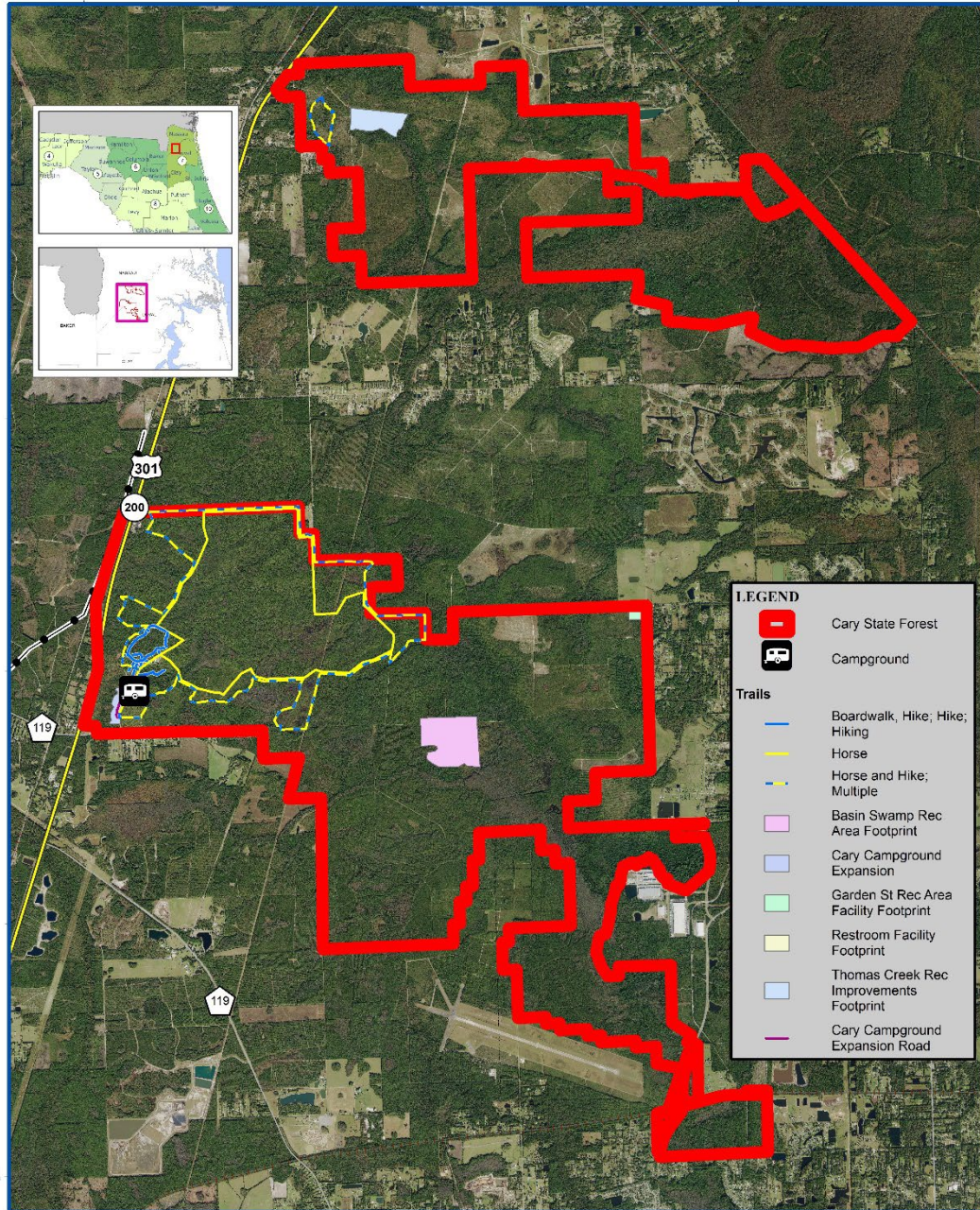
Florida Forest Service

Cary State Forest

Facilities, Recreation, and Improvements Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was prepared by the Florida Forest Service and is intended to provide general information only. It is not intended to be used for legal purposes. The Florida Forest Service does not warrant the accuracy or completeness of the information contained herein. The Florida Forest Service is not responsible for any errors or omissions in this map. The Florida Forest Service is not responsible for any damages or injuries resulting from the use of this map.



0.5 0.25 0 0.5 1 Miles



Map Month/Year: December 2022

1,000 500 0 1,000 2,000 3,000 Feet

Exhibit E

Road Maps



Florida Forest Service

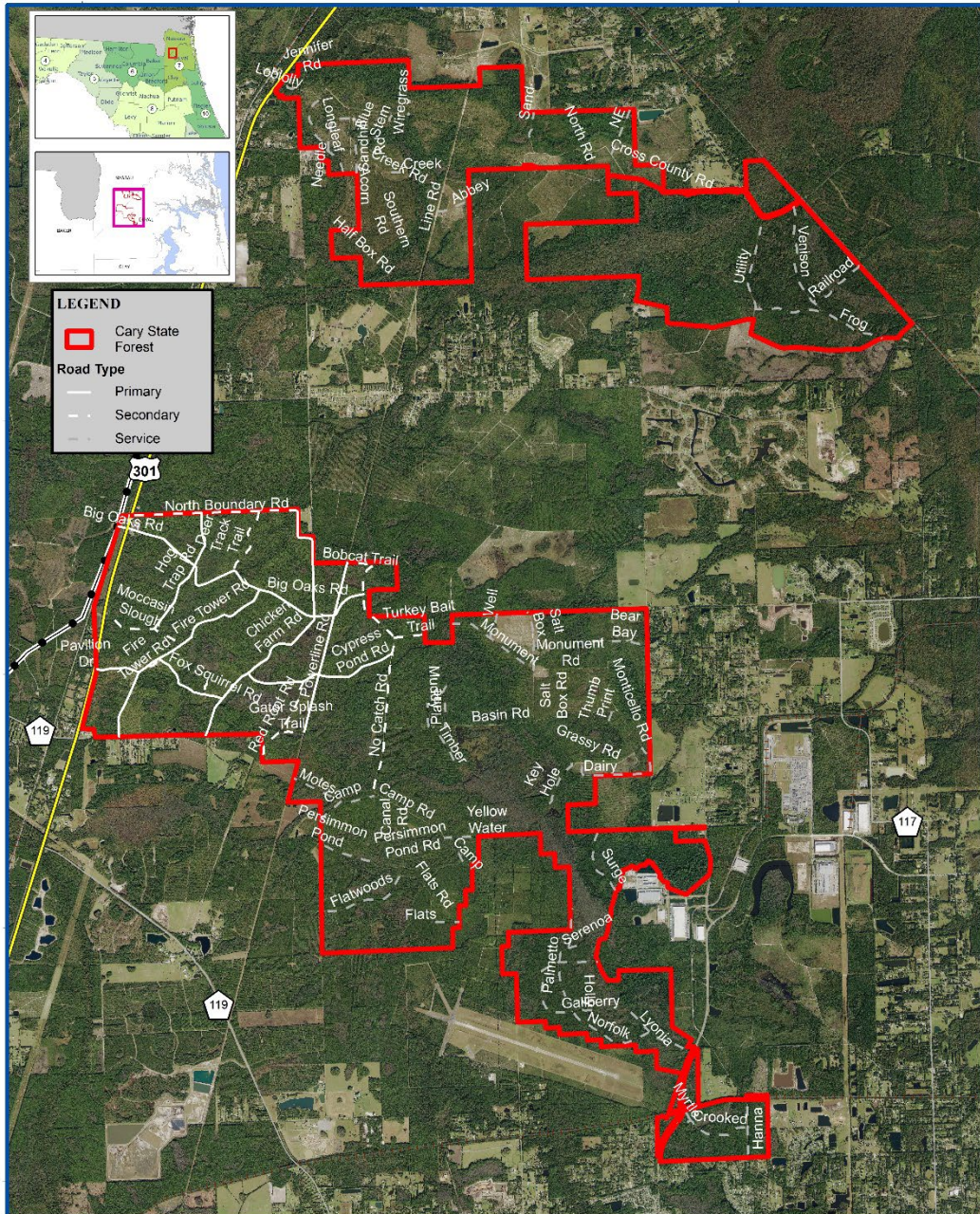
Cary State Forest

Road Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

817105

DISCLAIMER
This map was prepared by the Florida Forest Service
and is not intended to be used for any purpose other than
general information. It is not a legal document and should
not be used for any legal purpose. The Florida Forest Service
does not warrant the accuracy or completeness of the
information contained herein. The Florida Forest Service
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any damages or losses resulting from the use of this
map.





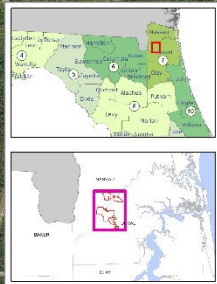
Florida Forest Service

Cary State Forest Road Map

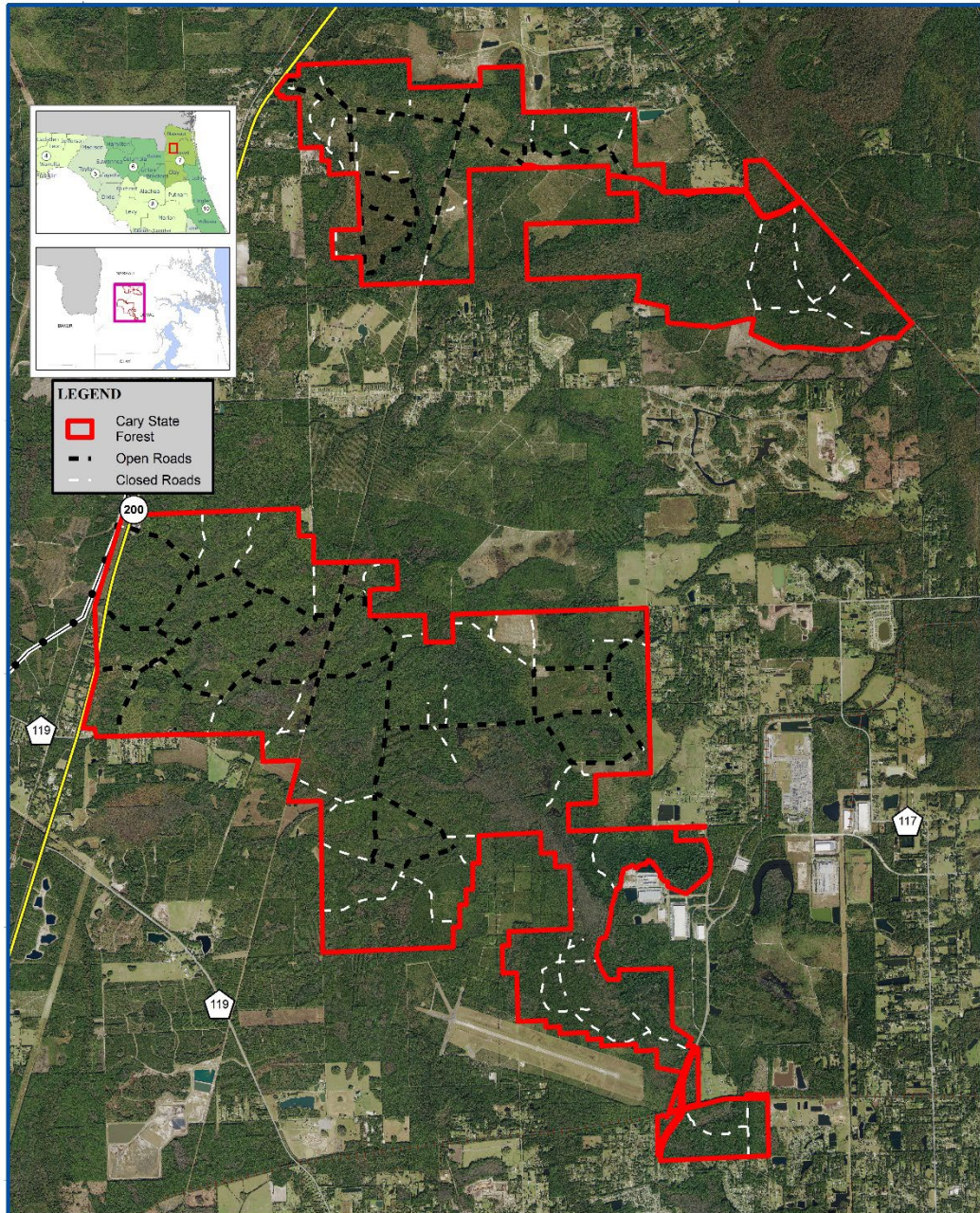
Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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TRAFFIC AREA: The traffic area is defined by the Florida Department of Transportation (FDOT) and is subject to change without notice. The Florida Forest Service is not responsible for any damages or losses resulting from the use of this map.



- LEGEND**
- Cary State Forest
 - Open Roads
 - Closed Roads



0.5 0.25 0 0.5 1 Miles



Map Month/Year: December 2022

1,000 500 0 1,000 2,000 3,000 Feet

Exhibit F

Proximity to Significant Managed Lands



Florida Forest Service

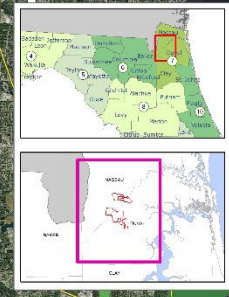
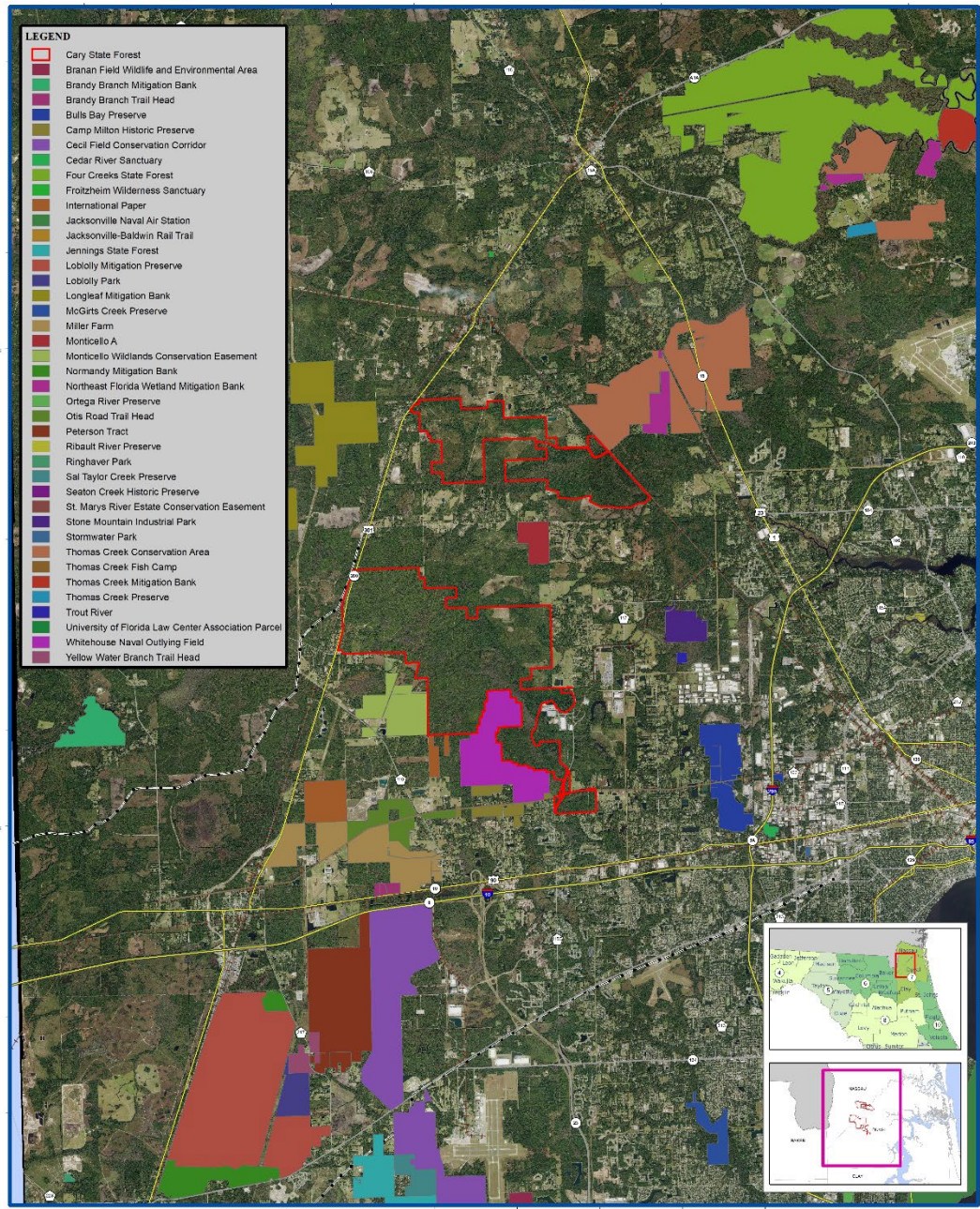
Cary State Forest

Proximity to Significant Managed Lands Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
This map was prepared by the Florida Forest Service and is intended for informational purposes only. It is not intended to be used for legal or regulatory purposes. The Florida Forest Service does not warrant the accuracy or completeness of the information contained herein. The Florida Forest Service is not responsible for any errors or omissions in this map. The Florida Forest Service is not responsible for any damages or losses resulting from the use of this map. The Florida Forest Service is not responsible for any claims or liabilities resulting from the use of this map. The Florida Forest Service is not responsible for any claims or liabilities resulting from the use of this map.

- LEGEND**
- Cary State Forest
 - Branan Field Wildlife and Environmental Area
 - Brandy Branch Mitigation Bank
 - Brandy Branch Trail Head
 - Bulls Bay Preserve
 - Camp Milton Historic Preserve
 - Cecil Field Conservation Corridor
 - Cedar River Sanctuary
 - Four Creeks State Forest
 - Fritzheim Wilderness Sanctuary
 - International Paper
 - Jacksonville Naval Air Station
 - Jacksonville-Baldwin Rail Trail
 - Jennings State Forest
 - Loblolly Mitigation Preserve
 - Loblolly Park
 - Longleaf Mitigation Bank
 - McGirts Creek Preserve
 - Miller Farm
 - Monticello A
 - Monticello Wetlands Conservation Easement
 - Normandy Mitigation Bank
 - Northeast Florida Wetland Mitigation Bank
 - Ortega River Preserve
 - Otis Road Trail Head
 - Peterson Tract
 - Ribault River Preserve
 - Ringbaver Park
 - Sal Taylor Creek Preserve
 - Seaton Creek Historic Preserve
 - St. Marys River Estate Conservation Easement
 - Stone Mountain Industrial Park
 - Stormwater Park
 - Thomas Creek Conservation Area
 - Thomas Creek Fish Camp
 - Thomas Creek Mitigation Bank
 - Thomas Creek Preserve
 - Trout River
 - University of Florida Law Center Association Parcel
 - Whitehouse Naval Outlying Field
 - Yellow Water Branch Trail Head



Map Month/Year: January 2024



Exhibit G

Department of State Report on Archaeological and Historical Sites



This record search is for informational purposes only and does **NOT** constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does **NOT** provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com for project review information.

June 14, 2023

Emily Marsh
Land Management Planner
Florida Forest Service
Florida Department of Agriculture and Consumer Services

In response to your request on June 14, 2023, the Florida Master Site File lists three archeological sites and a historic cemetery recorded for the Cary State Forest's managed area.

This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.

- Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.
 - While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.
- #
- Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Eman M. Vovsi, Ph.D.
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com

Cultural Resource Roster

Created: 6/14/2023

SitID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
NA00746	AR	MEDIUM CHICKEN	Bryceville		Not Eligible	
NA01278	AR	Thomas Creek Cattle Dip	Bryceville			
NA01279	AR	Bryce Cattle Dip	Bryceville			
NA01865	CM	Thomas Creek Cemetery	Bryceville	Established 1915, Graves = 3		

Exhibit H

Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties
(revised June 2021)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. Historic Property Definition

Historic properties include archaeological sites and historic structures as well as other types of resources. Chapter 267, Florida Statutes states: “*‘Historic property’ or ‘historic resource’ means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.*”

B. Agency Responsibilities

Per Chapter 267, F.S. and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent with the historic property and the agency’s mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

C. Statutory Authority

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/regulations-guidelines/>

D. Management Implementation

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

E. Archaeological Resource Management (ARM) Training

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

<https://dos.myflorida.com/historical/archaeology/education/arm-training-courses/>

F. Matrix for Ground Disturbance on State Lands

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

<https://dos.myflorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/>

G. Human Remains Treatment

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

<https://dos.myflorida.com/historical/archaeology/human-remains/>
<https://dos.myflorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/>

H. Division of Historical Resources Review Procedure

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/state-lands-review/>

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Compliance and Review Section
Bureau of Historic Preservation
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

StateLandsCompliance@dos.myflorida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

Exhibit I

Soil Types Map and Descriptions



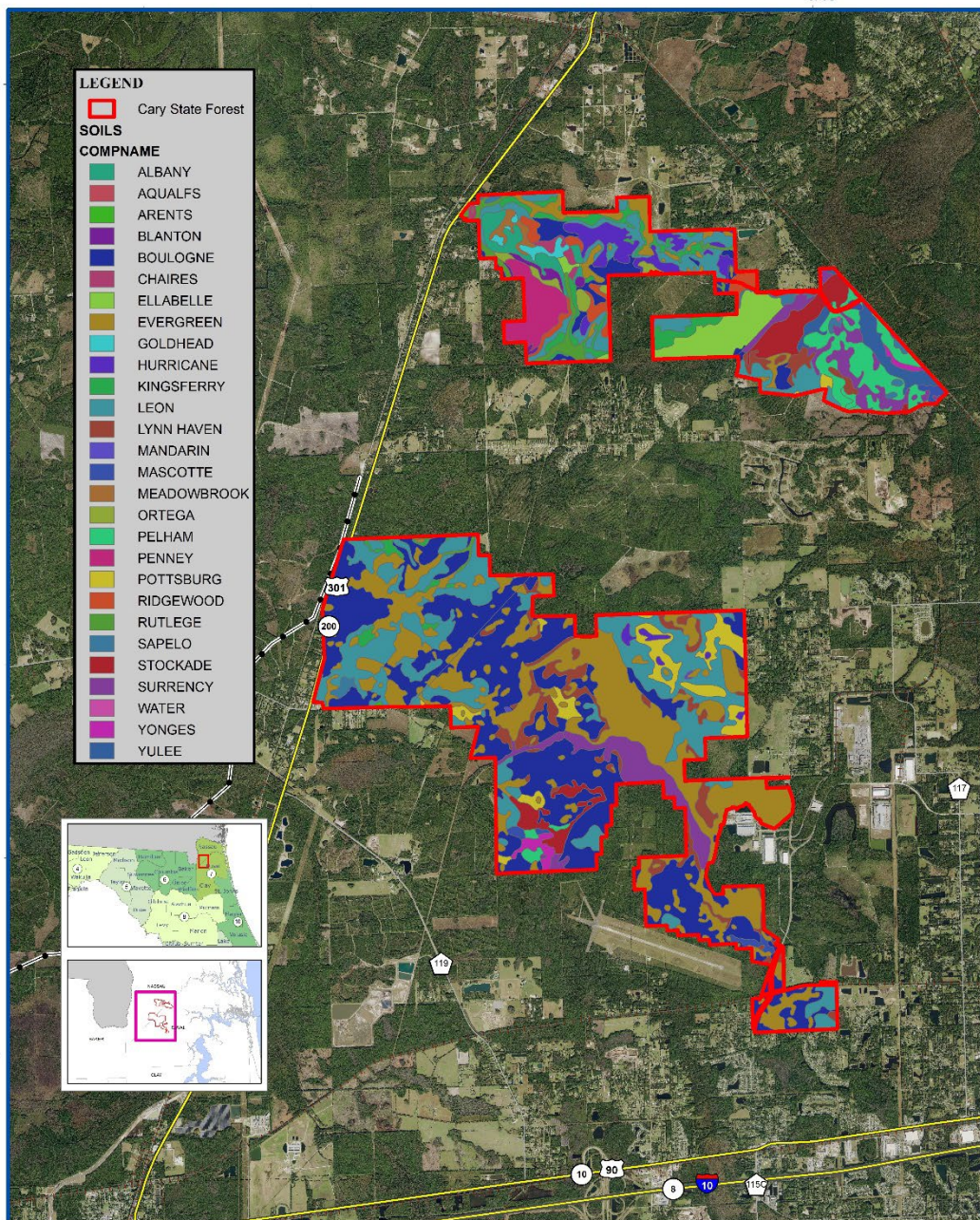
Florida Forest Service

Cary State Forest Soils Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

NOTES:
1. This map was prepared by the Florida Forest Service.
2. The map is a generalization of the data and should not be used for legal purposes.
3. The map is a generalization of the data and should not be used for legal purposes.
4. The map is a generalization of the data and should not be used for legal purposes.
5. The map is a generalization of the data and should not be used for legal purposes.

Legend Area Symbols as courtesy of
the Florida Forest Service, 2022. All rights reserved.
Map data is a generalization of the data.



- LEGEND**
- Cary State Forest
- SOILS**
- COMPNAME**
- ALBANY
 - AQUALFS
 - ARENTS
 - BLANTON
 - BOULOGNE
 - CHAIRES
 - ELLABELLE
 - EVERGREEN
 - GOLDHEAD
 - HURRICANE
 - KINGSFERRY
 - LEON
 - LYNN HAVEN
 - MANDARIN
 - MASCOTTE
 - MEADOWBROOK
 - ORTEGA
 - PELHAM
 - PENNEY
 - POTTSBURG
 - RIDGEWOOD
 - RUTLEGE
 - SAPELO
 - STOCKADE
 - SURRENCY
 - WATER
 - YONGES
 - YULEE



0.5 0.25 0 0.5 1 1.5 Miles



Map Month/Year: July 2022

0 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000 4,500 5,000 Feet

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Duval County, Florida

Map Unit: 2—Albany fine sand, 0 to 5 percent slopes

Component: Albany (86%)

The Albany component makes up 86 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Mascotte (4%)

Generated brief soil descriptions are created for major soil components. The Mascotte soil is a minor component.

Component: Blanton (4%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Component: Sapelo (3%)

Generated brief soil descriptions are created for major soil components. The Sapelo soil is a minor component.

Component: Pelham, hydric (3%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Map Unit: 14—Boulogne fine sand, 0 to 2 percent slopes

Component: Boulogne (95%)

The Boulogne component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (2%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Pottsburg, high (2%)

Generated brief soil descriptions are created for major soil components. The Pottsburg, high soil is a minor component.

Component: Wesconnett (1%)

Generated brief soil descriptions are created for major soil components. The Wesconnett soil is a minor component.

Map Unit: 22—Evergreen-Wesconnett complex, depressional, 0 to 2 percent slopes

Component: Evergreen (63%)

The Evergreen component makes up 63 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wesconnett (33%)

The Wesconnett component makes up 33 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (1%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Pottsburg (1%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Lynn Haven (1%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Pamlico (1%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Map Unit: 24—Hurricane and Ridgewood soils, 0 to 5 percent slopes**Component: Hurricane (53%)**

The Hurricane component makes up 53 percent of the map unit. Slopes are 0 to 5 percent. This component is on flats on marine terraces on coastal plains, rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ridgewood (35%)

The Ridgewood component makes up 35 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pottsburg (2%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Mandarin (2%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Component: Boulogne (2%)

Generated brief soil descriptions are created for major soil components. The Boulogne soil is a minor component.

Component: Lynn Haven (2%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Ortega (2%)

Generated brief soil descriptions are created for major soil components. The Ortega soil is a minor component.

Component: Leon (2%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Map Unit: 32—Leon fine sand, 0 to 2 percent slopes

Component: Leon, non-hydric (89%)

The Leon, non-hydric component makes up 89 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on lower coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Leon, hydric soil is a minor component.

Component: Mascotte (3%)

Generated brief soil descriptions are created for major soil components. The Mascotte soil is a minor component.

Component: Mandarin (3%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Map Unit: 35—Lynn Haven fine sand, 0 to 2 percent slopes

Component: Lynn Haven (92%)

The Lynn Haven component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (2%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Boulogne (2%)

Generated brief soil descriptions are created for major soil components. The Boulogne soil is a minor component.

Component: Evergreen (2%)

Generated brief soil descriptions are created for major soil components. The Evergreen soil is a minor component.

Component: Wesconnett (2%)

Generated brief soil descriptions are created for major soil components. The Wesconnett soil is a minor component.

Map Unit: 36—Mandarin fine sand, 0 to 2 percent slopes

Component: Mandarin (92%)

The Mandarin component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises, Lower coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Leon (5%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Rutlege (1%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Component: Centenary (1%)

Generated brief soil descriptions are created for major soil components. The Centenary soil is a minor component.

Component: Ortega (1%)

Generated brief soil descriptions are created for major soil components. The Ortega soil is a minor component.

Map Unit: 38—Mascotte fine sand, 0 to 2 percent slopes

Component: Mascotte, non-hydric (94%)

The Mascotte, non-hydric component makes up 94 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on lower coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Unnamed (5%)

Generated brief soil descriptions are created for major soil components. The Unnamed soil is a minor component.

Component: Surrency (1%)

Generated brief soil descriptions are created for major soil components. The Surrency soil is a minor component.

Map Unit: 44—Mascotte-Pelham complex, 0 to 2 percent slopes**Component:** Mascotte (65%)

The Mascotte component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, non-hydric (31%)

The Pelham, non-hydric component makes up 31 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Surrency (2%)

Generated brief soil descriptions are created for major soil components. The Surrency soil is a minor component.

Map Unit: 51—Pelham fine sand, 0 to 2 percent slopes

Component: Pelham (75%)

The Pelham component makes up 75 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, lower coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Unnamed (13%)

Generated brief soil descriptions are created for major soil components. The Unnamed soil is a minor component.

Component: Albany (6%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Meggett (3%)

Generated brief soil descriptions are created for major soil components. The Meggett soil is a minor component.

Component: Surrency (3%)

Generated brief soil descriptions are created for major soil components. The Surrency soil is a minor component.

Map Unit: 56—Pottsborg fine sand, 0 to 2 percent slopes**Component: Pottsborg (91%)**

The Pottsborg component makes up 91 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Evergreen (2%)

Generated brief soil descriptions are created for major soil components. The Evergreen soil is a minor component.

Component: Lynn Haven (2%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Hurricane (2%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Wesconnett (1%)

Generated brief soil descriptions are created for major soil components. The Wesconnett soil is a minor component.

Component: Pottsborg, high (1%)

Generated brief soil descriptions are created for major soil components. The Pottsburg, high soil is a minor component.

Component: Mandarin (1%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Map Unit: 58—Pottsburg fine sand, high, 0 to 3 percent slopes

Component: Pottsburg, high (93%)

The Pottsburg, high component makes up 93 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Boulogne (2%)

Generated brief soil descriptions are created for major soil components. The Boulogne soil is a minor component.

Component: Hurricane (2%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Pottsburg (1%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Leon (1%)

Generated brief soil descriptions are created for major soil components. The Leon soil is a minor component.

Component: Ridgewood (1%)

Generated brief soil descriptions are created for major soil components. The Ridgewood soil is a minor component.

Map Unit: 63—Sapelo fine sand, 0 to 2 percent slopes**Component:** Sapelo (90%)

The Sapelo component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Yonges (2%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Pelham, non-hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, non-hydric soil is a minor component.

Component: Pelham, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Surrency (2%)

Generated brief soil descriptions are created for major soil components. The Surrency soil is a minor component.

Map Unit: 66—Surrency loamy fine sand, depressional, 0 to 2 percent slopes**Component:** Surrency (92%)

The Surrency component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 12 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (2%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Pamlico (2%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Component: Pelham, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Yonges (1%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Component: Stockade (1%)

Generated brief soil descriptions are created for major soil components. The Stockade soil is a minor component.

Map Unit: 67—Surrency loamy fine sand, 0 to 2 percent slopes, frequently flooded

Component: Surrency, flooded (93%)

The Surrency, flooded component makes up 93 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, December. Organic matter content in the surface horizon is about 12 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (2%)

Generated brief soil descriptions are created for major soil components. The Pamlico soil is a minor component.

Component: Pelham, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Lynn Haven (2%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Yonges (1%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Map Unit: 78—Yonges fine sandy loam, 0 to 2 percent slopes

Component: Yonges (88%)

The Yonges component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynchburg (4%)

Generated brief soil descriptions are created for major soil components. The Lynchburg soil is a minor component.

Component: Yulee, depressional (4%)

Generated brief soil descriptions are created for major soil components. The Yulee, depressional soil is a minor component.

Component: Pelham, hydric (4%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Map Unit: 79—Yulee clay, 0 to 2 percent slopes, frequently flooded**Component:** Yulee, frequently flooded (94%)

The Yulee, frequently flooded component makes up 94 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Yonges (3%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Component: Surrency, flooded (3%)

Generated brief soil descriptions are created for major soil components. The Surrency, flooded soil is a minor component.

Map Unit: 81—Stockade fine sandy loam, depressional, 0 to 2 percent slopes**Component:** Stockade (91%)

The Stockade component makes up 91 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (3%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Yonges (2%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Component: Pelham, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Yulee, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Yulee, depressional soil is a minor component.

Map Unit: 82—Pelham fine sand, ponded, 0 to 2 percent slopes

Component: Pelham, ponded (96%)

The Pelham, ponded component makes up 96 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on lower coastal plains. The parent material consists of sandy and/or loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Unnamed (2%)

Generated brief soil descriptions are created for major soil components. The Unnamed soil is a minor component.

Component: Bayboro, ponded (1%)

Generated brief soil descriptions are created for major soil components. The Bayboro, ponded soil is a minor component.

Component: Yonges (1%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Map Unit: 86—Yulee clay, depressional, 0 to 2 percent slopes

Component: Yulee, depressional (90%)

The Yulee, depressional component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, hydric (4%)

Generated brief soil descriptions are created for major soil components. The Pelham, hydric soil is a minor component.

Component: Yonges (3%)

Generated brief soil descriptions are created for major soil components. The Yonges soil is a minor component.

Component: Stockade (3%)

Generated brief soil descriptions are created for major soil components. The Stockade soil is a minor component.

Map Unit: 99—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Nassau County, Florida

Map Unit: 2—Arents, nearly level

Component: Arents (100%)

The Arents component makes up 100 percent of the map unit. Slopes are 0 to 2 percent. This component is on fills, rises on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during March, April, May, June, July, August. Organic matter content in the surface horizon is about 1 percent. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 6—Hurricane-Pottsburg fine sands, 0 to 5 percent slopes

Component: Hurricane (50%)

The Hurricane component makes up 50 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during March, April, May, June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pottsburg (39%)

The Pottsburg component makes up 39 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 16 inches during May, June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Boulogne (3%)

Generated brief soil descriptions are created for major soil components. The Boulogne soil is a minor component.

Component: Ridgewood (2%)

Generated brief soil descriptions are created for major soil components. The Ridgewood soil is a minor component.

Component: Resota (2%)

Generated brief soil descriptions are created for major soil components. The Resota soil is a minor component.

Component: Mandarin (2%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Component: Leon, non-hydric (2%)

Generated brief soil descriptions are created for major soil components. The Leon, non-hydric soil is a minor component.

Map Unit: 9—Leon fine sand, 0 to 2 percent slopes

Component: Leon, non-hydric (89%)

The Leon, non-hydric component makes up 89 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on lower coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Leon, hydric soil is a minor component.

Component: Mascotte (3%)

Generated brief soil descriptions are created for major soil components. The Mascotte soil is a minor component.

Component: Mandarin (3%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Map Unit: 11—Chaires fine sand

Component: Chaires (91%)

The Chaires component makes up 91 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during May, June, July, August. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Goldhead, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Goldhead, depressional soil is a minor component.

Component: Meggett (2%)

Generated brief soil descriptions are created for major soil components. The Meggett soil is a minor component.

Component: Ocilla (2%)

Generated brief soil descriptions are created for major soil components. The Ocilla soil is a minor component.

Component: Meadowbrook, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook, depressional soil is a minor component.

Map Unit: 14—Rutlege mucky fine sand, frequently flooded

Component: Rutlege (90%)

The Rutlege component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or fluvio-marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Croatan (4%)

Generated brief soil descriptions are created for major soil components. The Croatan soil is a minor component.

Component: Kingsferry (3%)

Generated brief soil descriptions are created for major soil components. The Kingsferry soil is a minor component.

Component: Ellabelle (3%)

Generated brief soil descriptions are created for major soil components. The Ellabelle soil is a minor component.

Map Unit: 16—Ellabelle mucky fine sand, frequently flooded

Component: Ellabelle (91%)



The Ellabelle component makes up 91 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy and loamy marine or fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kingsferry (3%)

Generated brief soil descriptions are created for major soil components. The Kingsferry soil is a minor component.

Component: Goldhead, hydric (3%)

Generated brief soil descriptions are created for major soil components. The Goldhead, hydric soil is a minor component.

Component: Meggett (3%)

Generated brief soil descriptions are created for major soil components. The Meggett soil is a minor component.

Map Unit: 20—Ortega fine sand, 0 to 5 percent slopes

Component: Ortega (93%)

The Ortega component makes up 93 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hurricane (2%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Albany (2%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Kershaw (2%)

Generated brief soil descriptions are created for major soil components. The Kershaw soil is a minor component.

Component: Ridgewood (1%)

Generated brief soil descriptions are created for major soil components. The Ridgewood soil is a minor component.

Map Unit: 21—Blanton fine sand, 0 to 5 percent slopes**Component: Blanton (90%)**

The Blanton component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 39 inches during May, June, July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ocilla (3%)

Generated brief soil descriptions are created for major soil components. The Ocilla soil is a minor component.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Ridgewood (2%)

Generated brief soil descriptions are created for major soil components. The Ridgewood soil is a minor component.

Component: Penney (2%)

Generated brief soil descriptions are created for major soil components. The Penney soil is a minor component.

Map Unit: 22—Sapelo-Leon fine sand**Component: Sapelo, non-hydric (49%)**

The Sapelo, non-hydric component makes up 49 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during May, June, July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, non-hydric (24%)

The Leon, non-hydric component makes up 24 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during May, June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (10%)

The Leon, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during May, June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, hydric (10%)

The Sapelo, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during May, June, July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Meadowbrook, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook, depressional soil is a minor component.

Component: Goldhead, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Goldhead, depressional soil is a minor component.

Map Unit: 24—Kingsferry fine sand

Component: Kingsferry (89%)

The Kingsferry component makes up 89 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (4%)

Generated brief soil descriptions are created for major soil components. The Lynn Haven soil is a minor component.

Component: Leon, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The Leon, non-hydric soil is a minor component.

Component: Rutlege (3%)

Generated brief soil descriptions are created for major soil components. The Rutlege soil is a minor component.

Map Unit: 27—Ridgewood fine sand, 0 to 5 percent slopes

Component: Ridgewood (91%)

The Ridgewood component makes up 91 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Centenary (3%)

Generated brief soil descriptions are created for major soil components. The Centenary soil is a minor component.

Component: Ortega (2%)

Generated brief soil descriptions are created for major soil components. The Ortega soil is a minor component.

Component: Pottsburg (2%)

Generated brief soil descriptions are created for major soil components. The Pottsburg soil is a minor component.

Component: Mandarin (2%)

Generated brief soil descriptions are created for major soil components. The Mandarin soil is a minor component.

Map Unit: 32—Aqualfs, loamy

Component: Aqualfs, loamy (98%)

The Aqualfs, loamy component makes up 98 percent of the map unit. Slopes are 2 to 5 percent. This component is on rises on coastal plains on marine terraces. The parent material consists of loamy mine spoil or earthy fill. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. This soil does not meet hydric criteria.

Component: Aqualfs (2%)

Generated brief soil descriptions are created for major soil components. The Aqualfs soil is a minor component.

Map Unit: 33—Goldhead-Meadowbrook fine sands, depressional

Component: Goldhead, depressional (64%)

The Goldhead, depressional component makes up 64 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, depressional (27%)

The Meadowbrook, depressional component makes up 27 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Croatan (9%)

Generated brief soil descriptions are created for major soil components. The Croatan soil is a minor component.

Map Unit: 36—Boulogne fine sand

Component: Boulogne (98%)

The Boulogne component makes up 98 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during March, April, May, June, July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hurricane (1%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Ridgewood (1%)

Generated brief soil descriptions are created for major soil components. The Ridgewood soil is a minor component.

Map Unit: 39—Evergreen-Leon mucks, depressional

Component: Evergreen (64%)

The Evergreen component makes up 64 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (36%)

The Leon component makes up 36 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 51—Albany fine sand, 0 to 5 percent slopes

Component: Albany (86%)

The Albany component makes up 86 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during May, June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, non-hydric (2%)

Generated brief soil descriptions are created for major soil components. The Sapelo, non-hydric soil is a minor component.

Component: Meadowbrook, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook, hydric soil is a minor component.

Component: Leefield (2%)

Generated brief soil descriptions are created for major soil components. The Leefield soil is a minor component.

Component: Blanton (2%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Component: Hurricane (2%)

Generated brief soil descriptions are created for major soil components. The Hurricane soil is a minor component.

Component: Leon, non-hydric (2%)

Generated brief soil descriptions are created for major soil components. The Leon, non-hydric soil is a minor component.

Component: Ocilla (2%)

Generated brief soil descriptions are created for major soil components. The Ocilla soil is a minor component.

Map Unit: 53—Meadowbrook fine sand**Component:** Meadowbrook, non-hydric (55%)

The Meadowbrook, non-hydric component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during March, April, May, June, July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, hydric (35%)

The Meadowbrook, hydric component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during March, April, May, June, July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Boulogne (3%)

Generated brief soil descriptions are created for major soil components. The Boulogne soil is a minor component.

Component: Sapelo, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Sapelo, hydric soil is a minor component.

Component: Osier (2%)

Generated brief soil descriptions are created for major soil components. The Osier soil is a minor component.

Map Unit: 54—Sapelo fine sand**Component:** Sapelo, non-hydric (80%)

The Sapelo, non-hydric component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during May, June, July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, hydric (10%)

The Sapelo, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during May, June, July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Albany (3%)

Generated brief soil descriptions are created for major soil components. The Albany soil is a minor component.

Component: Goldhead, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Goldhead, depressional soil is a minor component.

Component: Leon, non-hydric (2%)

Generated brief soil descriptions are created for major soil components. The Leon, non-hydric soil is a minor component.

Component: Meadowbrook, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Meadowbrook, depressional soil is a minor component.

Map Unit: 56—Blanton-Ortega fine sands, 5 to 12 percent slopes**Component:** Blanton (73%)

The Blanton component makes up 73 percent of the map unit. Slopes are 5 to 12 percent. This component is on valley sides on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 39 inches during June, July, August. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ortega (20%)

The Ortega component makes up 20 percent of the map unit. Slopes are 5 to 12 percent. This component is on valley sides on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ocilla (7%)

Generated brief soil descriptions are created for major soil components. The Ocilla soil is a minor component.

Map Unit: 57—Penney fine sand, 0 to 5 percent slopes

Component: Penney (94%)

The Penney component makes up 94 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Blanton (6%)

Generated brief soil descriptions are created for major soil components. The Blanton soil is a minor component.

Data Source Information

Soil Survey Area: Duval County, Florida
Survey Area Data: Version 16, Sep 1, 2021

Soil Survey Area: Nassau County, Florida
Survey Area Data: Version 21, Sep 1, 2021

Exhibit J

Department of Environmental Protection
Outstanding Florida Waters



FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Via Email

March 17th, 2022

Ms. Patti Anderson
Land Management Planner
Florida Forest Service
Florida Department of Agriculture and Consumer Services
3125 Conner Boulevard, Suite I-262, Mail Stop C-25
Tallahassee, FL 32399-1650

RE: Cary State Forest

Dear Ms. Anderson:

Thank you for your inquiry regarding the surface water quality classifications and Outstanding Florida Waters (OFWs) within or near Cary State Forest in Nassau and Duval Counties. All of the surface waters within, adjacent to, or within 5 miles of Cary State Forest are classified as Class III waters according to Rule 62-302.400, Florida Administrative Code (F.A.C.).

According to subsection 62-302.700(9), F.A.C., there are no OFWs within or adjacent to the Cary State Forest (see enclosed map). The OFW closest to the Cary State Forest is the Timucuan Ecological and Historic Preserve, which is located over 10 miles away to the northeast.

You may also be interested to know that, according to the Florida Natural Areas Inventory Managed Areas data layer, there are several other parcels within, adjacent, or nearby that are considered conservation lands at a Federal, State, or Local level. However, these areas have not been designated as OFWs.

If you have any questions or need additional information about this response, please feel free to contact me via e-mail at Talia.E.Smith@FloridaDEP.gov or by phone at 850-245-8068.

Sincerely,

Talia Elisa Smith
Standards Development Section

Cary State Forest Map:

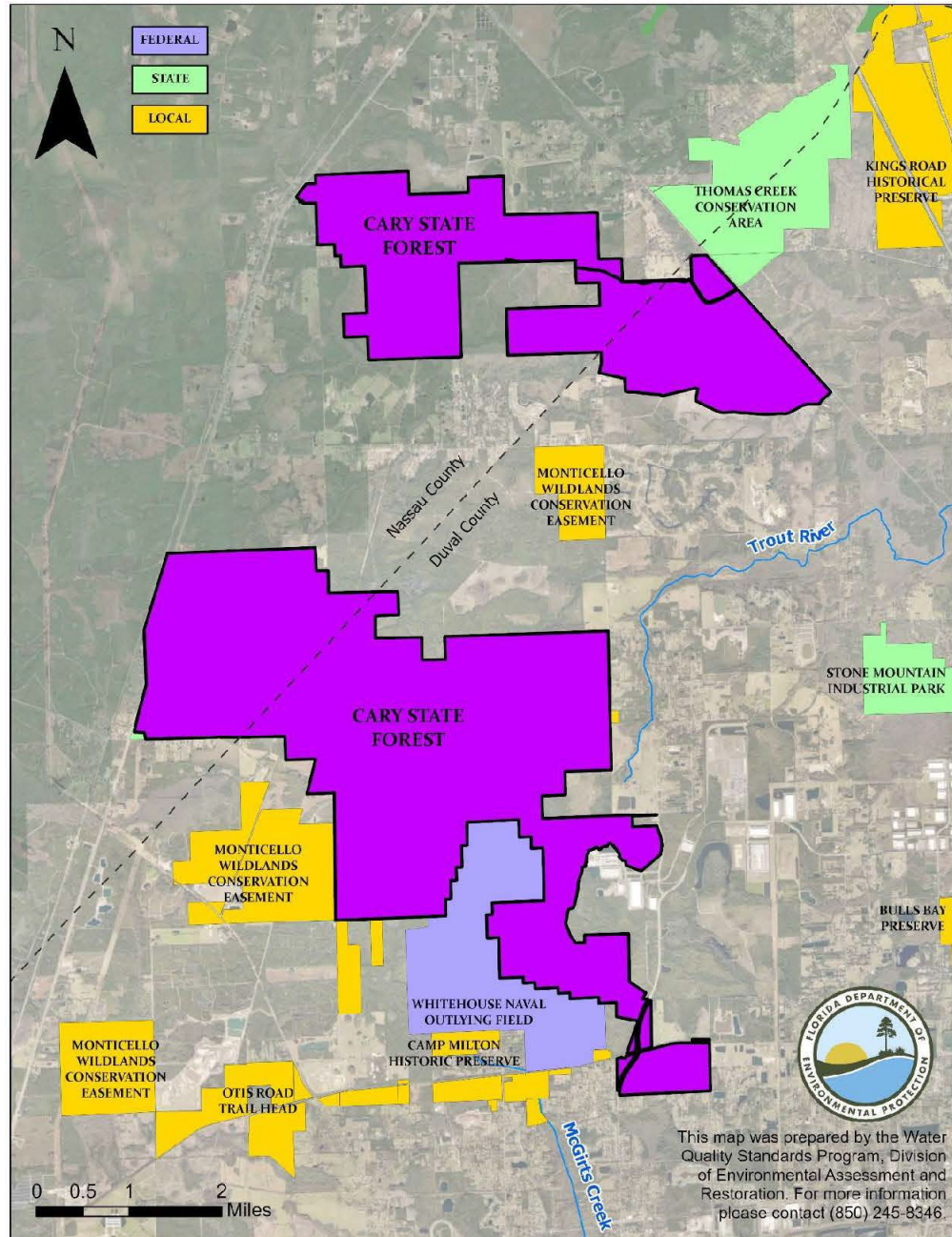


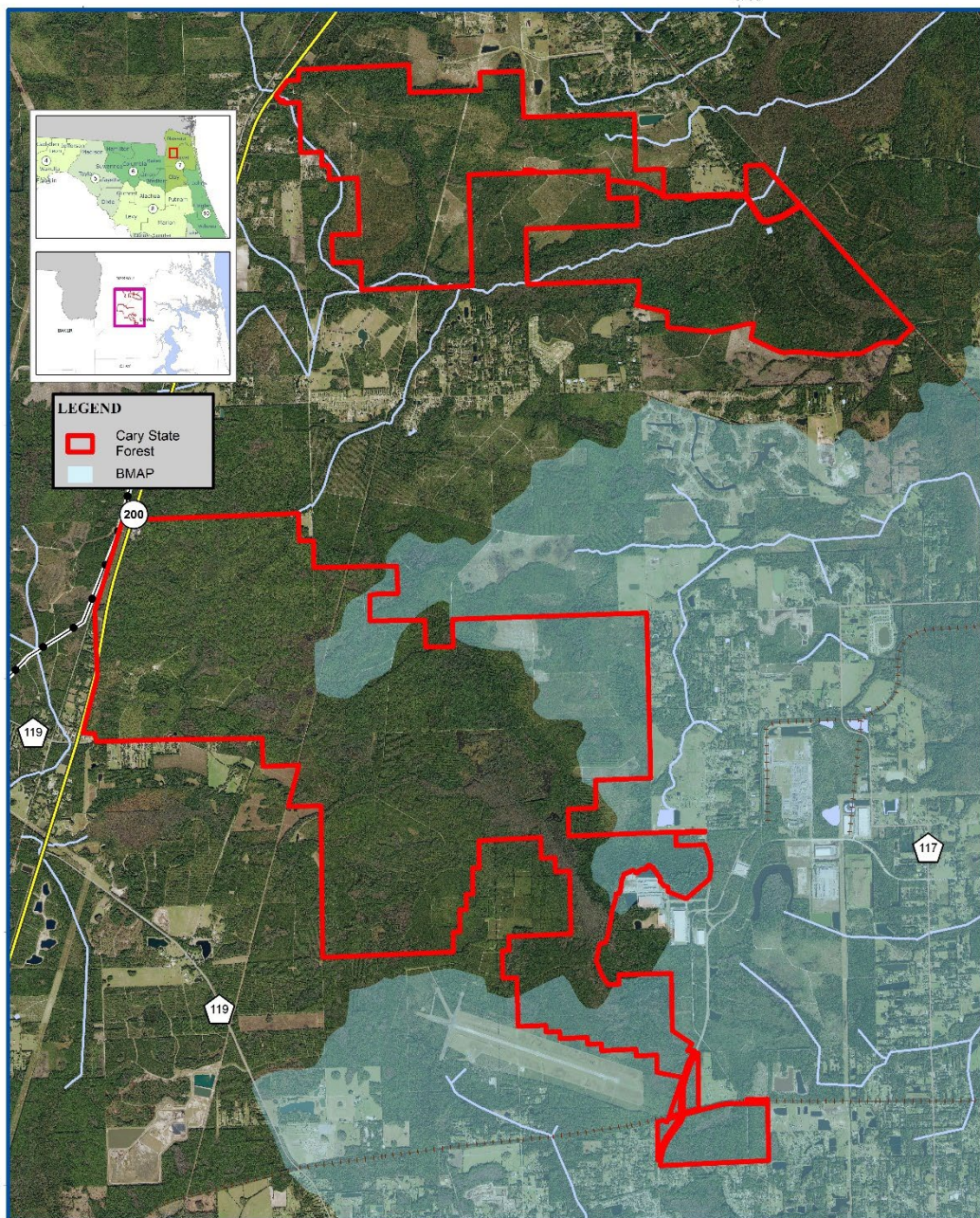
Exhibit K

Water Resources and BMAP Map



Water Resources / BMAP Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

[illegible]

Response	Percentage
Yes	85%
No	15%



Map Month/Year: July 2022



Exhibit L

Florida Natural Areas Inventory Managed Area Tracking Record



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

March 21, 2022

Patti Anderson
Florida Forest Service
FL Dept of Agriculture & Consumer Services
3125 Conner Boulevard, Suite I-258, Mail Stop C-25
Tallahassee, FL 32399-1650

Dear Ms. Anderson,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: Cary State Forest
Date Received: 3/11/2022
Location: Nassau County

Based on the information available, this site appears to be located in a significant region of natural areas and habitat for several rare species.

Element Occurrences

A search of our maps and database indicates that we currently have many element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data indicate federally listed species are historically present on or very near this site, specifically Eastern Indigo Snake (*Drymarchon couperi*) (see enclosed map and tables for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.

Tracking Florida's Biodiversity

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit <https://www.fnai.org/services/clip>.

Managed Areas

Portions of the site appear to be located within the Cary State Forest, managed by the FL Dept. of Agriculture and Consumer Services, Florida Forest Service.

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

Land Acquisition Projects

This site appears to be located within the Northeast Florida Timberlands and Watershed Reserve Florida Forever BOT Project, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program. For more information on this Florida Forever Project, contact the Florida Department of Environmental Protection, Division of State Lands.

Florida Forever Board of Trustees (BOT) projects are proposed and acquired through the Florida Department of Environmental Protection, Division of State Lands. The state has no specific land management authority over these lands until they are purchased.

The Inventory always 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.

Please visit www.fnai.org/species-communities/tracking-main for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this information should not be regarded as a final statement on the biological resources of

the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

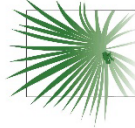
Thank you for your use of FNAI services. If I can be of further assistance, please contact me at (850) 224-8207 or at kbrinegar@fnai.fsu.edu.

Sincerely,

Kerri Brinegar

Kerri Brinegar
GIS / Data Services

Encl



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CLIP v4.0 Resource Priorities

Biodiversity Resource Category

Priority 1 - highest

Priority 2

Priority 3

Priority 4

Priority 5

Landscape Resource Category

Priority 1 - highest

Priority 2

Priority 3

Priority 4

Priority 5

Surface Water Resource Category

Priority 1 - highest

Priority 2

Priority 3

Priority 4

Priority 5

Aggregated CLIP Priorities

Priority 1 - highest

Priority 2

Priority 3

Priority 4

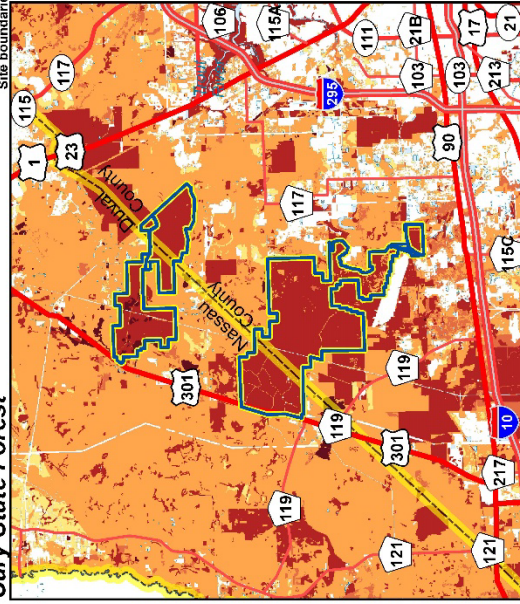
Priority 5

Site Boundary

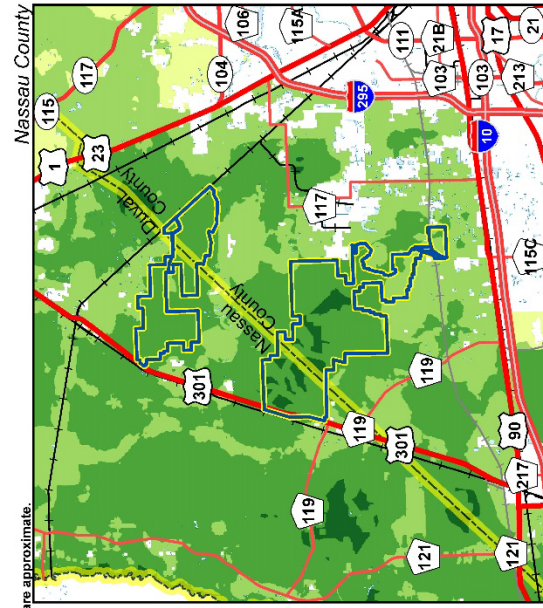
Map should not be interpreted without accompanying documents.

Critical Lands and Waters Identification Project (CLIP) is a cooperative effort between the FSU Florida Natural Areas Inventory, UF Center for Landscape Conservation Planning, and FL Fish & Wildlife Conservation Commission, with additional support from the U.S. Environmental Protection Agency and U.S. Fish & Wildlife Service.

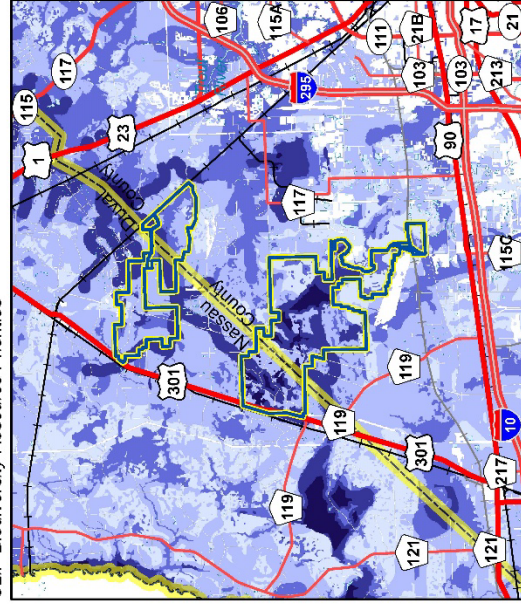
Cary State Forest



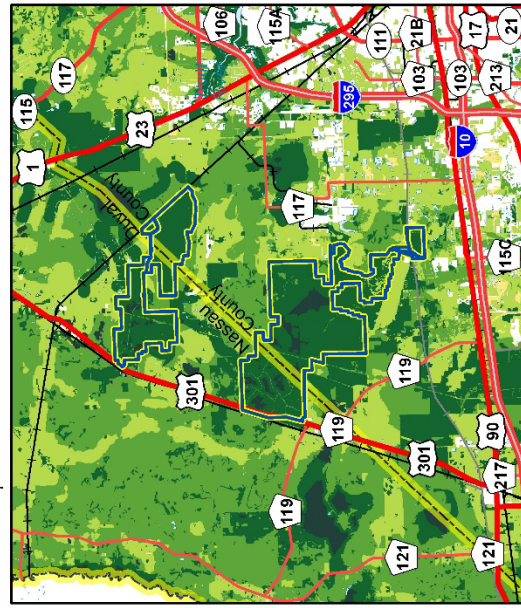
Site boundaries are approximate.



CLIP Biodiversity Resource Priorities



CLIP Landscape Resource Priorities



CLIP Aggregated Resource Priorities



Map produced by KAB
3/21/2022



Global State Federal State Observation

03/21/2022



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FNAI ELEMENT OCCURRENCE REPORT on or near Cary State Forest



Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	EO Comments
BASISWAM*62	Basin swamp		G4	S3	N	N	1996-02-26	The basin swamp is several hundred acres and long and narrow where it borders the northeast side of the base. Only about 40 acres in three discontinuous pieces are within the extreme northeast corner of the Navy property. The largest southeast piece (about 25 acres) has a diverse and dense canopy of mature trees including Taxodium ascendens, Nyssa biflora, Acer rubrum, Magnolia virginiana, Ilex myrtifolia, Ilex cassine, Persea palustris, and Pinus elliotii up to 12" DBH and 70' tall. The shrub strata has abundant Lyonia lucida (4-6'), and numerous Cyrilla racemiflora (to 6' and 30'), Myrica inodora, and Vaccinium corymbosum. The herbaceous strata is dominated by Osmunda cinnamomea, Woodwardia areolata, Woodwardia virginica, and Sphagnum. The vines Smilax laurifolia and Vitis rotundifolia are also abundant. The edge of the swamp is dry on this date. Standing water occurs in the center of the swamp where small trees of Taxodium and Nyssa and tall Lyonia (6-8') dominate (only about 10 of the 40 acres on Navy property). A shallow ditch separates the pine plantation to the west from the swamp. The planted pines intrude into the periphery of some parts of the basin swamp.
CALOMULT*55	Calopogon multiflorus	many-flowered grass-pink	G2G3	S2S3	N	T	2014-04-07	none given
CLEIDVA*5	Cleistes divaricata	large rosebud orchid	G4	S1	N	E	2010-05-14	none given
COREINTE*8	Coreopsis integrifolia	ciliate-leaf tickseed	G1G2	S1	N	E	2000-09-30	2000-09-30: In moist, semi-shaded sandy beam along edge of mesic woods (Acer, Magnolia, Pinus, and Quercus) (S00ANDFSFLUS).
								2010: total of 8 flowering plants seen at two points; 2014: a total of 298 flowering plants seen after a burn on 2/20/2014. 5 plants seen 2000-09-30: Frequent (S00ANDFSFLUS).



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Map Label	Scientific Name	Global State Federal State Observation				Common Name	Rank	Status Listing			Date	Description	EO Comments
			Rank	Rank	Status			Rank	Status	Listing			
CTENFLOR*31	<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E					2013-10-10	2005-11: mesic flatwoods with firebreaks; appears that area may have received a growing season burn in 2005 based on flowering wiregrass (PNDSUR01FLUS).	Observed in similar area in 2005 and 2013, with hundreds of vegetative plants documented in the more recent visit.
CTENFLOR*33	<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E					2012-10-09	No general description given	2 plants observed
DRYMCOU*459	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT					1996-01-18	The right-of-way is mowed several times a year. Vegetation consists of blackberry (<i>Rubus</i> sp.), <i>Aristida</i> sp., prickly pear (<i>Opuntia</i> sp.), and various grasses. A few saw palmetto (<i>Serenoa repens</i>) and oak seedlings and saplings remain. Soils include Mandarin and Arents fine sands.	1996-01-18: L. Smith found 1 shed skin in the vicinity of gopher tortoise burrows along the Whitehouse Naval Outlying Field air strip right-of-way (F96SMI02FLUS).
DRYMCOU*62	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT					1970 pre	No general description given	1970-PRE: MANSELL OBSERVED INDIGO, PROBABLY PRE-1970; (P. MOLER INTERVIEW OF 24 JAN 1981, U82MOL01FLUS).
DRYBORE* (X)32	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE					1978 circa	Mesic flatwoods	Active colony recorded circa 1978 (UNDBAK02FLUS). Not sure when woodpeckers disappeared; mature pines remain in the immediate vicinity but pine plantation is all around (aerial photography, PNDNES03FLUS, PNDMCF01FLUS).
ELANFOR*58	<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N					2007-04-03	Floodplain forest	Observed 1 bird calling (F13FNA03FLUS).
GOPHPOLY*1024	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST					1996-06-13	Airstrip right-of-way has wiregrass (<i>Aristida</i> sp.), blackberry (<i>Rubus</i> sp.), prickly-pine (<i>Opuntia</i>) and occasional saw palmetto (<i>Serenoa repens</i>). The pine plantation has 30 year old slash pine (<i>Pinus elliotii</i>), <i>Kalmia</i> sp. and dense saw palmetto. The planted pine south of the runway is more xeric.	36 adults were observed (adults and subadults) in a total of 107 burrows surveyed. Egg shell fragments were seen on several burrow aprons. Transect sampling: planted pine (north of runway) 0.23 tortoises/ha; planted pine, scrubby flatwoods (south of runway) 0.57 tortoises/ha.



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Global State Federal State			Observation			EO Comments		
Map Label	Scientific Name	Common Name	Rank	Status	Listing	Date	Description	
GOPHPOLY*1397	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2011 spring	2011-Spring: surveyed habitat is comprised of 385 acres of pine plantation; the rest of the forest includes more mesic pine plantation and wetlands (F11FNA05FLUS).
GOPHPOLY*1398	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2010 fall	2010-Fall: patchy habitat includes 50 ac. mesic flatwoods, 172 ac. sandhill, 310 ac. pine plantation, of which 43 ac. were clearcut, and 87 ac. ruderal (recently herbicided) (F11FNA05FLUS).
GOPHPOLY*1484	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	2004-05-14	open grass adjacent to air strip
HARTFLOR*2	<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T	1987-10-20	In swaley clearing of gum-sweetbay woodland (S80GOD11FLUS)
HARTFLOR*81	<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T	2020-09-29	none given
HARTFLOR*85	<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T	2018-09-18	West side of road in powerline ROW on near road and edge of ditch.
HARTFLOR*97	<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T	1999-09-12	Burned ecotone to depression swamp. Soils - Boulogne (Typic Haplaquods). (S99ORZ01FLUS)
LITHCAP*208	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N	2010-10-21	2010-10-21: pine plantation with sandhill characteristics occurs around frog location; in general, habitat includes patchily distributed 50 acres of mesic flatwoods, 172 acres of sandhill, 310 acres of pine plantation, of which 43 acres have been clearcut, and 87 acres considered ruderal (recently treated with herbicides) (F11FNA05FLUS).



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Map Label	Scientific Name	Common Name	Global State Federal State	Rank	Status	Listing	Date	Description	EO Comments
MESIFLAT*143	Mesic flatwoods		G4	S4	N	N	1996-12-20	This area is about 0.8 mi. north of the west end of the airstrip. Mature pine plantations extend to the borders of the Navy property. Basin swamps are to the east.	The north end of Whitehouse Field is mesic flatwoods with a mature slash pine plantation canopy. About 70 acres near the center is on slightly elevated ground and retains the natural shrub and ground cover strata. The canopy is exclusively planted pines (75% cover, 4-8' dbh, and 40-50' tall) except for a few mature Pinus palustris by a small dome swamp about 100' east of the north-south dirt road. The canopy east of this dome swamp is thinner than normal due to the spindly growth of the trees. No subcanopy exists. The shrub strata is dominated by abundant Serenoa repens (50% cover, 3' tall), Kalimia hirsuta (30%, 1'), Quercus minima (10%, 1-2'), and Lyonia fruticosa (5%, 2-4'). The thick ground cover is primarily grasses including Aristida stricta, Aristida rhizophora, and Sporobolus sp. Gopherus polyphemus burrows are present here. The periphery of this center area slopes very gently downward towards basin swamps and loses the well developed ground cover. The entire north end is covered by a grid of shallowditches. Logging of pines started to the north and east of this center area in April 1996.
PROGALAC*12	Progomphus alachuensis	Tawny Sanddragon	G3	S3	N	N	1982-03-22	1982-03-22: No description given (U09DEP01FLUS).	1982-03-22: This species was documented by Florida Department of Environmental Protection agency staff at two localities on three dates going back to 1979-12-06 (U09DEP01FLUS).
PTERECRI*113	Pteraglossaspis ecristata	giant orchid	G2G3	S2	N	T	2009-12-07	2009-12-07: Mowed clearing with scattered oaks (F09ELA01FLUS).	2009-12-07: One fruiting plant in clearing (F09ELA01FLUS).
PTERECRI*140	Pteraglossaspis ecristata	giant orchid	G2G3	S2	N	T	2012-08-17	not given	1 plant seen
PTERECRI*141	Pteraglossaspis ecristata	giant orchid	G2G3	S2	N	T	2012-10-06	2012-none given	A total of 15 plants seen at 3 different points in 2012.
PTERECRI*142	Pteraglossaspis ecristata	giant orchid	G2G3	S2	N	T	2012-10-11	roadside	1 plant seen
PTERECRI*162	Pteraglossaspis ecristata	giant orchid	G2G3	S2	N	T	2004-02-12	FNAI NC recorded as ruderal. Formerly sandhill and mesic flatwoods.	Observed 1 plant in leaf.



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Global State Federal State				Observation	EO Comments
Map Label	Scientific Name	Common Name	Rank	Status Listing	
RUELNOC729	<i>Ruellia noctiflora</i>	nightflowering wild petunia	G3?	S2 N E	2010-11-05: Roadside ditch (PND CAM03FLUS).
SCIUNIGE*110	<i>Saururus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3 N N	1996-11-11 The airstrip right-of-way is mowed biannually and contains a mixture of grasses (e.g. <i>Aristida</i> sp., <i>Muhlenbergia</i> , <i>Sorghastrum</i>) and low growing oaks (<i>Quercus</i> sp.) and an occasional saw palmetto (<i>Serenoa repens</i>). The surrounding pine plantation consists of +/- 30 year old slash pine (<i>Pinus elliotii</i>) and dense gallberry (<i>Ilex glabra</i>) and saw palmetto.
SCIUNIGE*207	<i>Saururus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3 N N	2005-11-17 2005-11-17: J. Surdick observed individual foraging in food plot during a natural community survey of the forest (PND SUR01FLUS).
URSUFLO95	<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4 N N	2002: 1,025-1,539 bears estimated in the primary ranges in the Ocala-St. John's region. Part of a larger population that includes Okefenokee Swamp National Wildlife Refuge in Georgia (U05SIM01FLUS). 2014: 1,198 bears estimated in the Ocala-St. John's region and 495 estimated in the Osceola region (A16HUM01FLUS). 2016: polygons created to show where bears are considered 'Abundant' and 'Common' (U16FWC01FLUS) -> Primary is the FWC-designated core area that represents breeding range and contains documented evidence of reproduction or female bears within available habitat, and Secondary is the FWC-designated area where bears occur within available habitat but outside primary bear range (evidence of bears without documented evidence of reproduction) (U12FWC02FLUS, U05SIM01FLUS). These boundaries are based on decades of bear observations, roadkill distribution, nuisance bear locations, and bear research projects. For detailed location data contact the FWC.



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Map Label	Scientific Name	Common Name	Global State Federal State			Observation Date	Description	EO Comments
			Rank	Rank	Status			
VERBHETE*36	<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E	2010-07-12	none given
VERBHETE*37	<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E	2012-06-17	none given
								3 plants seen
								1 plant seen

Florida Natural Areas Inventory

Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Documented					
Basin swamp		G4	S3	N	N
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Cleistes divaricata</i>	large rosebud orchid	G4	S1	N	E
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N
Mesic flatwoods		G4	S4	N	N
<i>Pteroglossaspis ecrinata</i>	giant orchid	G2G3	S2	N	T
<i>Ruellia noctiflora</i>	nightflowering wild petunia	G3?	S2	N	E
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E
Likely					
<i>Coreopsis integrifolia</i>	ciliate-leaf tickseed	G1G2	S1	N	E
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Mycteria americana</i>	Wood Stork	G4	S2	T	FT
Sandhill		G3	S2	N	N
Scrub		G2	S2	N	N
Upland hardwood forest		G5	S3	N	N
Potential					
<i>Agrimonia incisa</i>	incised groove-bur	G3	S2	N	T
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S1	T	FT
<i>Amoglossum diversifolium</i>	variable-leaved Indian-plantain		S2	N	T
<i>Asclepias viridula</i>	southern milkweed		S2	N	T
<i>Balduina atropurpurea</i>	purple honeycomb-head		S1	N	E
<i>Calydorea coelestina</i>	Bartram's ixia	G2G3	S2S3	N	E
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S1	N	N
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Linum westii</i>	West's flax	G1	S1	N	E
<i>Litsea aestivalis</i>	pondspice	G3?	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Neovison vison lutensis</i>	Atlantic Salt Marsh Mink	G5T3	S3	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C
<i>Orbexilum virgatum</i>	pineland scurfpea	G1	S1	N	E
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Podomys floridanus</i>	Florida Mouse		S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint		S3	N	T
<i>Rhynchospora thornei</i>	Thorne's beaksedge		S1S2	N	N
<i>Rudbeckia nitida</i>	St. John's blackeyed susan		S2	N	E
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
<i>Uvularia floridana</i>	Florida merrybells	G3	S1	N	E

Definitions: Documented - Rare species and natural communities documented on or near this site.
 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
 Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
 Potential - This site lies within the known or predicted range of the species listed.



Florida Natural Areas Inventory

Managed Area Element Summary

Cary State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS					
<i>Balduina atropurpurea</i>	purple honeycomb-head	G2	S1	N	E
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Cleistes divaricata</i>	large rosebud orchid	G4	S1	N	E
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Hartwrightia floridana</i>	hartwrightia	G2	S2	N	T
<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T
<i>Ruellia noctiflora</i>	nightflowering wild petunia	G3?	S2	N	E
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E
AMPHIBIANS					
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N
REPTILES					
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
BIRDS					
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
MAMMALS					
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2** = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- G4** = Apparently secure globally (may be rare in parts of range).
- G5** = Demonstrably secure globally.
- GH** = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
- GX** = Believed to be extinct throughout range.
- GXC** = Extirpated from the wild but still known from captivity or cultivation.
- G#?** = Tentative rank (e.g., G2?).
- G#G#** = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
- G#T#** = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
- G#Q** = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
- G#T#Q** = Same as above, but validity as subspecies or variety is questioned.
- GU** = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
- GNA** = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR** = Element not yet ranked (temporary).
- GNRTNR** = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

- S1** = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2** = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3** = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- S4** = Apparently secure in Florida (may be rare in parts of range).
- S5** = Demonstrably secure in Florida.
- SH** = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
- SX** = Believed to be extirpated throughout Florida.
- SU** = Unrankable; due to a lack of information no rank or range can be assigned.
- SNA** = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- SNR** = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

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.

E = Endangered: species in danger of extinction throughout all or a significant portion of its range.

E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas

E, PDL = Species currently listed endangered but has been proposed for delisting.

E, PT = Species currently listed endangered but has been proposed for listing as threatened.

E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.

T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

PE = Species proposed for listing as endangered

PS = Partial status: some but not all of the species' infraspecific taxa have federal

PT = Species proposed for listing as threatened

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service

FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service

FXN = 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 FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)

N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.

E = 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.

T = 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.

N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: <http://www.natureserve.org/explorer/eorankguide.htm>

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

Exhibit M

Florida Fish and Wildlife Conservation Commission Listed Species Occurrence Records



**Florida Fish
and Wildlife
Conservation
Commission**

Commissioners
Rodney Barreto
Chairman
Coral Gables

Michael W. Sole
Vice Chairman
Tequesta

Steven Hudson
Fort Lauderdale

Gary Lester
Oxford

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Robert A. Spottswood
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Executive Staff
Eric Sutton
Executive Director

Thomas H. Eason, Ph.D.
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

Fish and Wildlife
Research Institute
Gil McRae
Director

727-896-8626
727-823-0166 FAX

*Managing fish and wildlife
resources for their long-term
well-being and the benefit
of people.*

**Fish and Wildlife
Research Institute**
100 Eighth Avenue SE
St. Petersburg, Florida
33701-5020
Voice: (727) 896-8626
Fax: (727) 823-0166
Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com/Research

March 17, 2022

Patti Anderson
Land Management Planner
Florida Forest Service

Dear Patti:

This letter is in response to your request for listed species occurrence records and critical habitats for your project (Cary State Forest) located in Nassau and Duval County, Florida. Records from The Florida Fish and Wildlife Conservation Commission's database indicate that listed species occurrence data and critical habitats are located within the project area. Records of Southeastern squirrel fox, Red Cockaded woodpecker, purple honeycomb-head, many-flowered grass-pink, giant orchid, variable-leaf crownbeard, Florida toothache grass, gopher tortoise and Night-flowering wild petunia were found on, or within a 1-mile distance of, the property. The Florida Fish and Wildlife Conservation Commission's database indicates that no SHCA's occur within a reasonable distance of the property. Enclosed are 8.5 x 11 maps showing, species richness, priority wetlands for listed species, and land cover for the project site and surrounding area.

This letter and attachments should not be considered as a review or an assessment of the impact upon threatened or endangered species of the project site. It provides FWC's most current data regarding the location of listed species and their associated habitats.

Our SHCA recommendations are intended to be used as a guide. Land development and ownership in Florida is ever-changing and priority areas identified as SHCA might already have been significantly altered due to development or acquired into public ownership. Onsite surveys, literature reviews, and coordination with FWC biologists remain essential steps in documenting the presence or absence of rare and imperiled species and habitats within the project area.

Our fish and wildlife location data represents only those occurrences recorded by FWC staff and other affiliated researchers. It is important to understand that our database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species, such as gopher tortoises, are not entered into our database on a site-specific basis.

Therefore, one should not assume that an absence of occurrences in our database indicates that species of significance do not occur in the area.

The Florida Natural Areas Inventory (FNAI) maintains a separate database of listed plant and wildlife species, please contact FNAI directly for specific information on the location of element occurrences within the project area.

Patti Anderson
Page 2
March 17th, 2021

Because FNAI is funded to provide information to public agencies only, you may be required to pay a fee for this information. County-wide listed species information can be located at their website (<http://www.fnai.org>).

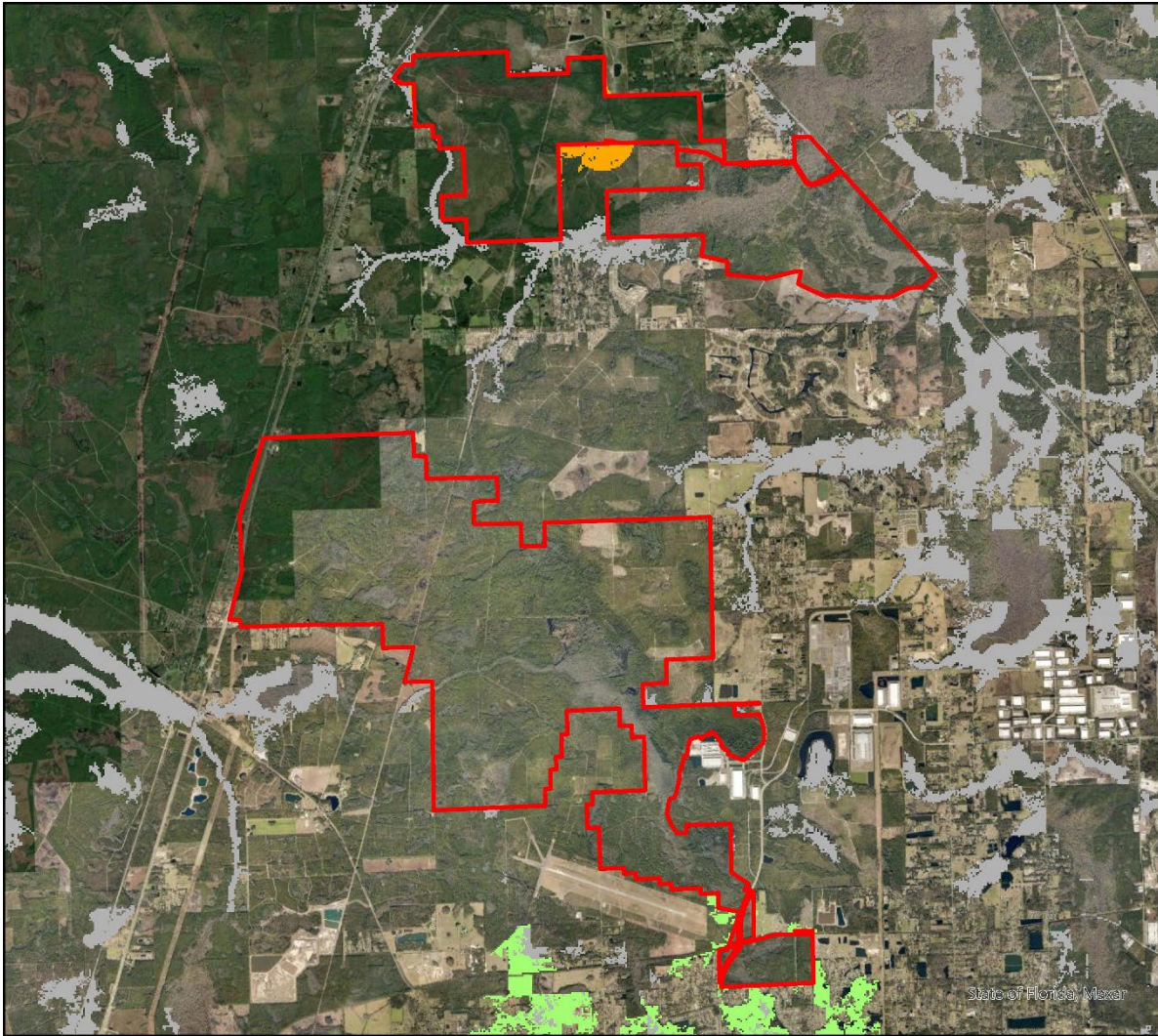
Please credit the Florida Fish and Wildlife Conservation Commission in any publication or presentation of these data. If you have any questions or further requests, please contact me at (850) 488-0588 or gisrequests@myfwc.com.

Sincerely,

Steven Nicholl

Steven Nicholl

Environmental Specialist I/GIS Technician
Center for Spatial Analysis
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, FL 33701
727-502-4970



Prioritized SHCA's



 Approximate site boundary and 1-mile buffer



Cary State Forest

The prioritized SHCA map identifies 5 classes of SHCA based upon Heritage ranking criteria developed by The Nature Conservancy, the Natural Heritage Program Network, and the Florida Natural Areas Inventory. There are 2 possible ranks used to prioritize a species' SHCA: 1) the global rank based on a species worldwide status, and 2) the state rank based upon the species status in Florida. The state and global ranks are based upon many factors such as known occurrence locations, estimated abundance, range, amount of habitat currently protected, perceived levels of threats towards the species, and ecological fragility.



Priority Wetlands

- 1-3 Species, Wetlands habitat
- 4-6 Species, Wetlands habitat
- 7-9 Species, Wetlands habitat
- 10-11 Species, Wetlands habitat

Approximate site boundary and 1-mile buffer

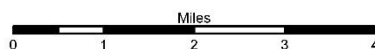


Cary State Forest

This raster dataset identifies Florida wetlands important to wetland-dependent vertebrates listed by the State of Florida as endangered, threatened, or species of special concern. The dataset also ranks the relative importance of wetland areas based on species richness of the selected vertebrate species.

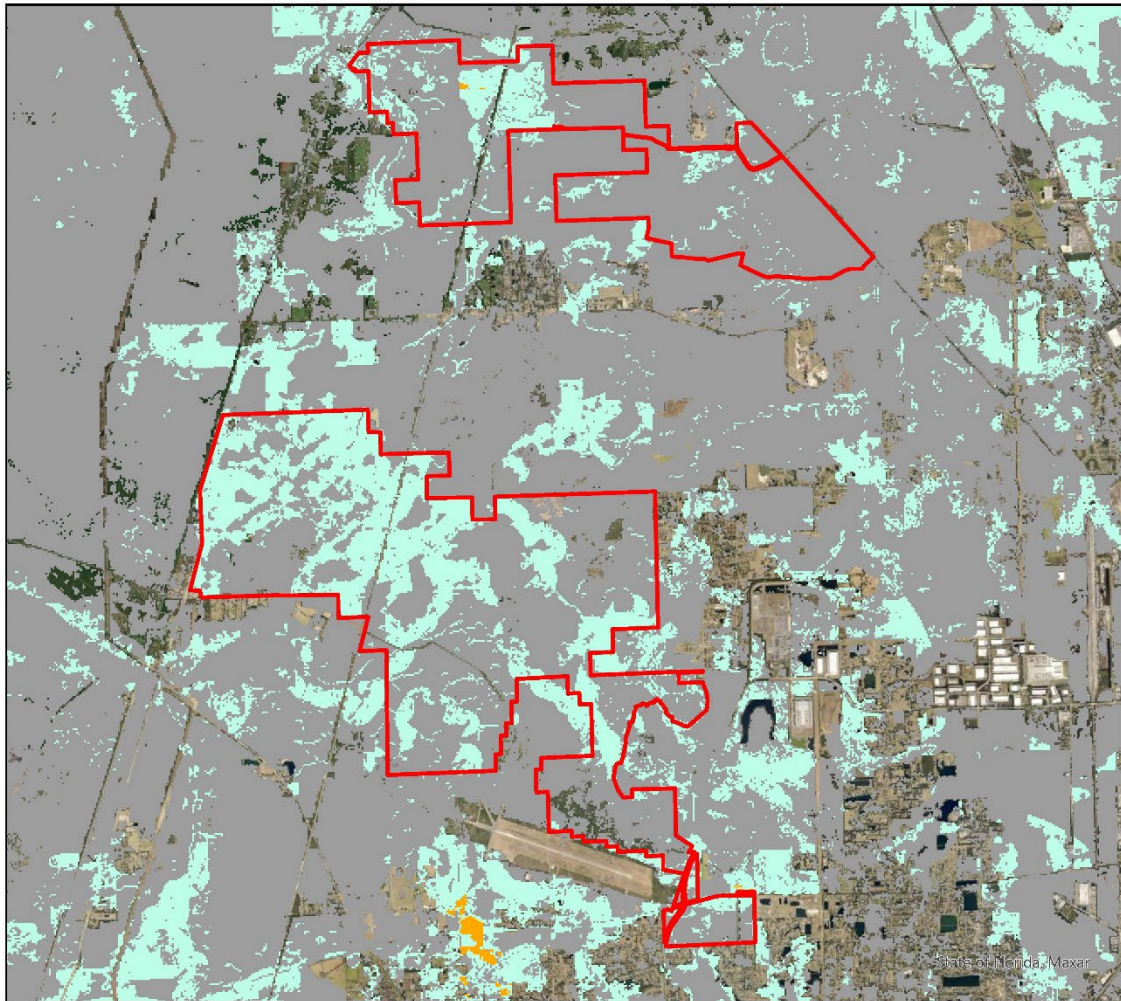


Florida Fish and Wildlife
Conservation Commission
MyFWC.com

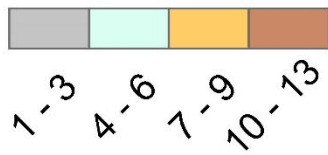


FWC ID: 2022_6547

March 11, 2022



Species Richness



 Approximate site boundary and 1-mile buffer



Cary State Forest

This dataset represents the richness of potential habitat for selected focal species in Florida. Potential habitat includes areas that have been occupied by the species and areas where occupancy is unknown based on available occurrence records. We combined the potential habitats generated for Florida into a single grid layer indicating diversity. Pixel cell value indicates the total number of species potential habitat identified at the specific location.



Florida Fish and Wildlife
Conservation Commission
MyFWC.com



FWC ID: 2022_6547

March 11, 2022

Exhibit N

Eleven-Year Fire History

Cary State Forest Burn Acres by Fiscal Year

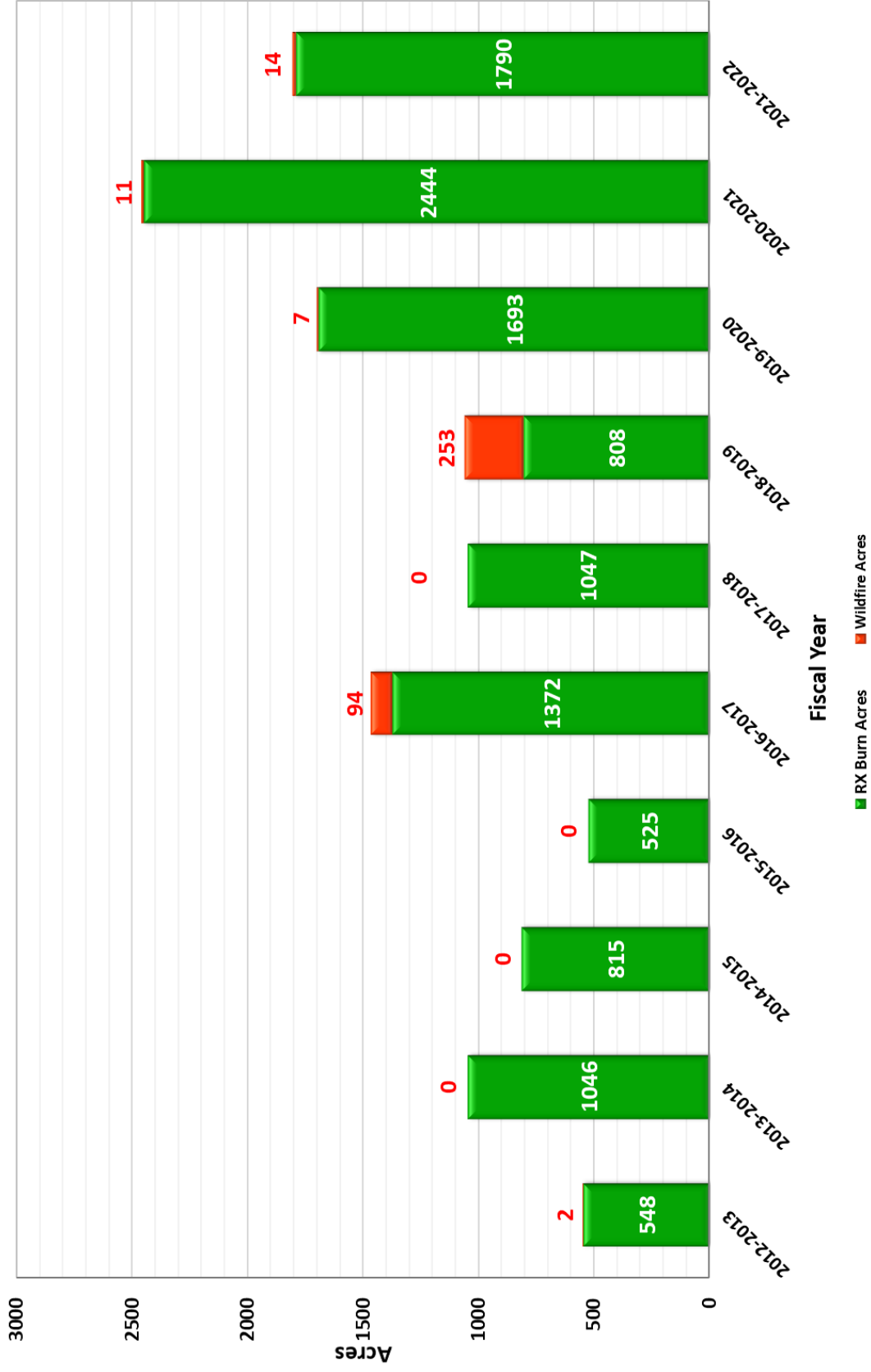


Exhibit O

Invasive Species Map



Florida Forest Service

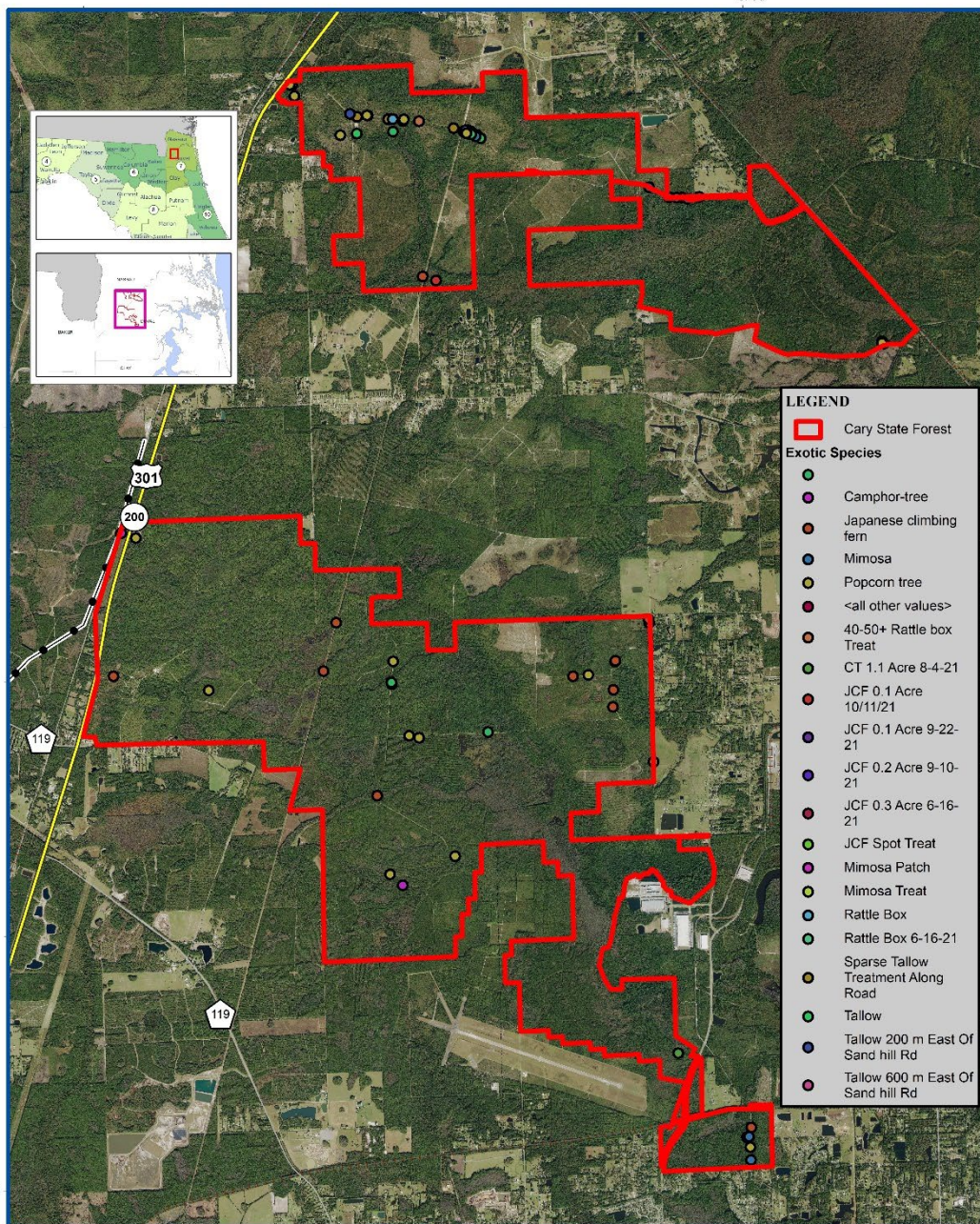
Cary State Forest

Non-Native Invasive Species Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

NOTES:
This map was prepared by the Florida Forest Service
and is for informational purposes only. It is not intended to
be used for legal or regulatory purposes. The Florida Forest
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Map Date: 07/2022
Map Title: Cary State Forest Non-Native Invasive Species Map
Map Scale: 1:50,000
Map Author: Florida Forest Service



LEGEND

- Cary State Forest
- Exotic Species**
- Camphor-tree
- Japanese climbing fern
- Mimosa
- Popcorn tree
- <all other values>
- 40-50+ Rattle box Treat
- CT 1.1 Acre 8-4-21
- JCF 0.1 Acre 10/11/21
- JCF 0.1 Acre 9-22-21
- JCF 0.2 Acre 9-10-21
- JCF 0.3 Acre 6-16-21
- JCF Spot Treat
- Mimosa Patch
- Mimosa Treat
- Rattle Box
- Rattle Box 6-16-21
- Sparse Tallow Treatment Along Road
- Tallow
- Tallow 200 m East Of Sand hill Rd
- Tallow 600 m East Of Sand hill Rd

0.5 0.25 0 0.25 0.5 1 Miles



Map Month/Year: July 2022

0 500 1,000 1,500 2,000 2,500 Feet

Exhibit P

Current FNAI Natural Communities Map



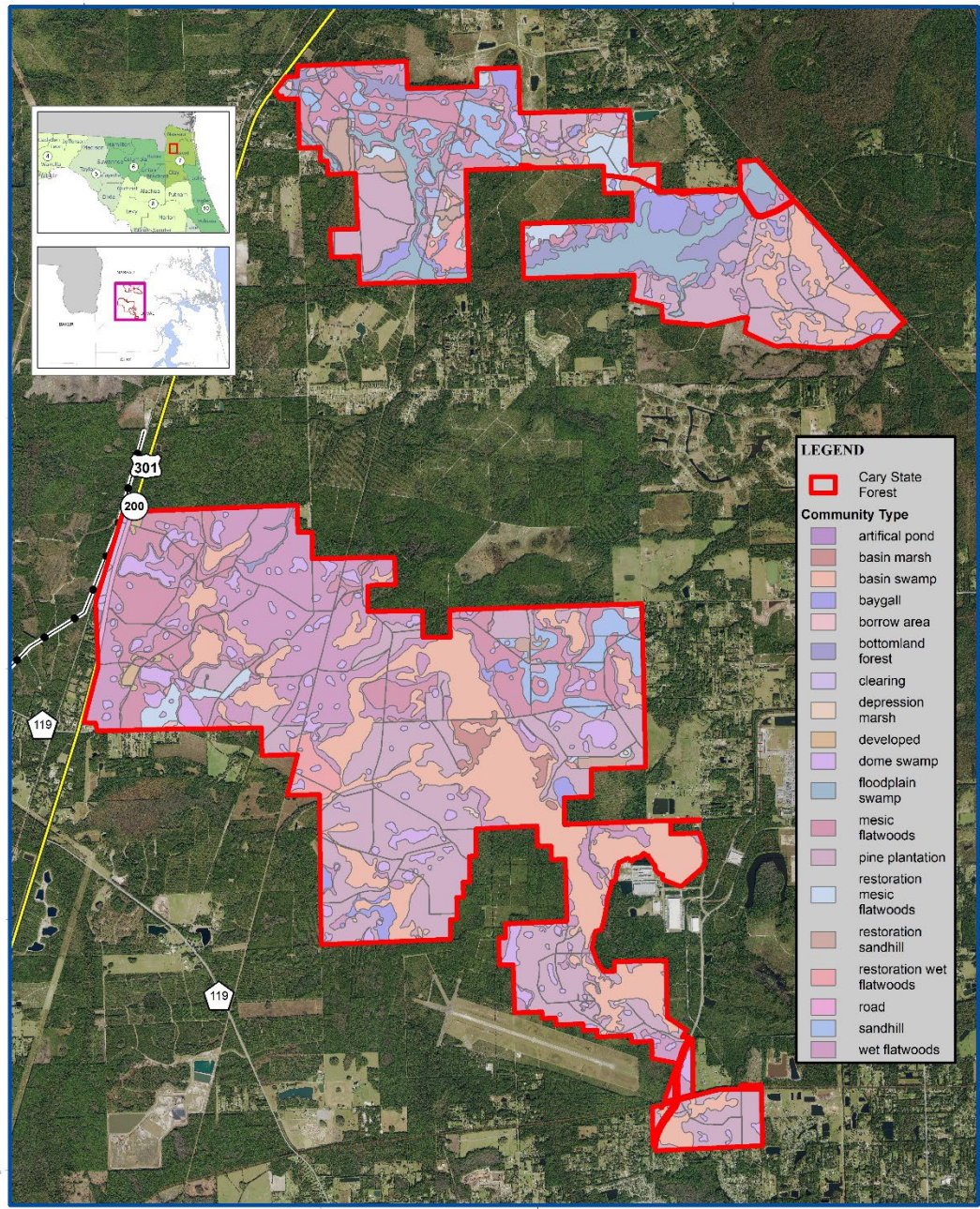
Florida Forest Service

Cary State Forest

Current FNAI Natural Communities and Cover Type Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

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LEGEND

- Cary State Forest
- Community Type
 - artificial pond
 - basin marsh
 - basin swamp
 - baygall
 - borrow area
 - bottomland forest
 - clearing
 - depression marsh
 - developed
 - dome swamp
 - floodplain swamp
 - mesic flatwoods
 - pine plantation
 - restoration mesic flatwoods
 - restoration sandhill
 - restoration wet flatwoods
 - road
 - sandhill
 - wet flatwoods

0.5 0.25 0 0.5 1 Miles



Map Month/Year: March 2022

1,000 500 0 1,000 2,000 3,000 Feet

Exhibit Q

Historic FNAI Natural Communities Map



Florida Forest Service

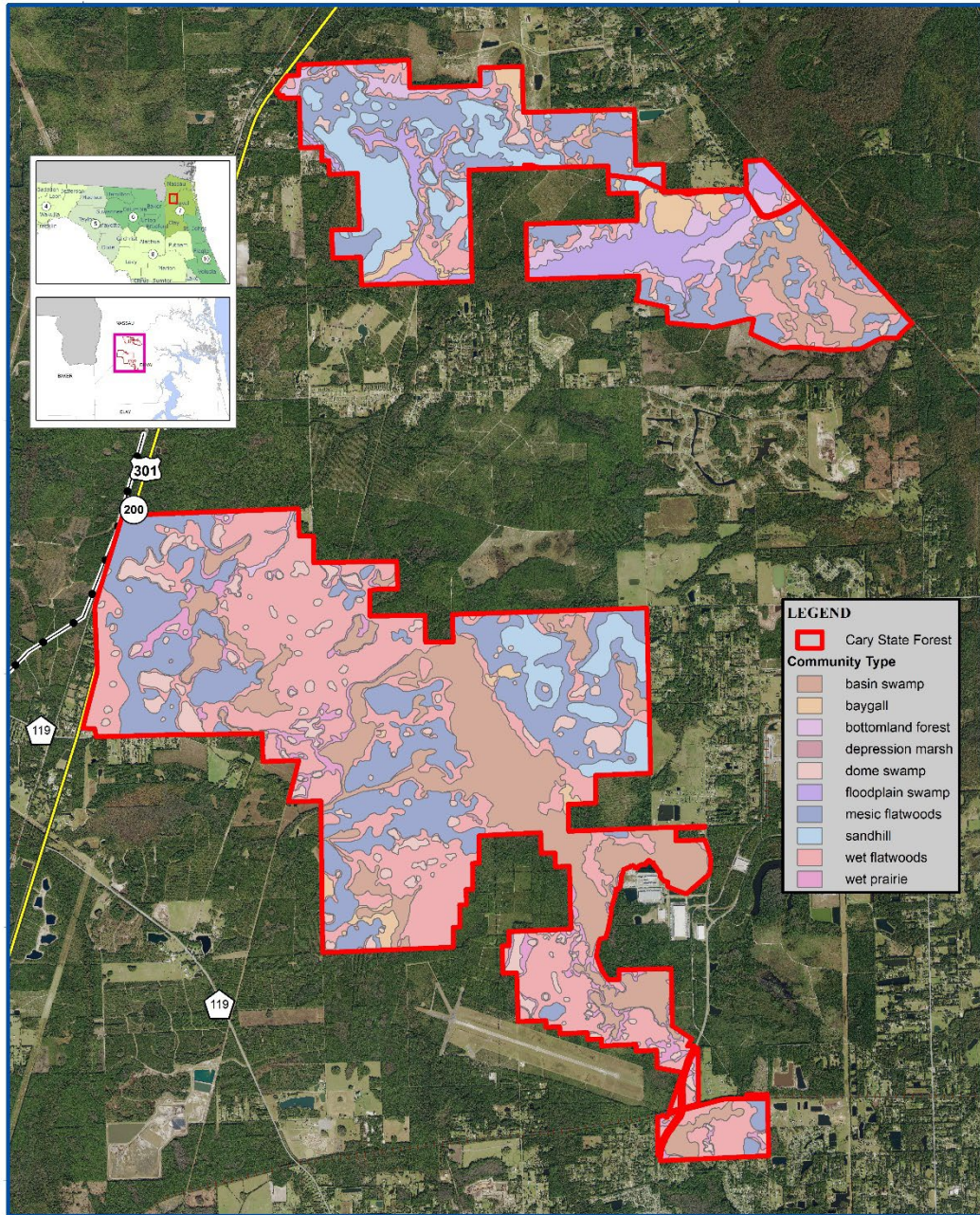
Cary State Forest

Historic FNAI Natural Communities Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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and is not intended to be used for any purpose other than
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Florida Forest Service is not responsible for any errors or
omissions in this map.

**FOREST AREA LOCATED IN SECTION 36
T15N R10E S10E, ALACHUA COUNTY, FLORIDA
Paved Road Section 36, T15N R10E S10E
From the US Army Corps of Engineers**



LEGEND

- Cary State Forest
- Community Type**
- basin swamp
- baygall
- bottomland forest
- depression marsh
- dome swamp
- floodplain swamp
- mesic flatwoods
- sandhill
- wet flatwoods
- wet prairie

0.5 0.25 0 0.5 1
Miles



Map Month/Year: March 2022

0 500 1,000 1,500 2,000 2,500
feet

Exhibit R

Land Management Reviews (2012, 2017 & 2022)

Name of Site: Cary SF

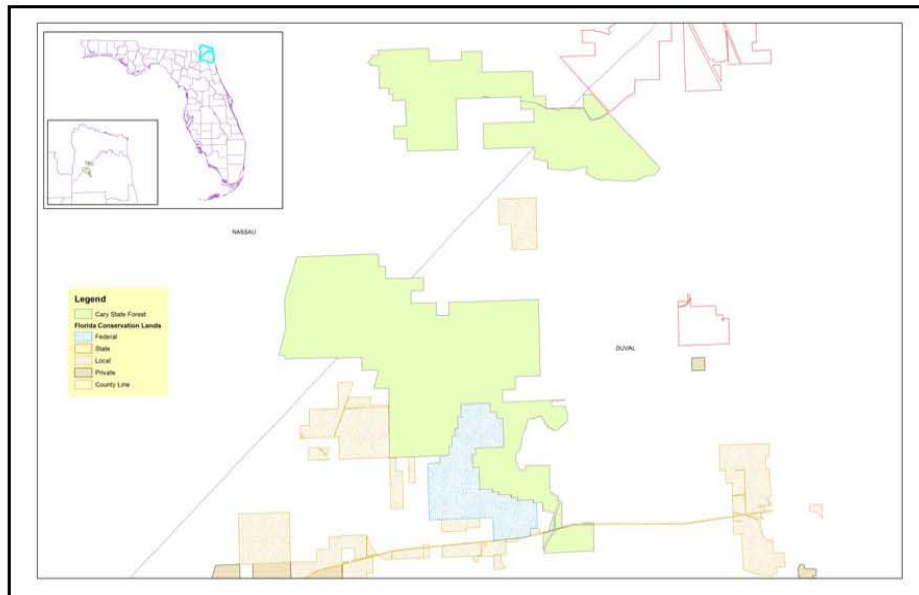
County: Duval/Nassau

Managed by: Department of Agriculture and Consumer Services
Florida Forest Service

Acres: 11,911.27
Area Reviewed: Entire tract

Review Date: 10/25/12

Management Plan Approval Date: 11/16/07



Review Team Determination

Managed in accordance with
Acquisition purpose? Yes =6, No = 0



Management practices, including public access,
in compliance with the management plan? Yes =6, No = 0



Categories	Management Plan Review	Field Review
Natural Communities	1.00	3.99
Listed Species	1.00	4.08
Natural Resource Survey	0.97	3.97
Cultural Resources	1.00	4.00
Prescribed Fire	1.00	4.22
Restoration	1.00	4.60
Exotic Species	1.00	4.61
Hydrology	1.00	4.25
Groundwater Monitoring	1.00	3.73
Resource Protection	1.00	3.58
Adjacent Property Concerns	0.83	4.28
Public Access & Education	1.00	4.13
Management Resources	N/A	3.92
Managed Area Uses	1.00	N/A
Buildings, Equipment, Staff & Funding	N/A	3.25

Consensus Commendations to the Managing Agency

The following commendations resulted from discussion and vote of the review team members.

1. The team commends the FFS staff on the restoration of previously clearcut areas using adaptive methods that are tailored to site-specific soils, elevation and vegetation conditions as well as listed species occurrences. (VOTE: 6+, 0-)

★★★★★★

2. The team commends the FFS staff on their close collaboration with volunteers from the Florida Native Plant Society and other organizations to develop a database for compiling species inventories and specifically for documenting occurrences of listed plant and animal species such that management decisions and public education opportunities can take these into consideration. (VOTE: 6+, 0-)

★★★★★★

3. The team commends the FFS staff for their efforts to implement thinning and burning in pine plantation sites that have done much to bring these stands into their desired condition. (VOTE: 6+, 0-)

★★★★★★

4. The team commends the FFS staff for their aggressive efforts to restore degraded sandhill (i.e. reintroduce fire, reduce hardwoods and planting longleaf pine. (VOTE: 6+, 0-)

★★★★★★

5. The team commends the FFS staff for their in-depth assessment of ephemeral wetland (i.e. depression marsh) in flatwoods during timber management planning and planting. (VOTE: 6+, 0-)

★★★★★★

6. The team commends the FFS staff on efforts control and monitor invasive plants on the property. (VOTE: 6+, 0-)

★★★★★★

7. The team commends the FFS for their proactive cooperation with FWC regarding hunter access issues. (VOTE: 6+, 0-)

★★★★★★

8. The team commends the FFS staff for extensive preparation and presentation of forest resources materials for the land management review. (VOTE: 6+, 0-)

★★★★★★

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The management plan must include responses to the recommendations identified below.

1. The team recommends that staff reach out to available agencies or groups, such as FNAI and FWC, to ask for assistance with imperiled invertebrate and amphibian assessments. (VOTE: 6+, 0-)

★★★★★★

Managing Agency Response:

2. The team recommends that staff continue to closely follow external development pressures that might cause degradation to natural resources of the property. (VOTE: 6+, 0-)

★★★★★★

Managing Agency Response:

Field Review Checklist Findings

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

- Natural Communities, regarding mesic flatwoods, wet flatwoods, dome swamp, baygall, basin swamp, bottomland forest, flood plain swamp and basin marsh.
- Listed Species, regarding animal and plant inventory.
- Natural Resources, regarding listed species or habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey/monitoring.
- Cultural Resources, regarding the cultural resource survey and protection and preservation.
- Resource Management, Prescribed Fire, regarding area being burned (no. acres), frequency and quality.
- Restoration of Ruderal Areas, regarding degraded sandhill and basin swamp restoration.
- Forest Management, regarding timber inventory, timber harvesting, reforestation/afforestation and site preparation
- Non-native, Invasive and Problem Species, regarding the prevention and control of plants, animals and pests/pathogens.
- Hydrologic/Geologic Function, regarding roads/culverts and ditches.
- Ground/Surface Water Monitoring, regarding the water quality and quantity.
- Resource Protection, regarding boundary surveys.
- Adjacent Property Concerns, regarding expanding development, US 301 road widening and inholdings /additions.
- Public Access & Education, regarding roads and parking.
- Environmental Education & Outreach, regarding wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities and management of visitor impacts.
- Management Resources Maintenance, regarding waste disposal and sanitary facilities.
- Infrastructure, regarding equipment and funding..

Items Requiring Improvement Actions in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than .5 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

- 1. The review team average score indicates a need for acknowledgement of adjacent property concerns, specifically US 301 road widening. Please provide documentation in the management plan.**

Managing Agency Response:

PLAN REVIEW		1	2	3	4	5	6	AVERAGE
Natural Communities (I.A)								
Mesic Flatwoods	I.A.1	1	1	1	1	1	1	1.00
Wet Flatwoods	I.A.2	1	1	1	1	1	1	1.00
Dome Swamp	I.A.3	1	1	1	1	1	1	1.00

Baygall	I.A.4	1	1	1	1	1	1	1.00
Basin Swamp	I.A.5	1	1	1	1	1	1	1.00
Sandhill	I.A.6	1	1	1	1	1	1	1.00
Bottomland forest	I.A.7	1	1	1	1	1	1	1.00
Flood Plain Swamp	I.A.8	1	1	1	1	1	1	1.00
Basin Marsh	I.A.9	1	1	1	1	1	1	1.00
Depression Marsh	I.A.10	1	1	1	1	1	1	1.00
Listed species:Protection & Preservation (I.B)								
Animal Inventory	I.B.1	1	1	1	1	1	1	1.00
Plant Inventory	I.B.2	1	1	1	1	1	1	1.00
Natural Resources Survey/Management Resources (I.C)								
Listed species or habitat monitoring	I.C.2	1	1	1	1	1	1	1.00
Other non-game species or habitat monitoring	I.C.3	1	1	1	1	1	1	1.00
Fire effects monitoring	I.C.4	1	1	1	1	1	0	0.83
Other habitat management effects monitoring	I.C.5	1	1	1	1	1	1	1.00
Invasive species survey / monitoring	I.C.6	1	1	1	1	1	1	1.00
Cultural Resources (Archeological & Historic sites) (II.A,II.B)								
Cultural Res. Survey	II.A	1	1	1	1	1	1	1.00
Protection and preservation	II.B	1	1	1	1	1	1	1.00
Resource Management, Prescribed Fire (III.A)								
Area Being Burned (no. acres)	III.A.1	1	1	1	1	1	1	1.00
Frequency	III.A.2	1	1	1	1	1	1	1.00
Quality	III.A.3	1	1	1	1	1	1	1.00
Restoration of Ruderal Areas (III.B)								
Degraded Sandhill	III.B.1	1	1	1	1		1	1.00
Basin Swamp Restoration	III.B.2	1	1	1	1		1	1.00
Forest Management (III.C)								
Timber Inventory	III.C.1	1	1	1	1	1	1	1.00
Timber Harvesting	III.C.2	1	1	1	1	1	1	1.00
Reforestation/Afforestation	III.C.3	1	1	1	1	1	1	1.00
Site Preparation	III.C.4	1	1	1	1	1	1	1.00
Non-Native, Invasive & Problem Species (III.E)								
Prevention								
prevention - plants	III.E.1.a	1	1	1	1	1	1	1.00
prevention - animals	III.E.1.b	1	1	1	1	1	1	1.00
prevention - pests/pathogens	III.E.1.c	1	1	1	1	1	1	1.00
Control								
control - plants	III.E.2.a	1	1	1	1	1	1	1.00
control - animals	III.E.2.b	1	1	1	1	1	1	1.00
control - pest/pathogens	III.E.2.c	1	1	1	1	1	1	1.00

Hydrologic/Geologic function Hydro-Alteration (III.F.1)								
Roads/culverts	III.F.1.a	1	1	1	1	1	1	1.00
Ditches	III.F.1.b	1	1	1	1	1		1.00
Ground Water Monitoring (III.F.2)								
Ground water quality	III.F.2.a	1		1	1	1	1	1.00
Ground water quantity	III.F.2.b	1	1	1	1	1	1	1.00
Surface Water Monitoring (III.F.3)								
Resource Protection (III.G)								
Boundary survey	III.G.1	1	1	1	1	1	1	1.00
Gates & fencing	III.G.2	1	1	1	1	1	1	1.00
Signage	III.G.3	1	1	1	1	1	1	1.00
Law enforcement presence	III.G.4	1	1	1	1	1	1	1.00
Adjacent Property Concerns (III.H)								
Land Use								
Expanding development	III.H.1.a	1	1	1	1	0	1	0.83
US 301 Road Widening	III.H.1.b	0	0	1	1	0	0	0.33
Inholdings/additions	III.H.2	1	1	1	1	1	1	1.00
Discussion of Potential Surplus Land Determination	III.H.3	1	1	1	1	1	1	1.00
Surplus Lands Identified?	III.H.4	1	1	1	1	1	1	1.00
Public Access & Education								
Public Access								
Roads	IV.1.a	1	1	1	1	1	1	1.00
Parking	IV.1.b	1	1	1	1	1	1	1.00
Environmental Education & Outreach								
Wildlife	IV.2.a	1	1	1	1	1	1	1.00
Invasive Species	IV.2.b	1	1	1	1	1	1	1.00
Habitat Management Activities	IV.2.c	1	1	1	1	1	1	1.00
Interpretive facilities and signs	IV.3	1	1	1	1		1	1.00
Recreational Opportunities	IV.4	1	1	1	1		1	1.00
Management of Visitor Impacts	IV.5	1	1	1	1		1	1.00
Managed Area Uses								
Existing Uses								
Hiking	VI.A.1	1	1	1	1	1	1	1.00
Nature Study	VI.A.2	1	1	1	1	1	1	1.00
Forest Education	VI.A.3	1	1	1	1	1	1	1.00
Horseback Riding	VI.A.4	1	1	1	1	1	1	1.00
Bicycling	VI.A.5	1	1	1	1	1	1	1.00
Camping	VI.A.6	1	1	1	1	1	1	1.00
Hunting	VI.A.7	1	1	1	1	1	1	1.00
Silviculture	VI.A.8	1	1	1	1	1	1	1.00

Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 2.5 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. The review team average score indicates a need for acknowledgement of natural communities, specifically sandhill. Please provide documentation in the management plan.

Managing Agency Response:

FIELD REVIEW		1	2	3	4	5	6	AVERAGE
Natural Communities (I.A)								
Mesic Flatwoods	I.A.1	5	4	4	3	4	4	4.00
Wet Flatwoods	I.A.2	4	4	4	3	4	4	3.83
Dome Swamp	I.A.3	5	5	5	3	4	4	4.33
Baygall	I.A.4	4	5	5	5	4	5	4.67
Basin Swamp	I.A.5	3	4	5	3	4	3	3.67
Sandhill	I.A.6	3	2	4	2	2	2	2.50
Bottomland forest	I.A.7	5	4	5	5	5	5	4.83
Flood Plain Swamp	I.A.8	4	5	5	5	5	5	4.83
Basin Marsh	I.A.9	4	4	5	2	4	4	3.83
Depression Marsh	I.A.10	3	X	5	2	4	3	3.40
Listed species:Protection & Preservation (I.B)								
Animal Inventory	I.B.1	3	4	5	4	4	4	4.00
Plant Inventory	I.B.2	3	4	5	4	4	5	4.17
Natural Resources Survey/Management Resources (I.C)								
Listed species or habitat monitoring	I.C.2	3	5	4	3		5	4.00
Other non-game species or habitat monitoring	I.C.3	3	2	4	3	3	4	3.17
Fire effects monitoring	I.C.4	5	3	5	4	3	3	3.83
Other habitat management effects monitoring	I.C.5	5	4	5	4	3	4	4.17
Invasive species survey / monitoring	I.C.6	4	5	5	5	4	5	4.67
Cultural Resources (Archeological & Historic sites) (II.A,II.B)								
Cultural Res. Survey	II.A	3	4	4	5	4	4	4.00
Protection and preservation	II.B	3	5	4	5	3	4	4.00
Resource Management, Prescribed Fire (III.A)								
Area Being Burned (no. acres)	III.A1	3	3	5	4	3	4	3.67

Frequency	III.A.2	4	4	5	5	3	4	4.17
Quality	III.A.3	5	5	5	5	4	5	4.83
Restoration of Ruderal Areas (III.B)								
Degraded Sandhill	III.B.1	4	4	5	5		4	4.40
Basin Swamp Restoration	III.B.2	3	3	4	3		3	3.20
Forest Management (III.C)								
Timber Inventory	III.C.1	5	5	5	5	5	5	5.00
Timber Harvesting	III.C.2	5	5	5	5	5	5	5.00
Reforestation/Afforestation	III.C.3	5	5	5	5	5	5	5.00
Site Preparation	III.C.4	5	5	5	5	5	5	5.00
Non-Native, Invasive & Problem Species (III.E)								
Prevention								
prevention - plants	III.E.1.a	4	5	5	5	5	4	4.67
prevention - animals	III.E.1.b	4	5	5	5	5	4	4.67
prevention - pests/pathogens	III.E.1.c	4	X	5	5	5	3	4.40
Control								
control - plants	III.E.2.a	4	5	5	5	5	5	4.83
control - animals	III.E.2.b	4	5	5	5	5	4	4.67
control - pest/pathogens	III.E.2.c	4	X	5	5	5	3	4.40
Hydrologic/Geologic function Hydro-Alteration (III.E.1)								
Roads/culverts	III.F.1.a	4	4	5	5	4	5	4.50
Ditches	III.F.1.b	3	5	5	5	2		4.00
Ground Water Monitoring (III.F.2)								
Ground water quality	III.F.2.a	3		4	5	3	4	3.80
Ground water quantity	III.F.2.b	3	3	4	5	3	4	3.67
Surface Water Monitoring (III.E.3)								
Resource Protection (III.F)								
Boundary survey	III.G.1	3	4	4	5	4	5	4.17
Gates & fencing	III.G.2	3	4	4	5	4	4	4.00
Signage	III.G.3	3	3	4	5	3	3	3.50
Law enforcement presence	III.G.4	1	3	4	2	3	3	2.67
Adjacent Property Concerns (III.G)								
Land Use								
Expanding development	III.H.1.a	3	4	5	5	4	4	4.17
US 301 Road Widening	III.H.1.b	3	4	5	5	4	5	4.33
Inholdings/additions	III.H.2	4	4	5	5	4	4	4.33
Public Access & Education								
Public Access								
Roads	IV.1.a	5	4	5	5	4	4	4.50
Parking	IV.1.b	3	4	4	4	4	4	3.83
Environmental Education & Outreach								
Wildlife	IV.2.a	3	4	5	5	4	4	4.17

Invasive Species	IV.2.b	3	4	4	5	3	4	3.83
Habitat Management Activities	IV.2.c	3	4	5	5	4	4	4.17
Interpretive facilities and signs	IV.3	3	3	5	5	4	4	4.00
Recreational Opportunities	IV.4	4	3	5	5	4	4	4.17
Management of Visitor Impacts	IV.5	4	4	5	5	4	4	4.33
Management Resources								
Maintenance								
Waste disposal	V.1.a	3	4	4	5	3	4	3.83
Sanitary facilities	V.1.b	3	4	4	5	4	4	4.00
Infrastructure								
Buildings	V.2.a	3	3	4	2	4	3	3.17
Equipment	V.2.b	3	3	4	5	3	4	3.67
Staff	V.3	3	3	4	2	2	2	2.67
Funding	V.4	3	4	4	4	3	3	3.50

Florida Forest Service Manager and Key Staff Present:

- Devon McFall, Forester
- Bruce Hill, Center Manager
- Todd Knapp
- Pat Deren

APPENDIX:

The following comments represent individual comments, and may not represent the consensus of the land management review team.

I.A. Natural Communities

- Commend efforts on restoring natural communities to maintenance conditions.
- Cary State Forest burning activity for exceeds the burning frequencies on private lands in NE Florida-fire can be safely used on any upland area in this forest.
- Lots of good plantings in disturbed sandhills including hardwood removal. Just need more burning and time. Identify any new natural communities that might not yet be known. Such as upland mixed woodland (Red Oak) & depression marshes in flatwoods.
- Four month old mgt. plan does thorough job of describing conditions, mgt. needs for each community. The mesic throughout the Cary tract flatwoods (the majority of the unaltered mesic flatwood occur on this tract) looked excellent with many areas of mature longleaf and slash pine timber. All sites appeared to be routinely burned and appropriately thinned to maintain desired densities. Ground cover was diverse with good balance of woody structure (palmetto, gallberry, etc.) and herbaceous grass cover. Overall, the Cary tract, as it related to its stand and ecotone conditions is in as best condition as I've seen it, thanks to recent efforts to increase fire frequencies and to burn into wetland transition zones (ecotones). The mesic and wet flatwoods are in tracts purchased much more recently were largely managed as industrial pine plantations by the previous landowners. Until further thinning and burning can be done to reduce densities, it is unclear how much will have sufficient native groundcover to be returned to a natural maintenance condition without significant restoration efforts. This is especially true in the areas previously heavily bedded and planted to sand pine or loblolly pine at very heavy stocking. Several stands were observed on the Thomas Creek tract that looked very promising - where following clear cut timber harvest, rollerchopping and burning - the site was planted to either slash or longleaf pine using a modified v-blade scalping blade. Seedling survival looked good and the native groundcover appeared to be recovering well, and very manageable with fire alone. Continued effort is needed however in the sandhills, especially in the Monticello tract, to remove off site planted pines and improve any remaining groundcover species using frequent prescribed fires that include the reintroduction of growing season fire. The impact of past industrial forestry practices as it relates to native groundcover composition in these stands is still an unknown. Considerable effort on nearly 200 acres of sandhill in the Thomas Creek Tract however appears to have successfully re-established longleaf pine seedlings (2011) on an area of heavily degraded (oak densities) sandhill, following an aerial velpar application in 2009 and a hot burn in 2010.

I.B. Listed Species

- Recommend survey for amphibians (salamanders & gopher frog).
- The excellent use of prescribed fire benefits all the listed species.
- Excellent work by forest volunteers (Yay George!) to identify and monitor a much expanded imperiled plant list. Good past survey work on gopher tortoises in sandhills.

I.C. Natural Resource Survey/Monitoring Resources

- Recommend survey for invertebrates.
- Need to bring in any new imperiled species by cooperating with groups already conducting surveys in region such as invertebrate and amphibian assessments.
- Again excellent work to expand listed species survey, monitoring and documentation. Invasive plants are well monitored and mapped by staff.

II.A.B. Cultural Resources

- Add any new sites as they appear to master site file. Ask FDEP for assessment of possible soil contamination at old Dip vat areas.
- Good work by staff to submit two potential sites (dipping vats) to DHR. The forester is scheduled to attend the next DHR archeological site monitor school. Current sites are all located and monitored at least annually.

III.A. Resource Management

- Management needs to consider the amount of acreage that is actually available to be burned.
- My assessment of meeting objectives takes out the drought years so Cary State Forest exceeds objectives in my opinion.
- The FFS staff have burned over 4000 acres over the past four years, which is well over 50% of the acres currently burnable on the forest, after removing the nearly 1000 acres recently planted on the state forest over the last five years and those dense loblolly and sand pine stands awaiting harvest. Great work increasing growing season component to nearly 600 acres over the last four years. More effort has been taken to avoid fire line construction near wetland ecotones and fire has been successfully pushed into many of these transition “edges”.

III.B. Restoration

- Exceeded acreage objective of sandhill restoration. Basin swamp restoration project has been prepared & is ready to be implemented by an outside entity for mitigation credits when development occurs.
- Good restoration progress in the degraded sandhill in the Thomas Creek Tract (?) to re-establish longleaf pine (discussed in natural community notes). Good planning efforts to establish a wetland restoration project in the area of a large basin swamp fire, however, no actual field work has begun on this project.

III.C. Forest Management

- Commend adaptable approach to reforestation w/minimal negative impacts to surrounding environment (v-blade).
- Excellent efforts to inventory and map all forest stands. Data is very current. Good work to identify and develop timber thinning projects to improve forest health, reduce timber densities and provide for revenues. Timber sales appeared to be well marked and very effectively administered. Excellent recent work reestablishing pine seedlings following clearcuts using modified v-blade with very little soil or vegetative disturbance.

III.D. Non-native Invasive & Problem Species

- The extensive use of prescribed fire in Cary State Forest has the beneficial effect of minimizing presence of problem species specifically southern pine beetle.
- Cary/District 7 staff is an active participant in NE Florida invasive plant working group. Very effective efforts at treating all invasive plants on the forest. The only exception is the widespread population of torpedo grass along the road shoulders. Past research has suggested however that torpedo grass is not a serious threat to spread from road shoulders into natural upland habitats.

III.E. Hydrologic/Geologic Function

- Recommend pursuing assessment of hydrology of Norfolk Southern Tract & Thomas Creek Tract; commend detailed attention to road maintenance.
- Roads were in particularly good condition throughout considering public use, timber harvest activities and the need for access for management activities. Suggest coordinating w/SJRWMD to discuss the potential need for and planning of water quality testing if necessary in the future.
- Water quantity is monitored by an outside agency SJRWMD & quality monitoring by FDEP, no need for staff to duplicate monitoring.
- Excellent work to replace old culverts and improved road surfaces throughout the state forest, including the more recently acquired tracts.

III.F. Resource Protection

- More law enforcement personnel would be beneficial but the existing law enforcement cooperation with FWC has been very good.
- Boundaries are all well surveyed and fenced, where appropriate.

III.G. Adjacent Property Concerns

- Red shirt parcel swapped for SJRWMD parcel adjacent to Thomas Creek.
- Excellent cooperation with FDOT during the current widening of US 301, including the protection of several historic oaks at the office site.

IV. Public Access and Education

- As time and opportunity allow staff could seek assistance with other volunteers to build on the public education efforts with regard to forest use by visitors interested in listed plants & animals. Also to locally advertise the opportunity for firewood harvest in the sandhill restoration areas.

- Plans exist for new access and parking on newly acquired tract. Roads are in excellent condition for public access.
- Nice balance of recreation opportunities that focus on hunters, equestrian users and a small number of campers. Additional trail heads (one completed on Thomas Creek) and camping areas are planned, but not yet funded.

V. Infrastructure/ Management Resources

- Appears to be need for 1 additional ranger.
- Equipment storage sheds need expansion & a permanent office building have been requested. There are needs for additional staff and funding.
- Need forest ranger. Need funding to repair hydrological damaged roads.
- Nice improvements to the camping area restroom.
- Need to expand existing equipment storage area.
- Just one forester assigned here. Need to establish a park ranger position.

Management Review Determination

- Overall management of Cary State Forest is excellent..

2017 Land Management Review Team Report for Cary State Forest

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1. Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In case where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

1.1. Property Reviewed in this Report

Name of Site: Cary State Forest

Managed by: Department of Agriculture and Consumer Services, Florida Forest Service

Acres: 13,385

County: Duval, Nassau

Purpose(s) for Acquisition: Development and management of a state forest.

Acquisition Program(s): CCC/Florida Forever/SOR

Original Acquisition Date: 7/14/39

Area Reviewed: Entire Property

Last Management Plan Approval Date: 6/28/2012

Review

Agency Manager and Key Staff Present:

- Sam Negaran, Manager
- Jennifer Hart, FFS
- Jon Johnson, FFS
- Noah Wyatt, FFS

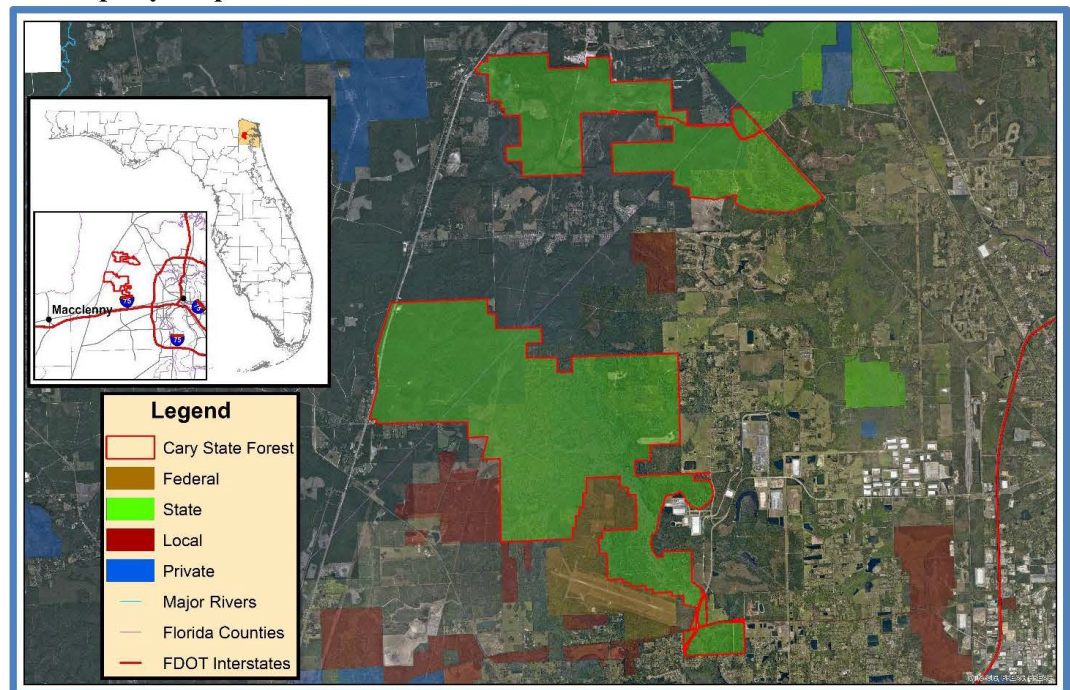
Review Team Members Present (voting)

- Rick Owen, DRP District
- Local, None
- Scotland Talley, FWC
- Brittany Dion, FDEP-NE District
- Bill Korn, FFS
- George Barbour, Conservation Org.
- Private Land Manager, None
- Heather Venter, SJRWMD

Other Non-Team Members Present (attending)

- James Parker, DEP/DSL
- Aric Larson, DEP/DSL
- Ray Spaulding, DEP/DSL
- Faith Barbour, FNPS

1.2 Property Map



1.3. Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Yes = 6, No = 0

Are the management practices, including public access, in compliance with the management plan?

Yes = 6, No = 0

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see Appendix A.

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.55	4.75
Prescribed Fire / Habitat Restoration	4.07	4.51
Hydrology	3.96	3.89
Imperiled Species	4.80	4.58
Exotic / Invasive Species	4.56	4.33
Cultural Resources	4.42	3.75
Public Access / Education / Law Enforcement	4.55	4.39
Infrastructure / Equipment / Staffing	4.08	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

1.3.1 Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the FFS for continuing to make progress in the prescribed fire program by keeping stands in fire rotation and bringing in new areas by reintroducing fire to unburned stands. (6+, 0-)
2. The team commends the FFS for making good progress with sandhill restoration on the Thomas Creek tract. (6+, 0-)
3. The team commends the FFS for reintroducing fire into overgrown areas before they become too uncontrollable. (6+, 0-)
4. The team commends the staff for efforts to punch fire into the ecotonal areas. (6+, 0-)
5. The team commends the FFS staff for the good coordination with appropriate agencies and especially volunteer efforts to monitor imperiled species, including invertebrates. (6+, 0-)
6. The team commends the FFS for completing the Basin Catch Swamp Road hydrological restoration project. (6+, 0-)
7. The team commends the FFS for upgrading the campground and facilities on the Cary tract and improving security by providing for a campground host. (6+, 0-)
8. The team commends the FFS for the good coordination with DHR concerning cultural resource identification and submission of new sites on the forest. (6+, 0-)

9. The team commends the FFS for their excellent job at recruiting and hiring professional foresters and biological staff that can add to the experience of managing forest natural and cultural resources. (6+, 0-)
10. The team commends the FFS for the good efforts at public education and outreach with local communities and increasing educational opportunities within the forest. (6+, 0-)

1.3.2. Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends that FFS, during the next management plan update, add blackwater stream FNAI community. (6+, 0-)

Managing Agency Response: Requesting and obtaining funding to receive an updated FNAI survey to capture a complete Current and Historical Natural Communities assessment is one of the FFS' explicit goals as defined in Goal 4, Objective 1 of the current CSF 10 Yr Resource Management Plan. A specific request to identify and add Thomas Creek as a blackwater stream will be made as part of the survey scope of work.

2. The team recommends that the FFS increase burn frequency into all sandhill communities on the forest, especially on Thomas Creek tract where restoration efforts have been used. (6+, 0-)

Managing Agency Response: The lack of consistent and experienced personnel to conduct prescribed burn operations across all community types on CSF has been a challenge. Currently, CSF is fully staffed with 3 Certified Burn Managers, including the FAS, and the Forester is enrolled in an upcoming Certified Burn Manager Class. Bringing all community types, including sandhills, into accepted burn rotation frequencies is one of CSF's highest priorities.

3. The team recommends that the FFS seek funding to improve roads in the Norfolk tract to increase access for resource management activities, especially prescribed fire. (6+, 0-)

Managing Agency Response: Securing funding for significant road projects is most often associated with the ability to provide access to significant tracts of merchantable, or near merchantable timber. There are currently @ 643 ac of 15 – 20 yr old plantation timber in the Norfolk Southern tract that is regularly assessed for its harvest potential with the first thinning of the oldest plantation expected within the next 3-4 years. With fuel loads of at least a 9-yr rough, the re-introduction of fire into these stands will be post-thinning. In the absence of special project funding, road improvement projects in the Norfolk Southern tract will be performed in small sections over time.

4. The team recommends that the FFS reach out to DHR to conduct a preliminary site visit to the forest to get advice on existing cultural resources and the need for additional survey work. (6+, 0-)

Managing Agency Response: The Cary SF forester will contact DHR as recommended.

5. The team recommends that the FFS continue to assess access/vandalism issues on the Garden Street entrance. (6+, 0-)

Managing Agency Response: The FFS continues to work closely with FWC and local law enforcement to minimize vandalism and other illegal activity across the entirety of Cary SF. A planned parking/recreation area near the Garden St. entrance with walk-in access only is under consideration. The effectiveness of reducing vandalism by changing the current Garden St. entrance to a walk-in only access point will have to be carefully weighed against the severe curtailment of general access to those members of the public who enter Cary SF via Garden St. to use the forest legally, without incident, and as intended.

6. The team recommends that the FFS continue to work towards prioritizing burn units in order to better define burn objectives. (6+, 0-)

Managing Agency Response: A recent, significant effort to identify and change burn units to more definable and manageable parcels has taken place, has thus far shown to be productive, and is still subject to modification as needed. This change is expected to continue increasing the ability of forest staff to accurately record burn histories, prioritize burn units, and better define burn objectives.

7. The team recommends that the FFS assess the feasibility of introducing some mechanical vegetation management (mowing or chopping) in areas where fire is a challenge. (6+, 0-)

Managing Agency Response: The Jacksonville District does not have a drum chopper and budget allocation is the primary obstacle in hiring third party contractors. Special project funding for vegetation management has focused on site preparation/reforestation activities. Past and ongoing collaboration with the FWC has resulted in several successful sandhill and specific species habitat improvement projects with the ultimate goal of reintroducing fire. We will continue to assess the feasibility and opportunities to fund mechanical vegetation management in areas where fire is a challenge.

2. Field Review Details

2.1 Field Review Checklist Findings

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

1. Natural communities specifically; mesic flatwoods, basin swamp, wet flatwoods, sandhill, bottomland forest, dome swamp, baygill, floodplain swamp, depression marsh, basin marsh, blackwater stream.
2. Listed species protection and preservation; animals, gopher frog, gopher tortoise, Sherman's fox squirrel, plants, night flowering petunia, many flowered orchids.
3. Natural resources survey/monitoring specifically; listed species or their habitat monitoring, fire effects monitoring other habitat management effects, invasive species survey/monitoring.
4. Cultural resources, specifically cultural resource survey, and protection and preservation
5. Resource management (prescribed fire), specifically area being burned, frequency, and quality.
6. Restoration, specifically degraded sandhill, basin swamp.
7. Forest Management, specifically timber inventory/assessment, timber harvesting, reforestation/afforestation, site preparation.

8. Non-native, invasive, and problem species, specifically prevention and control of plants, animals and pest/pathogens.
9. Hydrologic/geologic function, specifically roads/culverts, ditches and hydro-period alteration.
10. Ground water monitoring, specifically quality and quantity.
11. Surface water monitoring, specifically quality and quantity.
12. Resource protection, specifically; boundary survey, gates and fencing, signage and law enforcement presence.
13. Adjacent property concerns, specifically; inholdings/additions.
14. Public access, specifically parking and roads.
15. Environmental education and outreach; specifically, wildlife, invasive species, habitat management activities, interruptive facilities and signs, recreational opportunities and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings, equipment, staff and funding.

2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan update should include information on how these items have been addressed:

**** The review team scores did not identify items requiring improvement actions in the field. ****

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	4	4	4	4	4	4			4.00
Basin swamp	I.A.2	4	4	5	5	5	5			4.67
Wet flatwoods	I.A.3	3	4	4	3	3	3			3.33
Sandhill	I.A.4	4	3	3	3	5	3			3.50
Bottomland forest	I.A.5	4	5	5	5	5	5			4.83
Dome swamp	I.A.6	4	5	5	5	5	5			4.83
Baygall	I.A.7	5	4	5	5	5	5			4.83
Floodplain swamp	I.A.8	5	5	5	5	5	5			5.00
Depression marsh	I.A.9	5	4	4	5	5	5			4.67
Basin marsh	I.A.10	5	4	5	5	5	5			4.83
Blackwater Stream	I.A.11	4		5	5	5	5			4.80

Natural Communities Average Score										4.48
Listed species:Protection & Preservation (I.B)										
Animals	I.B.1	4	5	5	4	5	4			4.50
Gopher Frog	I.B.1.a					5				5.00
Gopher Tortoise	I.B.1.b					5				5.00
Plants	I.B.2		4		5	5	5			4.75
Shermans Fox Squirrel	I.B.1.c					5				5.00
Night Flowering Petunia	I.B.2.a	5	5	5	3	5	5			4.67
Many Flowered Orchid	I.B.2.b	5	5	5	3	5	5			4.67
Listed Species Average Score										4.80
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5	4			4.83
Other non-game species or their habitat monitoring	I.C.3	5	5	5	4	5	4			4.67
Fire effects monitoring	I.C.4	4	4	4	4	4	4			4.00
Other habitat management effects monitoring	I.C.5	4	5	3	4	5	4			4.17
Invasive species survey / monitoring	I.C.6	5	5	5	5	5	5			5.00
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	4	4	5	5			4.33
Protection and preservation	II.B	4	5	4	4	5	5			4.50
Cultural Resources Average Score										4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	2	3	3	3	4	4			3.17
Frequency	III.A.2	5	3	3	2	4	3			3.33
Quality	III.A.3	5	4	4	5	5	5			4.67
Resource Management, Prescribed Fire Average Score										3.72
Restoration (III.B)										
Degraded Sandhill	III.B.1	4	5	3	4	5	4			4.17
Basin Swamp	III.B.2	4	5	5	4	5	5			4.67
Restoration Average Score										4.42
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	5	5	5	5	5			4.83
Timber Harvesting	III.C.2	4	4	5	5	5	4			4.50
Reforestation/Afforestation	III.C.3	4	5	5	5	5	4			4.67
Site Preparation	III.C.4	4	4	5	5	5	4			4.50
Forest Management Average Score										4.63
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	4	5	5			4.67
prevention - animals	III.D.1.b	4	5	5	3	5	4			4.33
prevention - pests/pathogens	III.D.1.c	4	5	5	3	5	5			4.50

Control										
control - plants	III.D.2.a	4	5	5	4	5	5			4.67
control - animals	III.D.2.b	4	5	5	4	5	4			4.50
control - pest/pathogens	III.D.2.c	4	5	5	4	5	5			4.67
Non-Native, Invasive & Problem Species Average Score										4.56
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	4	5	5	5	4			4.50
Ditches	III.E.1.b	4	4	4	5	5	4			4.33
Hydro-period Alteration	III.E.1.c	5	4							4.50
Water Level Alteration	III.E.1.d									
Dams, Reservoirs, other impoundments	III.E.1.e									
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.44
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	4	4	3		3			3.60
Ground water quantity	III.E.2.b	4	4	4	3		3			3.60
Ground Water Monitoring Average Score										3.60
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4	4	4	3	5	3			3.83
Surface water quantity	III.F.3.b	4	4	4	3	5	3			3.83
Surface Water Monitoring Average Score										3.83
Resource Protection (III.F)										
Boundary survey	III.F.1	4	5	5	4	4	4			4.33
Gates & fencing	III.F.2	5	4	5	4	5	4			4.50
Signage	III.F.3	4	5	5	4	5	4			4.50
Law enforcement presence	III.F.4	5	5	5	4	5	4			4.67
Resource Protection Average Score										4.50
Adjacent Property Concerns (III.G)										
Land Use										
Expanding Development	III.G.1.a	5	4	3	3	5	4			4.00
Inholdings/additions	III.G.2	4	4	4	3		4			3.80
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	4	4	4	5	4			4.17
Parking	IV.1.b	4	4	3	4	5	5			4.17
Environmental Education & Outreach										
Wildlife	IV.2.a	5	5	5	4	5	5			4.83
Invasive Species	IV.2.b	4	5	5	4	5	5			4.67
Habitat Management Activities	IV.2.c	4	5	5	4	5	5			4.67
Interpretive facilities and signs	IV.3	4	5	5	4	5	5			4.67
Recreational Opportunities	IV.4	4	5	5	4	5	5			4.67
Management of Visitor Impacts	IV.5	5	5	5	5	5	5			5.00
Public Access & Education Average Score										4.60

Management Resources (V.1, V.2, V.3, V.4)											
Maintenance											
Waste disposal	V.1.a	4	5	5	4	5	5				4.67
Sanitary facilities	V.1.b	4	5	5	4	5	5				4.67
Infrastructure											
Buildings	V.2.a	4	4	4	3	5	4				4.00
Equipment	V.2.b	4	4	4	3	5	3				3.83
Staff	V.3	3	4	5	2	4	3				3.50
Funding	V.4	3	4	5	3	4					3.80
Management Resources Average Score											4.08
Color Code: Excellent Above Average Below Average Poor Missing Vote Insufficient Information See Appendix A for detail											

3. Land Management Plan Review Details

3.1 Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

****The review team scores did not identify items requiring improvement actions in the field. ****

3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	5	5	5	5	5	5			5.00
Basin swamp	I.A.2	5	5	5	5	5	5			5.00
Wet flatwoods	I.A.3	5	5	5	5	5	5			5.00
Sandhill	I.A.4	5	5	5	4	5	5			4.83
Bottomland forest	I.A.5	5	5	5	5	5	5			5.00
Dome swamp	I.A.6	5	5	5	5	5	5			5.00
Baygall	I.A.7	5	5	5	5	5	5			5.00
Floodplain swamp	I.A.8	5	5	5	5	5	5			5.00
Depression marsh	I.A.9	5	5	5	5	5	5			5.00
Basin marsh	I.A.10	5	5	5	4	5	5			4.83
Blackwater Stream	I.A.11	4	5	1	1	5	5			3.50

Natural Communities Average Score										4.83
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5		4	5	3			4.20
Gopher Frog	I.B.1.a					5				5.00
Gopher Tortoise	I.B.1.b					5				5.00
Shermans Fox Squirrel	I.B.1.c					5				5.00
Plants	I.B.2	5	5		3	5	3			4.20
Night Flowering Petunia	I.B.2.a	5	5	5	3	5	3			4.33
Many Flowered Orchid	I.B.2.b	5	5	5	3	5	3			4.33
Listed Species Average Score										4.58
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	4	5	3			4.50
Other non-game species or their habitat monitoring	I.C.3	5	5	5	4	5	3			4.50
Fire effects monitoring	I.C.4	4	5	4	3	5	3			4.00
Other habitat management effects monitoring	I.C.5	4	5	3	3	5	3			3.83
Invasive species survey / monitoring	I.C.6	5	5	5	4	5	3			4.50
Cultural Resources (Archeological & Historic sites) (II.A,II.B)										
Cultural Res. Survey	II.A	4	4	2	2	5	4			3.50
Protection and preservation	II.B	4	5	4	2	5	4			4.00
Cultural Resources Average Score										3.75
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	4	4	5	5			4.67
Frequency	III.A.2	5	5	4	3	5	5			4.50
Quality	III.A.3	5	5	4	4	5	5			4.67
Resource Management, Prescribed Fire Average Score										4.61
Restoration (III.B)										
Degraded Sandhill	III.B.1	4	4	5	4	5	4			4.33
Basin Swamp	III.B.2	4	5	5	4	5	4			4.50
Restoration Average Score										4.42
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	5	5	4	5	5			4.67
Timber Harvesting	III.C.2	4	5	5	4	5	5			4.67
Reforestation/Afforestation	III.C.3	4	5	5	4	5	5			4.67
Site Preparation	III.C.4	4	5	5	4	5	5			4.67
Forest Management Average Score										4.67
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	3	5	4			4.33
prevention - animals	III.D.1.b	4	5	5	3	5	4			4.33

prevention - pests/pathogens	III.D.1.c	4	5	5	3	5	4			4.33
Control										
control - plants	III.D.2.a	4	5	5	3	5	4			4.33
control - animals	III.D.2.b	4	5	5	3	5	4			4.33
control - pest/pathogens	III.D.2.c	4	5	5	3	5	4			4.33
Non-Native, Invasive & Problem Species Average Score										4.33
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	5	4	4	5	4			4.33
Ditches	III.E.1.b	4	5	4	4	5				4.40
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.37
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4		4	3		3			3.50
Ground water quantity	III.E.2.b	4		4	3		3			3.50
Ground Water Monitoring Average Score										3.50
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4		4	3	5	3			3.80
Surface water quantity	III.E.3.b	4		4	3	5	3			3.80
Surface Water Monitoring Average Score										3.80
Resource Protection (III.F)										
Boundary survey	III.F.1	4	5	5	3	5	4			4.33
Gates & fencing	III.F.2	5	5	5	3	5	4			4.50
Signage	III.F.3	4	5	5	3	5	4			4.33
Law enforcement presence	III.F.4	5	5	4	4	5	4			4.50
Resource Protection Average Score										4.42
Adjacent Property Concerns (III.G)										
Land Use										
Expanding Development	III.G.1.a	4	4	5	3	5	4			4.17
Inholdings/additions	III.G.2	4	5	4	3	5	4			4.17
Discussion of Potential Surplus Land Determination	III.G.3		4	4	3	5	4			4.00
Surplus Lands Identified?	III.G.4		4	4	3	5	4			4.00
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	5	4	5	4			4.50
Parking	IV.1.b	4	5	5	4	5	4			4.50
Environmental Education & Outreach										
Wildlife	IV.2.a	5	5	4	3	5	4			4.33
Invasive Species	IV.2.b	4	5	4	3	5	4			4.17
Habitat Management Activities	IV.2.c	4	5	4	3	5	4			4.17
Interpretive facilities and signs	IV.3	4	5	4	4	5	4			4.33
Recreational Opportunities	IV.4	4	5	5	4	5	4			4.50
Management of Visitor Impacts	IV.5	5	5		3	5	4			4.40
Public Access & Education Average Score										4.36

Managed Area Uses (VI.A, VI.B)											
Existing Uses											
Hunting	VI.A.1	4	5	5	5	5	5				4.83
Equestrian	VI.A.2	5	5	5	4	5	5				4.83
Camping	VI.A.3	4	5	5	4	5	5				4.67
Hiking	VI.A.4	4	5	5	5	5	5				4.83
Biking	VI.A.5	4	5	5	4	5	5				4.67
Nature study	VI.A.6	4	5	5	5	5	5				4.83
wildlife observation	VI.A.7	4	5	5	5	5	5				4.83
Picnicking	VI.A.8	4	5	5	5	5	5				4.83
Geocaching	VI.A.9		5	5	5	5	5				5.00
Proposed Uses											
On-site housing	VI.B.1	4	4	5	4	4	5				4.33

Color Code:

Excellent

Above Average

Below Average

Poor

Missing Vote

Insufficient Information

See Appendix A for detail

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

2022 Land Management Review Team Report for Cary State Forest

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Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In cases where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

Property Reviewed in this Report

Name of Site: Cary State Forest

Managed by: Department of Agriculture and Consumer Services, Florida Forest Service

Acres: 13,385

County: Duval, Nassau

Purpose(s) for Acquisition: Development and management of a state forest.

Acquisition Program(s): CCC/Florida Forever/SOR

Original Acquisition Date: 7/14/39

Area Reviewed: Entire Property

Last Management Plan Approval Date: 6/28/12

Review Date: 8/5/22

Agency Manager and Key Staff:

- Carlton Scott, Manager
- Andy Lamborn
- Sam Negaran

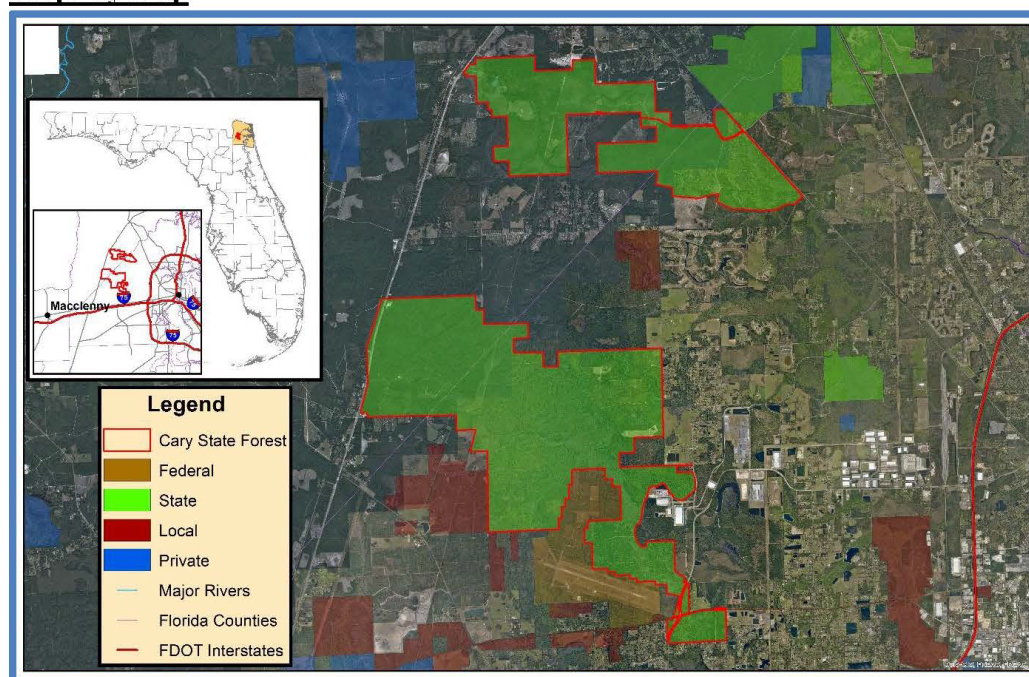
Review Team Members (voting)

- John McKenzie, DRP District
- Local Gov't., None
- Rebecca Doane, FWC
- Caleb Johnson, DEP District
- Shelly Wayte, FFS
- Chris Kinslow, SJRWMD
- George Barbour, Conservation Org.
- Private Land Manager, None

Non-Team Members (attending)

- Keith Singleton, DEP/DSL

Property Map



Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Yes = 6, No = 0

Are the management practices, including public access, in compliance with the management plan?

Yes = 6, No = 0

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see Appendix A.

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.81	4.80
Prescribed Fire / Habitat Restoration	4.65	4.56
Hydrology	4.31	4.19
Imperiled Species	4.96	4.48
Exotic / Invasive Species	4.44	4.33
Cultural Resources	4.42	4.42
Public Access / Education / Law Enforcement	4.69	4.58
Infrastructure / Equipment / Staffing	4.28	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the Florida Forest Service (FFS) staff for expanding recreational opportunities on both the Cary and Thomas Creek tract. (6+, 0-)
2. The team commends staff for ongoing mechanical efforts to mitigate associated concerns with prescription burning along the smoke sensitive corridors. (6+, 0-)

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends that the parking area on Thomas Road be closed due to low usage and damage to natural resources. (6+, 0-)

Managing Agency Response: *The parking area on Acree Road will be closed to vehicular traffic. The gate and road will be opened during hunting season to allow limited vehicular traffic for quota hunters only. The Florida Forest Service will retain the option of re-opening this parking site in the future as population growth in surrounding areas increase demand for appropriate, non-destructive recreational opportunities.*

Field Review Details

Field Review Checklist Findings

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

1. Natural communities, specifically mesic flatwoods, basin swamp, wet flatwoods, sandhill, bottomland forest, baygall, floodplain swamp, depression marsh, and basin marsh.
2. Listed species, listed animal and plant species in general, and specifically night flowering petunia, and many flowered orchid.
3. Natural resources survey/monitoring resources; specifically listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring.
4. Cultural resources, specifically cultural resource survey, and protection and preservation.
5. Prescribed fire, specifically area being burned, frequency and quality.
6. Restoration, specifically degraded sandhill, basin swamp.
7. Forest management, specifically timber inventory, timber harvesting, reforestation/afforestation and site preparation.
8. Non-native, invasive, and problem species, specifically prevention and control of plants, animals, and pests/pathogens.
9. Hydro-alteration, specifically roads and culverts, and ditches.
10. Ground water monitoring, specifically quality and quantity.
11. Surface water monitoring, specifically quality and quantity.
12. Resource protection, specifically boundary survey, gates and fencing, signage and law enforcement presence.
13. Adjacent property concerns, specifically expanding development, and inholdings and additions.
14. Public access, specifically parking, and roads.
15. Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings, and equipment.

Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan update should include information on how these items have been addressed:

The review team scores did not identify items requiring improvement actions in the field.

Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members	Average
-------------------	-------------	------------------------	---------

		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	5	5	4	5	4	4			4.50
Basin swamp	I.A.2	4	5	5	5	5	4			4.67
Wet flatwoods	I.A.3	4	5	4	5	4	3			4.17
Sandhill	I.A.4	5	5	4	5	4	5			4.67
Bottomland forest	I.A.5	5	5	5	5	5	4			4.83
Dome swamp	I.A.6	3	4	3	5	4	4			3.83
Baygall	I.A.7	4	5	5	5	5	5			4.83
Floodplain swamp	I.A.8	5	5	5	5	5	5			5.00
Depression marsh	I.A.9	4	5	5	5	5	5			4.83
Basin marsh	I.A.10	4	5	5	5	5	5			4.83
Blackwater stream	I.A.11	5	3	5	5	x	5			4.60
Natural Communities Average Score										4.62
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	5	5	4	5			4.83
Plants	I.B.2	5		5	5	5	5			5.00
Night Flowering Petunia	I.B.2.a	5	5	5	5	5	5			5.00
Many Flowered Orchid	I.B.2.b	5	5	5	5	5	5			5.00
Listed Species Average Score										4.96
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5	4			4.83
Other non-game species or their habitat monitoring	I.C.3	4	5	5	5	4	4			4.50
Fire effects monitoring	I.C.4	5	5	5	5	4	5			4.83
Other habitat management effects monitoring	I.C.5	4	5	5	5	5	4			4.67
Invasive species survey / monitoring	I.C.6	4	5	5	5	5	4			4.67
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	5	4	5	3	4			4.33
Protection and preservation	II.B	5	5	5	5	3	4			4.50
Cultural Resources Average Score										4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	4	5	4	4			4.50
Frequency	III.A.2	5	5	5	5	4	4			4.67
Quality	III.A.3	5	5	5	5	5	5			5.00
Resource Management, Prescribed Fire Average Score										4.72
Restoration (III.B)										
Degraded Sandhill	III.B.1	5	5	5	5	4	5			4.83
Basin Swamp	III.B.2	3	5	5	5	4	4			4.33
Restoration Average Score										4.58
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5	5			5.00
Timber Harvesting	III.C.2	5	5	5	5	5	5			5.00
Reforestation/Afforestation	III.C.3	5	5	5	5	5	5			5.00

Site Preparation	III.C.4	5	5	5	5	5	5			5.00
Forest Management Average Score										5.00
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	5	4	3			4.33
prevention - animals	III.D.1.b	4	5	5	5	4	3			4.33
prevention - pests/pathogens	III.D.1.c	4	5	5	5	5	3			4.50
Control										
control - plants	III.D.2.a	4	5	5	5	4	4			4.50
control - animals	III.D.2.b	4	5	5	5	4	4			4.50
control - pests/pathogens	III.D.2.c	3	5	5	5	5	4			4.50
Non-Native, Invasive & Problem Species Average Score										4.44
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	5	4	5	5	4			4.67
Ditches	III.E.1.b	4	5	4	5	5	3			4.33
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.50
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	5	5	5	4	3			4.33
Ground water quantity	III.E.2.b	4	5	5	5	4	3			4.33
Ground Water Monitoring Average Score										4.33
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	4	4	5	5	4	3			4.17
Surface water quantity	III.F.3.b	3	4	5	5	4	3			4.00
Surface Water Monitoring Average Score										4.08
Resource Protection (III.F)										
Boundary survey	III.F.1	5	5	5	5	5	4			4.83
Gates & fencing	III.F.2	4	5	5	5	5	4			4.67
Signage	III.F.3	5	5	5	5	5	4			4.83
Law enforcement presence	III.F.4	5	5	5	5	5	3			4.67
Resource Protection Average Score										4.75
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.G.1.a	5	5	5	5	5	3			4.67
Inholdings/additions	III.G.2	5	5	5	5	5	3			4.67
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	5	5	5	4			4.67
Parking	IV.1.b	5	5	5	5	5	4			4.83
Environmental Education & Outreach										
Wildlife	IV.2.a	4	5	5	5	4	4			4.50
Invasive Species	IV.2.b	4	5	5	5	4	4			4.50
Habitat Management Activities	IV.2.c	5	5	5	5	5	4			4.83
Interpretive facilities and signs	IV.3	4	5	5	5	4	4			4.50
Recreational Opportunities	IV.4	5	5	5	5	4	4			4.67

Management of Visitor Impacts	IV.5	4	5	5	5	4	4			4.50
Public Access & Education Average Score										4.63
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	4	5	5	5	5	3			4.50
Sanitary facilities	V.1.b	5	5	5	5	5	3			4.67
Infrastructure										
Buildings	V.2.a	4	5	5	5	5	4			4.67
Equipment	V.2.b	5	5	5	5	5	4			4.83
Staff	V.3	4	5	4	3	3	3			3.67
Funding	V.4	2	5	4	3	3	3			3.33
Management Resources Average Score										4.28
Color Code:		Excellent	Above Average	Below Average	Poor	See Appendix A for detail				
			Missing Vote	Insufficient Information						

Land Management Plan Review Details

Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

1. *Natural Communities, specifically blackwater stream, received a below average score. This is an indication that the management plan does not sufficiently address current or desired condition and/or future management actions to protect or restore.*

Managing Agency Response: The Florida Natural Areas Inventory (FNAI) completed a natural community mapping and description project on Cary State Forest in 2010 and 2019. Blackwater stream was not included as a recognized and delineated FNAI community type in the final report of natural community descriptions on CSF in either survey so it was not included in the Cary State Forest 10 yr Land Management Plan.

Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	5	5	5	5	5	4			4.83

Basin swamp	I.A.2	5	5	5	5	5	4			4.83
Wet flatwoods	I.A.3	5	5	5	5	5	3			4.67
Sandhill	I.A.4	5	5	5	5	5	4			4.83
Bottomland forest	I.A.5	5	5	5	5	5	4			4.83
Dome swamp	I.A.6	5	5	5	5	5	4			4.83
Baygall	I.A.7	5	5	5	5	5	4			4.83
Floodplain swamp	I.A.8	5	5	5	5	5	4			4.83
Depression marsh	I.A.9	5	5	5	5	5	4			4.83
Basin marsh	I.A.10	5	5	5	5	5	4			4.83
Blackwater stream	I.A.11	1	3	1	5	1	4			2.50
Natural Communities Average Score										4.61
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5	5	5	4	4			4.50
Plants	I.B.2	4		5	5	4	4			4.40
Night Flowering Petunia	I.B.2.a	4	5	5	5	4	4			4.50
Many Flowered Orchid	I.B.2.b	4	5	5	5	4	4			4.50
Listed Species Average Score										4.48
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	4	5	5	5	4	4			4.50
Other non-game species or their habitat monitoring	I.C.3	4	5	5	5	4	4			4.50
Fire effects monitoring	I.C.4	4	5	5	5	4	4			4.50
Other habitat management effects monitoring	I.C.5	4	5	5	5	4	4			4.50
Invasive species survey / monitoring	I.C.6	4	5	5	5	4	4			4.50
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	5	5	4	3	4			4.33
Protection and preservation	II.B	5	5	5	5	3	4			4.50
Cultural Resources Average Score										4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	4	4	5	4			4.50
Frequency	III.A.2	4	5	5	5	5	4			4.67
Quality	III.A.3	4	5	5	5	5	4			4.67
Resource Management, Prescribed Fire Average Score										4.61
Restoration (III.B)										
Degraded Sandhill	III.B.1	4	5	5	5	4	4			4.50
Basin Swamp	III.B.2	4	5	5	5	4	4			4.50
Restoration Average Score										4.50
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5	5			5.00
Timber Harvesting	III.C.2	5	5	5	5	5	5			5.00
Reforestation/Afforestation	III.C.3	5	5	5	5	5	5			5.00
Site Preparation	III.C.4	5	5	5	5	5	5			5.00
Forest Management Average Score										5.00
Non-Native, Invasive & Problem Species (III.D)										
Prevention										

prevention - plants	III.D.1.a	4	5	5	5	4	3			4.33
prevention - animals	III.D.1.b	4	5	5	5	4	3			4.33
prevention - pests/pathogens	III.D.1.c	3	5	5	5	5	3			4.33
Control										
control - plants	III.D.2.a	4	5	5	5	4	3			4.33
control - animals	III.D.2.b	4	5	5	5	4	3			4.33
control - pests/pathogens	III.D.2.c	3	5	5	5	5	3			4.33
Non-Native, Invasive & Problem Species Average Score										4.33
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	5	4	5	5	4			4.50
Ditches	III.E.1.b	4	5	4	5	5	3			4.33
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.42
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	4	5	4	5	4	3			4.17
Ground water quantity	III.E.2.b	4	5	4	5	4	3			4.17
Ground Water Monitoring Average Score										4.17
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	3	5	4	5	4	3			4.00
Surface water quantity	III.E.3.b	3	5	4	5	4	3			4.00
Surface Water Monitoring Average Score										4.00
Resource Protection (III.F)										
Boundary survey	III.F.1	4	5	5	5	5	4			4.67
Gates & fencing	III.F.2	4	5	5	5	5	4			4.67
Signage	III.F.3	4	5	5	5	5	4			4.67
Law enforcement presence	III.F.4	4	5	5	5	5	3			4.50
Resource Protection Average Score										4.63
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.G.1.a	4	5	5	5	4	3			4.33
Inholdings/additions	III.G.2	4	5	5	5	4	3			4.33
Discussion of Potential Surplus Land Determination	III.G.3	4	5	5	5	4	3			4.33
Surplus Lands Identified?	III.G.4	4	5	5	5	4	3			4.33
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	5	5	5	4			4.67
Parking	IV.1.b	4	5	5	5	5	4			4.67
Environmental Education & Outreach										
Wildlife	IV.2.a	4	5	5	5	4	4			4.50
Invasive Species	IV.2.b	4	5	5	5	4	4			4.50
Habitat Management Activities	IV.2.c	4	5	5	5	4	4			4.50
Interpretive facilities and signs	IV.3	4	5	5	5	4	4			4.50
Recreational Opportunities	IV.4	4	5	4	5	5	4			4.50
Management of Visitor Impacts	IV.5	4	5	5	5	4	4			4.50
Public Access & Education Average Score										4.54

Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Hunting	VI.A.1	5	5	5	5	5	3			4.67
Equestrian	VI.A.2	4	5	5	5	5	3			4.50
Camping	VI.A.3	5	5	5	5	5	3			4.67
Hiking	VI.A.4	4	5	5	5	4	3			4.33
Biking	VI.A.5	4	5	5	5	4	3			4.33
Nature study	VI.A.6	4	5	5	5	4	3			4.33
Wildlife observation	VI.A.7	5	5	5	4	4	3			4.33
Picnicking	VI.A.8	5	5	5	5	5	3			4.67
Geocaching	VI.A.9	4	5	5	5	5	3			4.50
Proposed Uses										
On-site housing	VI.B.1	4	5	5	5	5	3			4.50

Color Code:

Excellent

Above
Average

Below
Average

Poor

Missing
Vote

Insufficient
Information

See
Appendix A
for detail

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

Exhibit S

Compliance with Local Comprehensive Plan(s)

City of Jacksonville
and
Nassau County



ONE CITY. ONE
JACKSONVILLE.

City of Jacksonville, Florida

Donna Deegan, Mayor

City Hall at St. James
117 W. Duval St.
Jacksonville, FL 32202
(904) 630-CITY
www.coj.net

February 16, 2024

Emily Marsh
Florida Department of Agriculture and Consumer Services

RE: Consistency of Cary State Forest with the City of Jacksonville's 2045 Comprehensive Plan

Ms. Marsh,

This letter is in response to your request for confirmation of the consistency of Cary State Forest with the City of Jacksonville's 2045 Comprehensive Plan.

Cary State Forest, located in western Duval County and southwestern Nassau County, contains 13,385 acres of scenic mature flatwoods, sandhills, and basin marsh communities. It was also established as Florida's second state forest in 1937. The main goals of this ten year management plan are:

1. Sustainable Forest Management
2. Public Access and Recreation Opportunities
3. Habitat Restoration, Improvement, and Fire Management
4. Listed and Rare Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration
5. Invasive Species Management and Control
6. Cultural and Historical Resource Management
7. Hydrological Preservation and Restoration
8. Capital Facilities and Infrastructure

The plan proposes the purchase of additional land to facilitate restoration, protection, maintenance, and management of natural resources. No alternate uses of this forest are being considered and the adjacent residential and commercial uses will potentially restrict prescribed burning due to smoke management concerns. With this, the 10 year plan is compliant with the 2045 Comprehensive plan.

After reviewing the proposed improvements, we find that that no further action from the Community Planning Division is necessary.

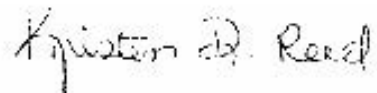
Since the City of Jacksonville's Park Department will continue to utilize the property as a state forest, the proposed use of state lands is consistent with the following goals, objectives and policies of the 2045 Comprehensive Plan, Recreation and Open Space Element:

GOAL 1	To provide a variety of recreational facilities, both active and passive, in order to achieve and maintain adopted standards for levels of service.
Objective 1.1	The City shall provide a variety of recreational facilities in the recreation and park system
Objective 1.2	The City shall ensure that recreation facilities are added to keep up with new growth and development.
GOAL 3	To use open space and recreational facilities as a key element in the City's planning strategy to enhance the natural environment and to conserve important natural resources.
Policy 3.1.2	The Recreation and Community Services Department, along with State and Federal agency partnerships will manage those portions of park properties containing important natural resources for long-term conservation. Opportunities for public access to the resource will continue to be developed in a manner that is consistent with the conservation of the resource.
GOAL 7	The City shall protect and utilize its cultural and historical resources.
Objective 7.1	The City shall protect historic and cultural resources from various types of incompatible development by preservation, conservation, restoration and inclusion in the City's recreational/open space inventory.
Objective 8.4	The City shall protect the naturally beautiful environment and prevent unwarranted abuse of its resources.
Policy 8.4.1	The City's Land Development Regulations shall require the conservation of natural areas having special characteristics, such as major waterways, wildlife habitats, woodlands, and beaches. The regulations shall be consistent with the Conservation/Coastal Management Element of the Comprehensive Plan.

Based on the information noted above, the Planning and Development Department finds that the continued use of state lands known as Cary State Forest is consistent with the 2045 Comprehensive Plan.

Please let me know if I may be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Kristen D. Reed". The signature is written in a cursive, flowing style.

Kristen D. Reed, AICP
Chief, Community Planning Division
Planning and Development Department

FLORIDA FOREST SERVICE
(850) 681-5800



THE CONNER BUILDING
3125 CONNER BOULEVARD
TALLAHASSEE, FLORIDA 32399-1650

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
COMMISSIONER WILTON SIMPSON

February 12, 2024

Ms. Elizabeth Backe, AICP
Nassau County Planning Department
96161 Nassau Place
Yulee, FL 32097
(904) 530-6320
planninginfo@nassaucountyfl.com

RE: Cary State Forest 10-Year Land Management Plan

Dear Ms. Backe,

Greetings from the Florida Forest Service (FFS). Attached is a copy of the Ten-Year Land Management Plan and Exhibits for Cary State Forest, prepared in accordance with F.S. 253.034. Please review the draft plan at your earliest convenience and reply as to whether the plan is consistent with Nassau County's Comprehensive Plan.

Please address all correspondence concerning the Management Plan on official letterhead to the above mailing address or via e-mail. I can be reached by telephone at (850) 681-5889 or by email at Emily.Marsh@fdacs.gov if you have any questions.

Thank you for assisting us in managing Cary State Forest resources through a stewardship ethic to ensure they are available for future generations.

Sincerely,

Emily Marsh
State Lands Management Planner
Forest Management Bureau
Florida Forest Service

Exhibit T

State Forest Management Plan Advisory Group Summary

Management Plan Advisory Group Public Hearing
Cary State Forest
10-Year Land Management Plan

January 11, 2024

10:30 A.M.

Meeting Minutes

MPAG Members Present:

- | | |
|-----------------------------------|---|
| • Andy Lamborn | Jacksonville District Manager, Florida Forest Service (FFS) |
| • Eric Dennis | Florida Fish and Wildlife Commission |
| • Chris Kinslow | St. Johns River Water Management District |
| • George Barbour | Florida Native Plant Society |
| • Jordan Huntley | Local Property Owner |
| • Candice Leek | Local Property Owner |
| • Commissioner Allyson McCullough | Nassau County Commissioner |

MPAG Members Not Present:

- | | |
|------------------------------|--|
| • Ray Deacon, Jr. | Duval Soil and Water Conservation District |
| • Representative Randy White | Jacksonville City Council |

FFS Staff:

- | | |
|-------------------|---|
| • Alan Davis | Land Planning Coordinator |
| • Brian Camposano | Forest Management Assistant Bureau Chief |
| • Sam Negaran | Jacksonville District Forestry Resource Administrator |
| • Emily Marsh | Land Management Planner |

Guests:

- Faith Barbour

Public Meeting Start Time: 10:30 A.M.

- Land Planning Coordinator, Alan Davis (FFS) opened the meeting by introducing himself and explained the purpose and statutory framework for the Cary State Forest 10-Year Land Management Plan process. He explained that the plan is not an annual work plan or detailed operational plan but provides general and conceptual guidance for management of Cary State Forest (CSF) for the next 10-year period.
- Mr. Davis confirmed compliance with the Florida Sunshine Law advising MPAG members to not discuss the draft outside of the public meetings. He stated that the meetings are open to the public, recorded, and minutes taken.
- Mr. Davis stated that both MPAG meetings are open to the public and proper notice was given. The meetings were advertised in the local newspapers Fernandina Beach News on December 20, 2023 and the Florida Times Union on December 15, 2023, as well as posted to the Florida Administrative Register, FFS webpage, and at the kiosks in the Jacksonville District. The meetings were announced at the Nassau County Board of County Commissioners meeting on December 11, 2023 and at the Jacksonville City Council meeting on November 28, 2023. He noted that the draft plan goes through various approvals before and after the MPAG meetings but that the FFS Director is granted final authority on changes to the draft plan. He described the day's two meetings: The first meeting is informational and provides opportunity for public comment; the 1:00 p.m. Workshop meeting provides opportunity for the MPAG members to discuss the

public input and to share their personal comments on the draft plan. The public is welcome to attend the Workshop, but participation is limited to MPAG members.

- Mr. Davis then requested MPAG Member introductions and attendance was taken.
- Mr. Davis asked the advisory group to elect an MPAG chairperson. Andy Lamborn was elected to serve as chairperson.
- Mr. Davis reiterated the purpose of this meeting is to receive public input which would be later discussed in the Workshop. One (1) member of the public was present.
- Mr. Davis then introduced Forestry Resource Administrator Sam Negaran who presented a PowerPoint presentation of the 10-Year Plan. Mr. Dennis pointed out the Branan Field Wildlife and Environmental Area during the presentation. Mr. Davis asked if there were any clarifying questions regarding the presentation. Mr. Kinslow stated that he liked the pitcher plant picture.
- Commissioner McCullough asked, in reference to the Thomas Creek Tributary, if clearing out portions of Thomas Creek on Ratliff and on the back side, if would affect water flow or change the trajectory of the path of the waterway. Mr. Negaran stated that Thomas Creek is one of the main tributaries that comes up from the north of South Branch and that it is yet to be determined if work would alter the tributary in any way, such as unplanned back up of water. Any work done upstream or downstream can have an impact but is not causing any current impacts at this time.
- Mr. Davis asked if there are any further questions.
- Mr. Davis then thanked everyone for participating and adjourned the public hearing portion of the meetings.

Public Meeting End Time: 11:00 A.M.

Management Plan Advisory Group Workshop Meeting
Cary State Forest
10-Year Land Management Plan
January 11, 2024
1:00 P.M.
Meeting Minutes

MPAG Members Present:

- | | |
|-----------------------------------|---|
| • Andy Lamborn | Jacksonville District Manager, Florida Forest Service (FFS) |
| • Eric Dennis | Florida Fish and Wildlife Commission |
| • Chris Kinslow | St. Johns River Water Management District |
| • George Barbour | Florida Native Plant Society |
| • Jordan Huntley | Local Property Owner |
| • Candice Leek | Local Property Owner |
| • Commissioner Allyson McCullough | Nassau County Commissioner |

MPAG Members Not Present:

- | | |
|------------------------------|--|
| • Ray Deacon, Jr. | Duval Soil and Water Conservation District |
| • Representative Randy White | Jacksonville City Council |

FFS Staff:

- | | |
|-------------------|---|
| • Alan Davis | Land Planning Coordinator |
| • Brian Camposano | Forest Management Assistant Bureau Chief |
| • Sam Negaran | Jacksonville District Forestry Resource Administrator |
| • Emily Marsh | Land Management Planner |

Guests:

- None

Workshop Meeting Start Time: 1:00 P.M.

- Land Planning Coordinator, Alan Davis introduced himself and opened the CSF MPAG Workshop by conducting MPAG member attendance. He reminded the MPAG members of the Florida Sunshine law and that the purpose of the workshop is to review and discuss the draft and that any edits made to the draft would be presented to the FFS Director for approval. He noted that minutes will be recorded and emailed to the MPAG members and will be approved via negative response review. MPAG member appointment will terminate when the final draft is submitted to the Acquisition Restoration Council. Forest Resource Administrator Sam Negaran was available to make proposed changes to the draft during the page-by-page review.
- Mr. Davis asked if any MPAG members had comments regarding the public hearing conducted earlier. None followed.
- Mr. Davis began a page-by-page review of the draft plan and exhibits to address MPAG members' questions, comments and suggested changes.
- Page 1: Mr. Kinslow requested the lease numbers to be checked as they do not match the rest of the document. The rest of the document has the correct lease numbers. Mr. Camposano stated his appreciation for noticing the discrepancy. Mr. Kinslow stated that the 90-acre parcel that is split is actually 130 acres because it is 130 acres that the district manages. 90 acres is what FFS manages on the west side of the railroad. Mr. Camposano stated that there have been previous discussions between FFS and the Water Management District to get the

acreage correct. Mr. Camposano asked for the acreage in ownership. Mr. Kinslow stated that WMD manages 130 acres from Lease #4609; which was worked out several months prior with a management agreement. Mr. Davis asked if these were two separate parcels on the northeast side of the forest, which Mr. Kinslow confirmed. Mr. Kinslow stated that it was finalized on April 5, 2023. Mr. Lamborn stated it was while they were finalizing the draft plan they decided to formalize the acreage. Mr. Davis stated that these parcels and acreage are still within the lease. FFS did not release the parcel, rather, WMD manages it for FFS due more of the land being adjacent to WMD as opposed to Cary State Forest. Mr. Camposano asked if there is another piece on the other side of the railroad tracks. Mr. Kinslow stated that is the 130-acre parcel. Mr. Huntley inquired about the term of the lease. Mr. Kinslow stated that the lease agreement terminates in 2059. Mr. Camposano stated that the lease is a 50-year agreement. Mr. Davis stated that all of FFS's leases are 50-year leases.

- Page 4: Mr. Kinslow inquired if an apiary site is classified by an individual hive or by a group of hives. Mr. Negaran stated that they are classified by groups of hives, and that each apiary site can have up to 50 hives, which would equate to 126 sites over 10 years. There are really 12 sites across CSF over 10 years. Mr. Kinslow stated that he wanted to ensure that terminology used within his district was similar to what FFS uses. Mr. Kinslow then asked if the sites are moving around. Mr. Negaran stated that they do not move. They are set sites across the forest that FFS staff have identified. FFS charges a fee and as long as the apiarist wants to keep those sites each year, then each year FFS reevaluates if they need to be moved due to it being too close to a recreation site or for some other reasons. For the most part, where FFS have established the sites, they have stayed there. Mr. Dennis asked if the same individual is awarded the site or if it could be multiple individuals awarded that site based on seasonality. Mr. Negaran stated that the individual has the site for 12 months and they can renew every year for an additional 12 months. However, if somebody else wants to have an apiary site on Cary, FFS evaluates that. For the sites that have been identified, if an apiarist wants to give them up, then procedure is for FFS to notify other apiary site holders or any member of the public we might know that would like an apiary site and then there's a drawing to determine who gets that site. The winner would have to abide by FFS rules and policies for maintaining the site. Mr. Dennis asked if we are keeping it at 12 sites unless more interest is apparent. Mr. Lamborn stated that you would be limited due to distance. Mr. Negaran supplemented by stating distance between other sites, distance from boundary and distance from recreational areas and trails. Mr. Camposano added that this information is listed in the BMPs for bee apiary leasing. Mr. Negaran stated that they have made some minor accommodations in the past, which was to prevent one person's colony from taking over the others. However, if it is the same beekeeper, then they don't care. FFS has spaced these sites out in a way in which there is sizeable distance between colonies. However, distance within a colony could be closer than the rules.
- Page 5: Commissioner McCullough stated that a community meeting was held 2 months ago to discuss the ballpark. One of the things that the committee from the ballpark brought up was if there is more opportunity for more recreational ballpark access to extend the ballpark based on Goal 2 in the draft plan or if that would be considered more permanent facilities. Mr. Davis stated that this is a ground disturbance activity. Every time you do a ground disturbance activity, it is a different situation. Since these are conservation lands, they are being managed by a conservation lease under statutes, so you are limited. However, FFS has done exchanges throughout the state with different entities. There are ways around it but at the same time, the state has to get a net conservation benefit; and they have a lot of different thresholds, whether it be value or acreage. It is dependent on who gets what. Mr. Camposano stated that the ballpark would not be part of the state forest because that is not a compatible recreation type for a forest. It would have to be an exchange of land. Mr. Davis added that with the state, it is typically more than a 2:1 ratio, so if you are getting 5 acres, the state must get a minimum of 10 acres, and then the values have to match at least in a 1:1 ration within the exchange. Basically, you can't say that you have 5 acres of uplands and the county has 10 acres of wetlands and you say here is your 2:1 ratio and here is your land, so the values do not match. Commissioner McCullough stated that she wanted to represent her public and to have this conversation on their behalf. Mr. Davis stated that if it makes sense great, but we have to abide by all the state statutes and policies. Commissioner McCullough stated that timelines play a significant role as well and thanked Mr. Davis for the clarification.

- Page 6: Mr. Dennis inquired about Goal 3, objective 1 and if FFS has goals for growing season and dormant season burns since FFS did total acreage for the year. Mr. Dennis expressed concern about the possibility of not maximizing benefit to the forest. Mr. Lamborn stated that they set goals every year, though the goals are moving targets based on what was burned in the past and fuel loads could have got out of rotation. When something gets out of rotation, it can cause a previously planned burn to be rescheduled for the dormant season to “catch up”. We are always going to strive to achieve more and more growing season burns than what is reported in the plan. The plan is written in a way to prevent painting ourselves into a corner. Mr. Dennis stated that he would like to have as equal of a ratio as possible between growing season and dormant season burns depending on conditions. Mr. Negaran stated that each year they develop their 5-Year plans, which one of them is the Prescribed Fire Plan and we definitely break them out between growing season and dormant season burns. As Mr. Lamborn stated, the goals are a moving target. Mr. Davis stated that the moving target is different every year. This can also affect the Land Management Review if we put in a specific number and do not meet said number, thus receiving a low score for something out of our control. Mr. Camposano stated that the language can be written better because the intent is how many acres we strive to burn annually. The reason the seasons are separated out is because we recognize there are different seasons, but we are trying to burn year-round. We do not want to pass up a good burn day just because something is scheduled to be in a growing season burn or vice-versa. Mr. Negaran said that there are a lot of factors. As Mr. Lamborn stated earlier, we are the lead wildfire fighting agency in the state. On days when it may be somewhat marginal, we may authorize a burn for Camp Blanding, but we won’t authorize a burn for ourselves because we need to be available for fire response so that number of restrictions and other factors go into whether we can burn or not; even on a “good” growing season day, it would potentially prevent us from meeting a goal if we put a number in. Mr. Lamborn stated that there are days he will allow others within the public to burn but not FFS due to weather parameters. That way, if a prescribed burn does escape, FFS resources would be available to tackle it. Mr. Dennis stated that he wouldn’t want burn permits issued on days that are marginal at best, however if there is a large footprint, he understands. Mr. Negaran stated that based on the numbers reflected in the plan, we’re hoping to turn over all pyrogenic communities about every 5 to 6 years, which is captured within the fire return interval on each of our burn units. A GIS Database helps us track these intervals. We are working on turning over the sandhill communities every 1 to 3 years, depending on when it was last burned and fuel conditions. The goal is to get it in a growing season rotation. We are trying to get mesic flatwoods into growing season burn rotation, but those other factors can get in the way. Mr. Kinslow stated that meeting that fire-return interval is more important than which season the burn is taking place. Mr. Lamborn stated that frequency is more important than which season the burn is scheduled for. Mr. Davis asked if there were any changes to be made. Mr. Dennis stated no changes needed.
- In reference to Objective 6 within Goal 2, Ms. Leek asked if a separate section about volunteers is needed given its reference throughout the plan. Mr. Davis stated that this plan is conceptual, and if someone would like some more information to contact us directly. Mr. Camposano added that language in the plan also directs the reader to the FFS website to learn more information about volunteers and how to become a volunteer. Folks are more likely to see this information on the website rather than in the plan.
- Page 13: Ms. Leek asked how “expense” is defined. Mr. Lamborn stated that the budgets are broken into different types of funding and how it is structured. Mr. Dennis asked if “expense encumbrance” would be redundant. Mr. Camposano agreed that it would be. Mr. Dennis asked if these budgets are set up annually. Mr. Camposano stated that the budget is annual. Stating contractual encumbrance would be appropriate. Mr. Lamborn stated that he thinks no change is needed.
- Page 14: Mr. Kinslow stated that the Surplus Land Assessment does a good job describing what DSL is looking for. The land management plan doesn’t say monitor surplus lands, or how do you make that determination? Mr. Camposano stated that that is a line on the LMR checklist “how did you make a determination?” and what is written in the plan is how we make our determinations. Mr. Davis asked if there were any changes to be made. Mr. Kinslow asked if there was a map in the exhibits. Mr. Davis stated no.
- Page 15: Mr. Davis asked for the lease numbers to be highlighted and if these were the leases in question that needed to be checked. Mr. Kinslow stated that they are correct on this page.

- Page 17: Ms. Leek stated her surprise to learn about a prospective oil well. She asked about the diameter of the hole, how it is capped and if it is periodically inspected. Mr. Negaran stated that he does not even know where they are. Mr. Lamborn guessed the diameter might be 6 inches. Ms. Leek re-stated her curiosity in how they were capped. Mr. Davis requested Mr. Negaran to make a comment confirming whether to leave or take out language. Mr. Camposano stated that this language may have been added in by a person who worked on the plan previously and got lost in translation. We will look into it and make that determination if it needs to be left in or taken out.
- Page 18: Mr. Kinslow stated to add in the management agreement between the management district and the state forest regarding the Red Shirt parcel. Mr. Lamborn stated to put in a comment to clarify recent lease update they did. Mr. Kinslow asked if the master file had been updated. Mr. Negaran stated that Carlton sent it up to DHR and will check to see if DHR updated to the Florida Master File. There is a cemetery near Thomas Creek that had been sent to DHR to update the Master Site File, so they will follow up with DHR.
- Page 23: Mr. Dennis noted that southeastern fox squirrel should be southern fox squirrel. Mr. Kinslow stated that a couple of species' scientific names need to be italicized. Mr. Barbour stated there is a name change to a species but is not a concern at the moment. Mr. Negaran stated that an internal employee spotted some additional species to be added to the table and if it was appropriate to add them in at this time or to provide a comment. Mr. Camposano asked who this information came from. Mr. Negaran stated Mr. Johnson found the species in question. Mr. Camposano stated that the list comes from anyone who has documentation of these sightings (FNAI, FWC, internal FFS personnel, etc.). Mr. Camposano asked if all of the listed species that Mr. Negaran referred to should be added to the table. Mr. Negaran stated that a further review should be done because there appears to be some status discrepancies to ensure they are added correctly. Commissioner McCullough suggested to add a comment requesting for additional review. Mr. Camposano stated that we can analyze further and add to the table, where appropriate. Mr. Lamborn asked Sam if Mr. Johnson recently brought this to his attention. Mr. Negaran stated yes. Ms. Marsh requested Mr. Negaran to send her the list of species so that she can add the appropriate species to the table.
- Page 25: Mr. Dennis stated that eastern fox squirrel was reclassified and needs to be changed to southern fox squirrel instead. He also stated that leaving the subspecies the way it is would be ok.
- Page 26: Mr. Dennis stated for FFS to ensure the list of species provided by FNAI matches the table of species within the draft plan. Mr. Davis asked if there were any additional questions or comments. Mr. Dennis then asked why the gopher tortoise language was added into the draft. Mr. Camposano stated that this language is a new statutory requirement as of two (2) years ago. He then stated that land managers have to assess every property over 40 acres for its feasibility for gopher tortoise recipient sites, and that all plans moving forward will have that language inserted. Mr. Kinslow confirmed this new statute went into effect in July 2022.
- Page 30: Mr. Dennis stated that there is a small game season that does not require quota permits. He asked if "and/or" language should be inserted for accuracy. Mr. Camposano stated that the language in place is stock and is used in all FFS land management plans. Mr. Dennis stressed that he doesn't want people to assume you can only hunt on Cary with a quota permit during the appropriate season because there is a non-quota small game hunt season. Mr. Camposano stated that most people looking for this information would be looking on FWC's website versus in the land management plan. Mr. Davis asked if there were any additional questions or comments.
- Mr. Kinslow stated that the recreation section was written very well. FFS did a great job balancing natural resource-based recreation with natural resource management. He then inquired if FFS was thinking of expanding or adding more campsites. Commissioner McCullough inquired the number of campsites established. Mr. Lamborn and Mr. Negaran both stated six (6) campsites. Mr. Kinslow suggested a zoomed in view of the campground on the Facilities and Improvements map in the exhibits. Mr. Davis mentioned that one can see a zoomed in view via the state forest's brochure. Mr. Negaran noted that the public can see the campground on an interactive map online as well as through Reserve America. Commissioner McCullough stated she thought there were more campsites due to how the road loops around the campground. Mr. Lamborn stated that they received a lot of positive feedback from the public on how the campground is laid out. The layout is intentional. Commissioner McCullough stated that FFS could add more sites. Mr. Lamborn

stated that he does not plan on adding more sites due to expense and staffing concerns. Mr. Negaran echoed Mr. Lamborn's sentiment in stating that they need more resources if they were to have more campsites. Mr. Lamborn then stated he wants to maintain his recreation to the highest standard possible. Therefore, he would rather have fewer sites with them being very well maintained versus having more sites and not as well maintained.

- Page 33: Commissioner McCullough asked if FFS closes hiking trails during the hunting seasons. Mr. Lamborn stated no. Mr. Dennis asked if language regarding kiosks should be inserted. Mr. Lamborn expressed language is not necessary because if the public looks at the kiosks, they will be able to see the hunting dates and information. Mr. Dennis then stated he is trying to avoid potential hunter-recreation user conflicts.
- Page 37: Mr. Huntley stated that water resources will be affected. He suggested language that would change the wording to read in a way that water resources will not be affected, such as through herbicide application. Mr. Camposano stated that FFS uses herbicides that are appropriate for plants on or near water resources and that chemicals are applied as directed by the label. Mr. Dennis agrees with Mr. Camposano's explanation. Mr. Huntley is satisfied with the discussion and does not suggest any changes.
- Page 39: Mr. Camposano stated that treatment strategy for Chinese tallows should read as "single and broadcast". The same change is also needed for Mimosa. Mr. Negaran stated it could be single and broadcast depending on the nature of infestation. Mr. Camposano then asked how staff are treating it because he has treated those species with both strategies. Mr. Negaran suggested to change language to read "single and broadcast depending on nature of infestation". Mr. Camposano agreed to language change. Mr. Negaran pointed out that some treatment strategies are mechanical, such as with Tallow treatments. Sometimes it can be plucked by hand. Mr. Camposano agreed. He then stated that FFS staff can fix the table on their own time in the interest on time.
- Page 59: Mr. Kinslow asked about the classifications and the language regarding pine plantation. He stated that language does not paint the real picture of CSF. Mr. Negaran stated that for the purposes of the plan, staff has defaulted to FNAI's classification. Mr. Kinslow acknowledged FNAI's classification. Mr. Camposano stated that FFS is not trying to have managed community types be a slighted category. Managed community types are to be seen as part of a "working-forest" strategy. Improved and Semi-Improved Pasture types are addressed in management plans in a similar format. As soon as FFS does some type of management to the pine plantation, whether it be through burning, thinning, etc., it is then classified as a natural community type rather than a pine plantation under "managed communities".
- Mr. Davis asked if there were any questions or comments on the exhibits. Ms. Leek stated that some of the maps were hard to interpret due to their size. Mr. Davis stated that the document had to be compressed for it to be sent to the MPAG members. Therefore, the maps are smaller than the original pdf. Mr. Davis suggested Ms. Leek to reach out to FFS staff for a copy of the map(s) she is interested in.
- Mr. Davis then asked each MPAG member to comment on the draft plan. Mr. Lamborn thanked everyone for their suggestions and changes. Mr. Dennis stated that the plan looked good except for a couple of minor changes that were found. Mr. Kinslow stated that the plan was well written, and that Cary does a good job in balancing their resources with completing responsibilities. He praised the CSF staff for all their hard work. Mr. Barbour stated that, except for a few minor changes, the plan is great. He noted FNAI's extensive input. Mr. Huntley stated that it was a great meeting and well-thought-out plan. He suggested FFS to start factoring in biodiversity and water quantity into their plans. Ms. Leek thanked FFS for her involvement and conversation. She stated the presentation was very informative and is pleasantly impressed with the plan. The plan reads easily and is understandable. She thanked FFS for answering her questions. She was pleased to see the extent that FFS took to address recreation within the plan. Commissioner McCullough observed the common interest of sustainability. She is grateful for FFS's investment and dedication to conserving and preserving Florida's land.
- Mr. Davis noted that the draft will be submitted to the Acquisition and Restoration Council for review. Consideration by the Council will likely occur at the June 7, 2024, public meeting.
- Mr. Davis thanked everyone for their time and participation and adjourned the meeting.

Workshop Meeting End Time: 2:08 P.M.

Exhibit U

State Forest Summary Budget

	CARY STATE FOREST MGT. ONLY 22-23 EXPENDITURES	Percentages Based on Total Dollar Amount of Expenditures	Assessed Needed Funding Based Upon LMUAC Resource Management
Resource Management	\$ 17,029	23.10%	\$ 63,017.26
Exotic Species Control	\$ 1,180	2.97%	\$ 8,104.60
Prescribed Burning	\$ 9,193	3.37%	\$ 9,193.03
Cultural Resources Management	\$ 27	0.07%	\$ 188.23
Timber Management	\$ 3,167	7.98%	\$ 21,755.02
Hydrological Management	\$ 178	0.45%	\$ 1,224.83
	\$ -		\$ -
OTHER RESOURCE MANAGEMENT	\$ 3,283	8.27%	\$ 22,551.56
Listed Species Management	\$ -		\$ -
Forest Pest and Disease	\$ -		\$ -
Plant Conservation Program	\$ -		\$ -
State Forest Research Projects	\$ -		\$ -
Boundary Surveys for State Forests	\$ -		\$ -
Other Activities Also Include: Liaison Community Meetings / Boundary Line Maintenance / Forest Inventories and Various Other Activities / Wildfire Suppression on State Forests	\$ -		\$ -
			\$ -
Administration	\$ -	7.02%	\$ -
Central Office Headquarters	\$ -		\$ -
District/Regions	\$ -	7.02%	\$ -
Units/Projects	\$ -		\$ -
	\$ -		\$ -
Support	\$ 14,313	36.04%	\$ 98,319.03
Land Management Planning	\$ 729	1.84%	\$ 5,008.43
Land Management Reviews	\$ 123	0.31%	\$ 842.92
Training/Staff Development	\$ 3,852	9.70%	\$ 26,460.65
Vehicle Purchase	\$ 151	0.38%	\$ 1,036.60
Vehicle Operations and Maintenance	\$ 6,973	17.56%	\$ 47,901.95
	\$ -		\$ -
OTHER SUPPORT	\$ 2,485	6.26%	\$ 17,068.48
State Forest Land Acquisition Support			\$ -
Other Support Activities Also Include:	\$ -		\$ -
Computer Maintenance / Radio Maintenance / Technical Support / Management of Apiary and Cattle Leases / State Forest Leases, Lease Amendments, Easements and Other Various Activities	\$ -		\$ -
			\$ -
Capital Improvements	\$ 8,365	21.06%	\$ 57,460.52
New Facility Construction	\$ 1,246	3.14%	\$ 8,557.43
Facility Maintenance	\$ 7,119	17.93%	\$ 48,903.09
			\$ -
Visitor Services/Recreation	\$ 5,072	12.77%	\$ 34,843.49
Information/Education	\$ 1,234	3.11%	\$ 8,475.59
Operations	\$ 3,839	9.67%	\$ 26,367.90
			\$ -
Law Enforcement	\$ -	0.00%	\$ -
Total	\$ 39,711.60	100.00%	\$272,790.17

Exhibit V

Arthropod Control Plans Responses from Nassau and City of Jacksonville



NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS
96135 Nassau Place, Suite 1
Yulee, Florida 32097

John F. Martin
Aaron C. Bell
Jeff Gray
Thomas R. Ford
Klynt A. Farmer

Dist. No. 1 Fernandina Beach
Dist. No. 2 Amelia Island
Dist. No. 3 Yulee
Dist. No. 4 Bryceville/Hilliard
Dist. No. 5 Callahan/West Yulee

TACO E. POPE, AICP
County Manager

JOHN A. CRAWFORD
Ex-Officio Clerk

DENISE C. MAY
County Attorney

April 25, 2022

Carlton Scott
Florida Department of Agriculture and Consumer Services
carlton.scott@fdacs.gov
Cary State Forest
7465 Pavilion Rd
Bryceville, FL 32009

Re: Cary State Forest Arthropod Control Plan

Dear Mr. Scott

Per your request, please use this letter as verification that Nassau County does not provide mosquito control services. It is our understanding that this would exclude us from needing an Arthropod Control Plan.

Sincerely,



Taco E. Pope, AICP
Nassau County Manager

TP/kb

(904) 530-6010 or (866)-474-1446

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NIKKI FRIED
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

Return to:
Mosquito Control Program
3125 Conner Blvd, Bldg 6,
Tallahassee, Florida 32399-1650

For use in documenting an Arthropod Control Plan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: Cary State Forest

Is Control Work Necessary: ☒ Yes ☐ No

In the event of a mosquito-borne illness in a populated area adjacent to or near the designated area, JMCD will reach out to land managers to coordinate activities. The same is true for a declared natural disaster such as hurricane that might necessitate emergency control measures.

Location: Cary State Forest, 7465 Pavilion Rd, Bryceville, FL 32009

Land Management Agency: Florida Forest Service, Florida Department of Agriculture and Consumer Services

Are Arthropod Surveillance Activities Necessary? ☒ Yes ☐ No

If "Yes", please explain:

Currently surveillance activities are based in areas that surround Cary State Forest. Floodwater species and potential disease vector mosquitoes are common in the area. If further surveillance within the Cary State Forest, JMCD Entomologist will coordinate with the land manager.

Which Surveillance Techniques Are Proposed?

Please Check All That Apply:

- | | | |
|---|---|--|
| ☒ Landing Rate Counts | ☒ Light Traps | ☐ Sentinel Chickens |
| ☐ Citizen Complaints | ☒ Larval Dips | ☒ Other |

If "Other", please explain:

JMCD maintains an extensive monitoring network for surveillance Jew Jersey Light Traps, CDC Light Traps, and a sentinel chicken program. Currently, Cary State Forest is not the location of any of these activities, however it may become necessary to do so in the event that mosquito-borne disease transmission is detected near or traced back to Cary State Forest. Other surveillance techniques that may be used included gravid traps, resting traps, rotator CDC traps, or BG Sentinel traps.

Arthropod Species for Which Control is Proposed: *Anopheles crucians* complex, *An. quadrimaculatus*, *Aedes infirmatus*, *Ae. tormentor*, *Ae. vexans*, *Culex nigripalpus*, *Cx. quinquefasciatus*, *Cx. salinarius*, *Culiseta melanura*, *Psorophora ciliata*, *Ps. columbiae*, *Ps. ferox*

Proposed Larval Control: Any applications within Cary State Forest would be completed by rotary wing aircraft.

Proposed larval monitoring procedure: larval dip counts

Are post treatment counts being obtained: ☒ Yes ☐ No

Biological Control of Larvae:

Might predacious fish be stocked: ☐ Yes ☒ No

Other biological controls that might be used: None

Material to be Used for Larviciding Applications:

(Please Check All That Apply:)

☒ Bti

☒ Bs

☒ Methoprene

☐ Non-Petroleum Surface Film

☐ Other, please specify:

Please specify the following for each larvicide:

Chemical or Common name: Vectobac, Fourstar Bti-CRG, Altosid SBG, Duplex (Bti and methoprene prepared according to label)

☐ Ground ☒ Aerial

Rate of application: Per label instructions specific to method of application and larvicide

Method of application: machine application applied by air only when required due to a mosquito borne public health threat or declared natural disaster with increased standing water in the immediate area that impedes clean up due to increased mosquito activity.

Proposed Adult Mosquito Control:

Aerial adulticiding (see below) ☒ Yes ☐ No

Ground adulticiding ☐ Yes ☒ No

Aerial adulticiding will only occur under the following conditions and after discussion with the land manager: 1) mosquito borne disease health threat, 2) natural disaster declaration with increased mosquito populations that affect mosquito populations in the area, and/or 3) at the request of the WEA land manager.

Please specify the following for each adulticide:

Chemical or common name: Dibrom (Naled)

Rate of application: 0.5 ounces/acre

Method of application: ULV aerial application using a helicopter.

Proposed Modifications for Public Health Emergency Control:

In the event of a declared public health emergency, control may be performed by the arthropod control agency, as part of a larger treatment plan to safeguard public health. Area land managers will be notified prior to treatment.

Proposed Notification Procedure for Control Activities:

Manager of the area will be notified and consulted by e-mail and/or phone call when treatment of the area will occur. The notice should include a map of the area being treated, the material to be used and the general time of day the treatment will occur. Public notification is posted on the City of Jacksonville website: coj.net/mosquito.

Records:

Are records being kept in accordance with Chapter 388, F.S.:

☒ Yes ☐ No Records Location: 1321 Eastport Road, Jacksonville, FL 32218

How long are records maintained:

Minimum of three years per Ch. 5E-13, FAC

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed: None

Include proposed operational schedules for water fluctuations: None

List any periodic restrictions, as applicable, for example peak fish spawning times: None

Proposed Modification of Aquatic Vegetation: None

Land Manager Comments:

Arthropod Control Agency Comments:

As stated earlier, JMCD will notify designated land manager prior to any applications made with in the designated lands. Any treatment would be in response to a natural disaster or mosquito borne disease that could impact the health of nearby residents or at the request of the land manager. In that case, JMCD would work with the land manager to determine appropriate treatments.

William A
Lamborn

Digitally signed by William A
Lamborn
Date: 2022.05.04 08:33:50 -0400

Signature of Lands Manager or Representative Date

 4/25/2022

Signature of Mosquito Control Director / Manager Date

Exhibit W

Ground Water Monitoring Wells Map



Florida Forest Service

Cary State Forest Ground Water Monitoring Wells Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

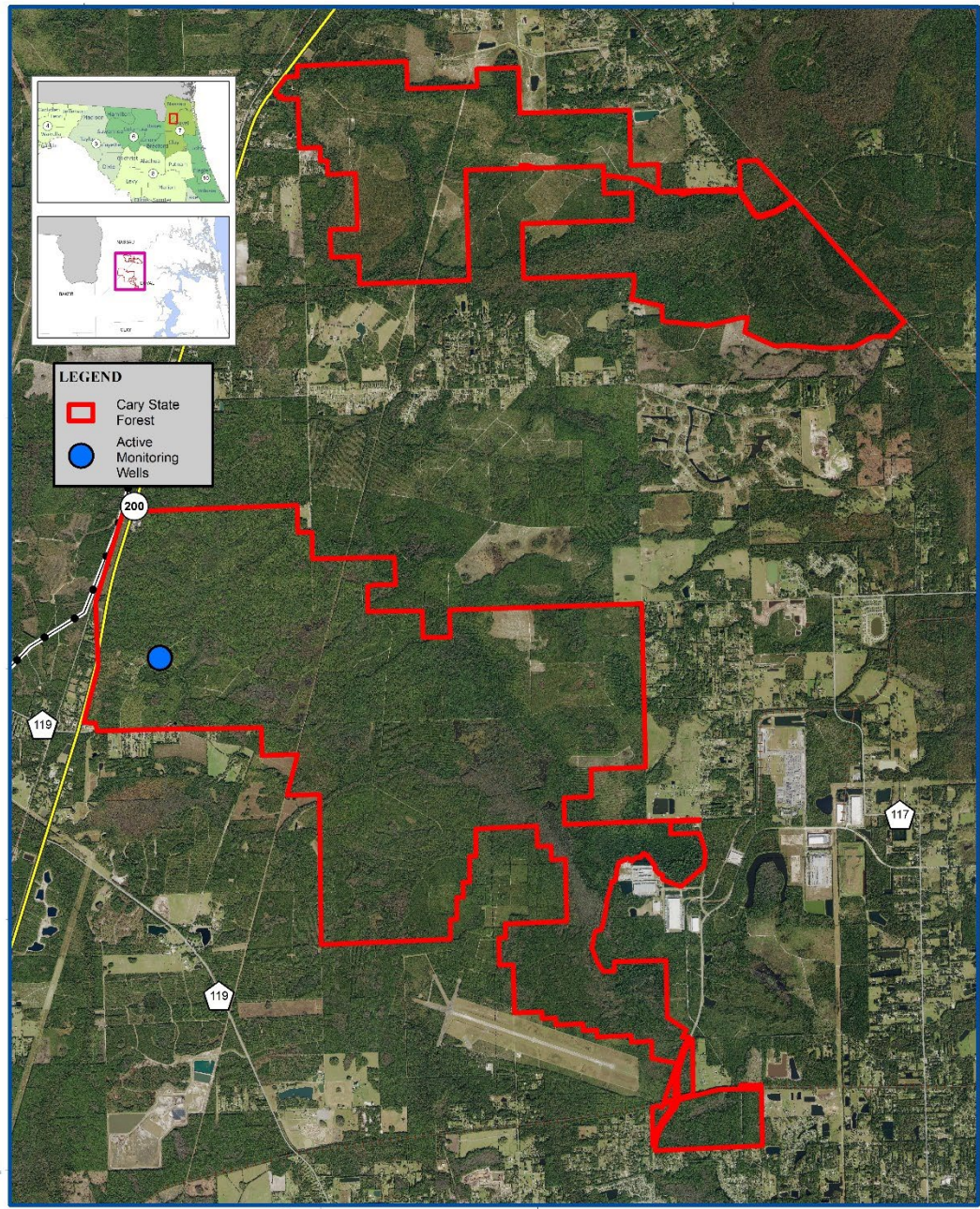
DISCLAIMER:
This map was prepared by the Florida Forest Service for informational purposes only. It is not intended to be used for legal or regulatory purposes. The Florida Forest Service does not warrant the accuracy or completeness of the information contained herein. The user assumes all liability for any use of this map.

TARGETED AREA COUNTRIES:
This map shows the targeted area for the Cary State Forest. The area is located in the state of Florida, USA. The map is a high-resolution aerial photograph with a red outline indicating the forest boundary. The map is oriented with North at the top.



LEGEND

- Cary State Forest
- Active Monitoring Wells



Map Month/Year: March 2022

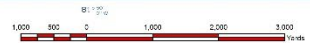


Exhibit X

Borrow Pit Map



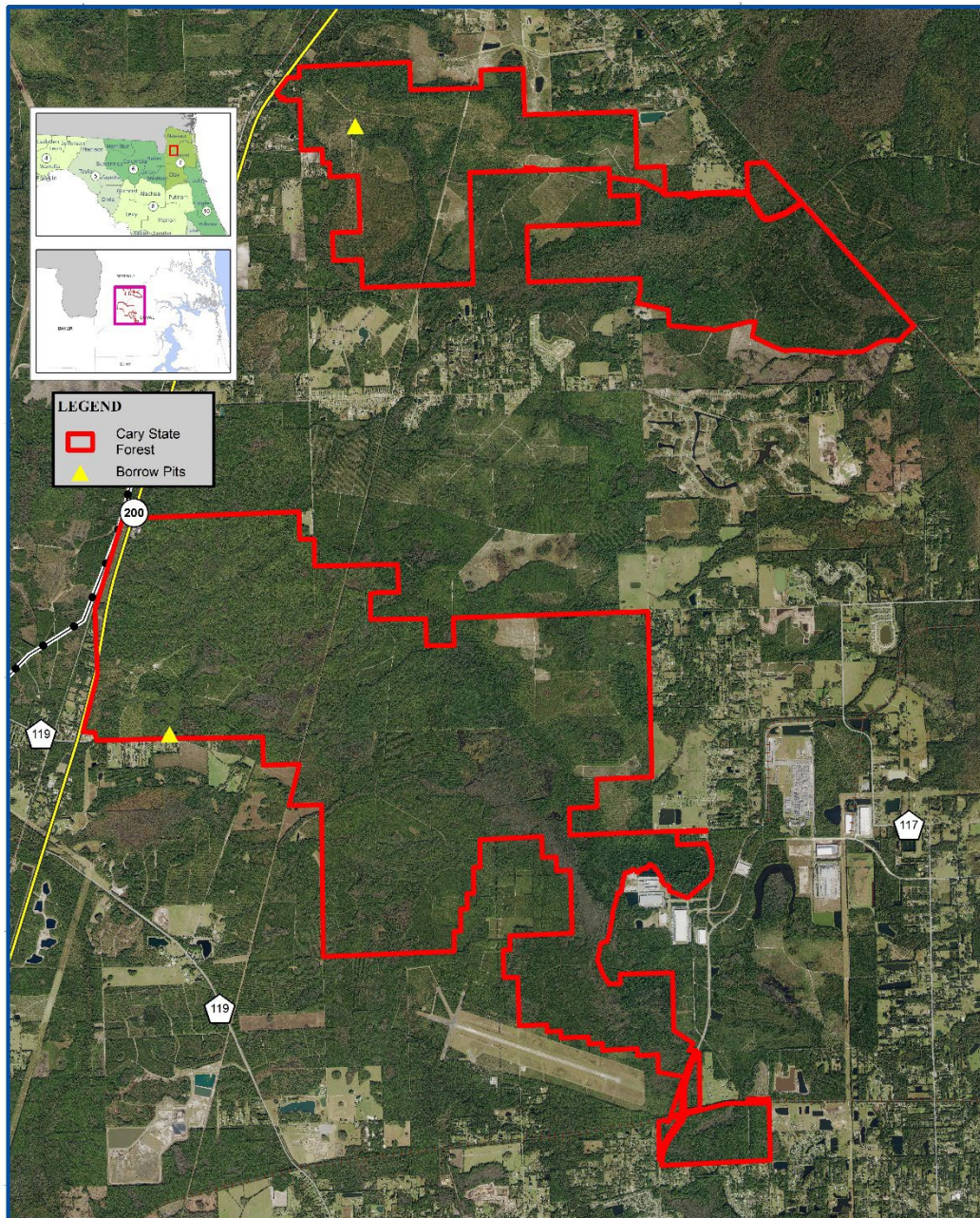
Florida Forest Service

Cary State Forest Borrow Pit Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum

DISCLAIMER:
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in this map.



0.0 0.25 0.5 1 Miles



Map Month/Year: July 2022

0 500 1,000 1,500 2,000 3,000 Feet

Exhibit Y

Florida Forever Project

2021 Florida Forever Five-Year Plan

***Northeast Florida Timberlands and
Watershed Reserve***

Summary of Recommendations and Status
as of
December 2020



Division of State Lands
Florida Department of Environmental Protection



Northeast Florida Timberlands and Watershed Reserve

Partnerships & Regional Incentives Project

Clay, Duval, Nassau

Project-at-a-Glance

Year Added to Priority List	2002
Project Acres	147,431
Acquired Acres	71,004
Cost of Acquired Acres	\$141,546,558
Remaining Project Acres	76,427
2019 Assessed Value of Remaining Acres	\$1,106,101,849

Purpose for State Acquisition

Public acquisition of this project will contribute to the following Florida Forever goals: (1) Increase the protection of Florida's biodiversity at the species, natural community, and landscape levels – known to harbor four FNAI-listed species of vascular flora and four rare animals; (2) Increase the amount of open space available in urban areas – conserve spaces suitable for greenways or outdoor recreation that are compatible with conservation purposes; (3) Increase natural resource-based public recreation and educational opportunities – camping, picnicking, nature appreciation, hiking, and horseback riding are possible; and (4) Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state – 75-80 percent of land is disturbed with restoration a primary objective.

Manager(s)

Florida Forest Service/FFS of the Florida Department of Agriculture and Consumer Services. The City of Jacksonville is manager for the 172-acre Jacksonville-Baldwin Rail Trail.

General Description

This project describes a northeast-southwest diagonal along the west side of Duval County, stretching from the Nassau River north of Jacksonville to Trail Ridge in Clay County, near the



town of Lawtey. Another section of the project makes a north-south connection about 12 miles long, between the Camp Blanding Military Reservation and the Etoniah Creek State Forest. About 75 percent of this land is used, or has been used, for silviculture. It also includes mesic flatwoods, cypress and hardwood swamp, sandhills and associated plant communities.

FNAI Element Occurrence Summary

<u>FNAI Elements</u>	<u>Score</u>
Red-cockaded woodpecker	G3/S2
Eastern indigo snake	G3/S2?
Gopher tortoise	G3/S3
Swallow-tailed kite	G5/S2
Florida black bear	G5T4/S4
<i>Florida toothache grass</i>	G2/S2
<i>variable-leaf crownbeard</i>	G2/S2
<i>hartwrightia</i>	G2/S2
<i>giant orchid</i>	G2G3/S2
<i>Thorne's beaksedge</i>	G3/S1S2
Painted Bunting, eastern population	G5T3/S1S2
<i>Bartram's ixia</i>	G2G3/S2S3

23 rare species are associated with the project

Public Use

The FFS will promote recreation and environmental education in the natural environment. There is a possibility of an intermediate and long-term need for some type of developed recreation facilities. If such facilities are developed, the use of low-impact, rustic facilities will be stressed. If an organized recreation area is desired, it will be assessed and evaluated to minimize any possible adverse effects on the natural environment. Unnecessary roads, firelines and hydrological disturbances will be abandoned and/or restored to the greatest extent practical.

Acquisition Planning

2001

On December 6, 2001, the Acquisition and Restoration Council (ARC) recommended the Northeast Florida Timberlands and Watershed Reserve project for Group A of the Florida Forever (FF) 2002 Priority list. This fee-simple and less-than-fee acquisition, located in Clay, Duval and Nassau Counties, and sponsored by The Nature Conservancy (TNC), the City of Jacksonville, and the St. Johns River Water Management District (SJRWMD), consisted of approximately 132,450 acres, more than 150 landowners, and a 2001 taxable value of \$50,158,195.



The following 37 ownerships were identified as essential: Gilman, Jackson, Carter, Owen, Nemours, Miller, Bostiwick, Klieg, Bullock, 1st Bank and Trust, Rayonier, International Paper, Motes, Boyd, South Regional Industrial Realty, East Fiftone Partners, Monticello Drugs, St. Joe, Barnett Bank Trustee, Anheuser-Busch, Inc., Travelers Ins., Foster, Tison, Castleton, Wright, Buck, Logan, Higgenbotham, Betz, Ogilvie, Milne, Kaleel and Roberts, Grey, Sythe, Pharr, Wilkinson, and Helmer.

2003

On June 6, 2003, the ARC approved a 506-acre addition, known as the Norfolk Southern property, to the project boundary in Duval County. The fee-simple acquisition, sponsored by TNC, consisted of a single owner, Southern Region Industrial Realty Inc., and had a 2002 taxable value of \$408,700.

On December 5, 2003, the ARC approved a 7,043-acre addition, known as the Four Creeks Forest tract, to the project boundary in Nassau County. The fee-simple acquisition, sponsored by the SJRWMD, consisted of one landowner, Rayonier Timberlands Operating Co. LP, and a 2002 taxable value of \$1,478,838.

2004

On December 3, 2004, the ARC approved a 3,500-acre addition, known as the Bull Creek tract, to the project boundary in Clay County. The fee-simple acquisition, sponsored by the SJRWMD, consisted of one landowner, Ventura LLC, and a taxable value of \$760,646.

2006

On June 30, 2006, the Board of Trustees purchased 1,651 acres within the Florida Forever project boundary.

2007

On February 16, 2007, the ARC approved a fee-simple, 2,665-acre addition to the Bull Creek portion of the project boundary. It was sponsored by the SJRWMD, consisted of one landowner, 1621 Venture II LLC, nine parcels, and a taxable value of \$445,189. The FFS will manage these essential parcels

2010

On November 5, 2010, DSL purchased 15 acres (Rayonier Forest Resources, L.P.--\$18,108 with FF funds) for FFS to manage.



2011

On April 25, 2011, 3.95 acres in Four Creeks State Forest/Pacett) were donated. FFS will manage.

On December 9, 2011, ARC placed this project in the Partnerships and Regional Incentives category of Florida Forever projects.

2018

On February 16, 2018, ARC voted to expand the boundary of the project to include approximately 300 acres in Nassau County (Studdard Tract), a partial inholding within the Four Creeks State Forest.

ARC also voted to add a parcel to the Northeast Florida Timberlands and Watershed Reserve during the August 2018 meeting. This 52-acre parcel in Nassau County is an inholding in the Four Creeks State Forest, near Highway A1A.

Coordination

In 1992, the 172-acre Jacksonville-Baldwin Rail Trail was acquired with Florida Greenways and Trails funds. This trail which meanders through the project is managed by the City of Jacksonville. The SJRWMD is an acquisition partner in areas of the project to help protect the multiple creeks and rivers. The National Guard Bureau through a Memorandum of Agreement (MOA) is an acquisition partner in areas of the project to help buffer and prevent encroachment of Camp Blanding. TNC, City of Jacksonville, Duval County, FCT, and the U.S. Navy are considered partners in this project.

Management Policy Statement

The FFS proposes to manage the project under a multiple-use management regime consistent with the FFS management of the Cary State Forest, the Jennings State Forest and the Cecil Field Conservation Corridor, all of which are adjacent to this project. The acquisition goals and objectives as approved by ARC would include timber management and restoration, low-impact diverse recreation uses, and management of archaeological and historic sites, habitat and other biological resources.



Management Prospectus

Qualifications for state designation

The project's size and diversity make it desirable for use and management as a state forest. Management by the FFS as a state forest is contingent on acquiring fee-simple title to the core parcels adjacent to the existing state forests and to approximately 60 percent of the project.

Manager

FFS is recommended to be the lead managing agency.

Conditions affecting intensity of management

Much of the parcel has been disturbed by past pine plantings and will require restoration work. This area of Florida is experiencing rapid urban growth, so that any prescribed burning to restore the forest will have to be carefully planned. The level of management and the related management costs are expected to initially be high to obtain necessary information to restore and manage portions as a state forest. It is recognized that a portion of the project will be less-than-fee simple. This technique is valuable on the fringes of urban growth because it allows the landowners to manage the property as they have been managing it, and continuing to produce forest products for Florida's economy, while protecting the property from conversion to urban growth.

Timetable for implementing management and provisions for security and protection of infrastructure

Once the core areas of the project are acquired and assigned to the FFS, initial public access will be provided for diverse, low-intensity outdoor recreation activities. Initial and intermediate management efforts will concentrate on site security, public and resource management access, prescribed burns, reforestation, and restoration activity.

Revenue-generating potential

Timber sales will be conducted as needed to improve or to maintain the desirable ecosystem conditions. These sales will primarily take place in the marketable pine stands and will provide a variable source of revenue, depending on a variety of factors. The existing condition of the timber stands on the property is such that the revenue-generating potential is expected to be moderate. Other compatible state forest sources of income will be considered. It is anticipated that management funding will come from the Conservation and Recreation Lands Trust Fund.

Cooperators in management activities

The FFS will cooperate with, and seek the assistance of, other state agencies, local government agencies, other interested parties as appropriate, and with the Florida Natural Areas Inventory

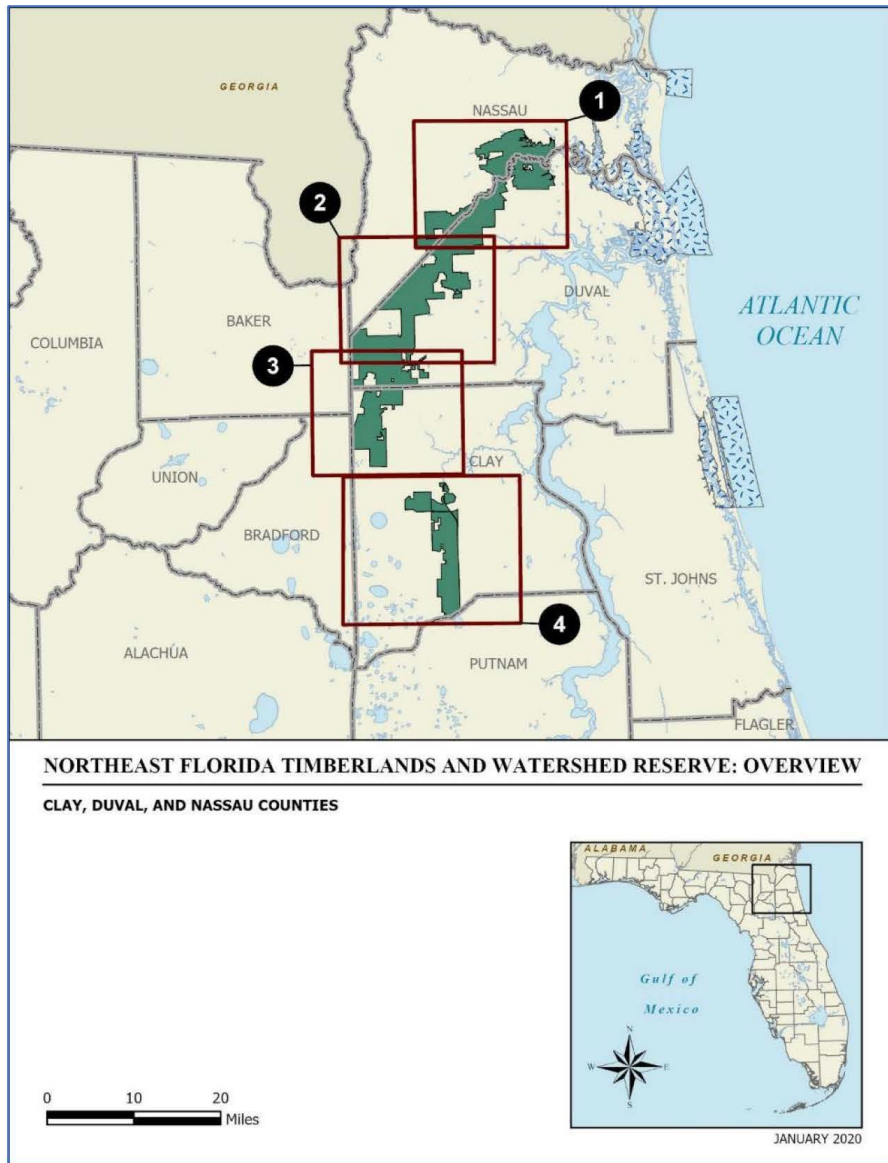


(FNAI). The FFS intends to coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) regarding game and non-game management activity and related public use of the property.

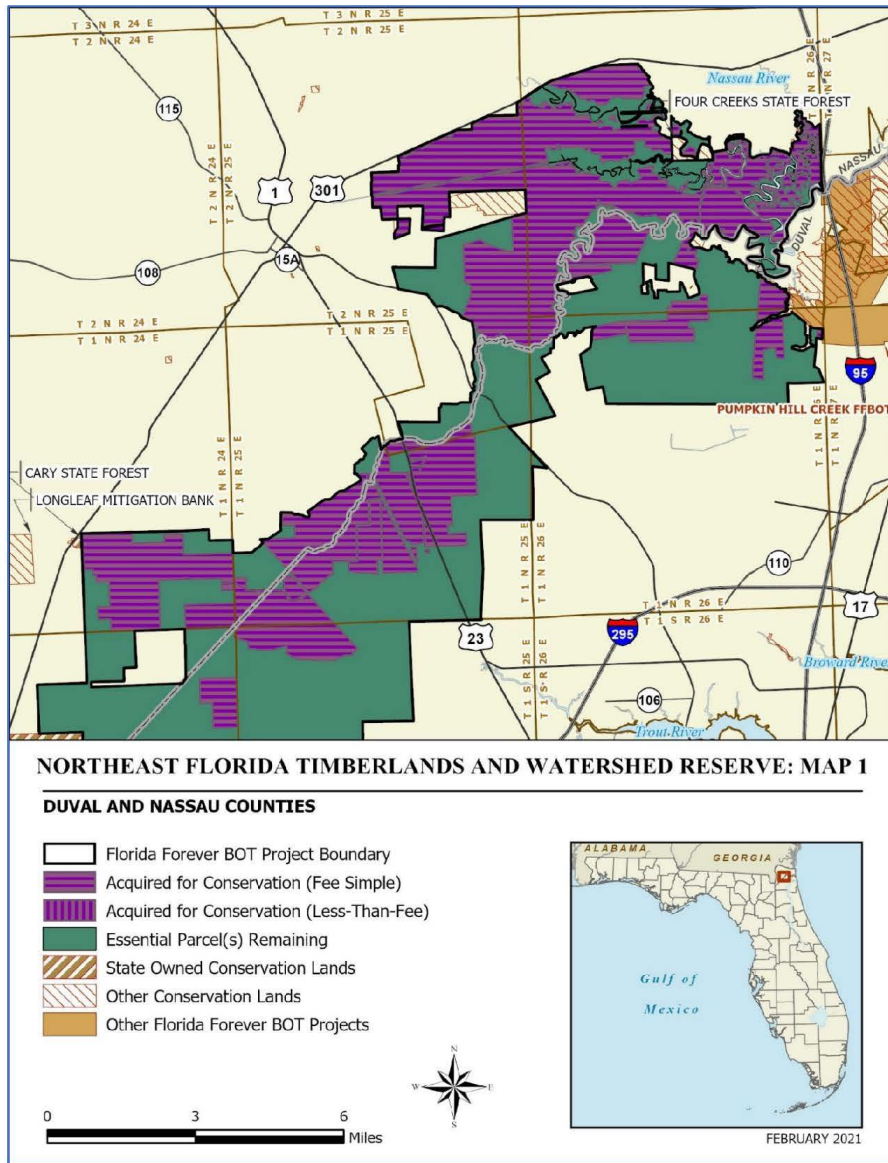
Management Cost Summary

<u>FWC</u>	<u>Cost</u>
Source of Funds	CARL
Salary (4 FTEs)	\$154,357
Expense	\$620,000
OCO	\$148,075
TOTAL	\$887,007

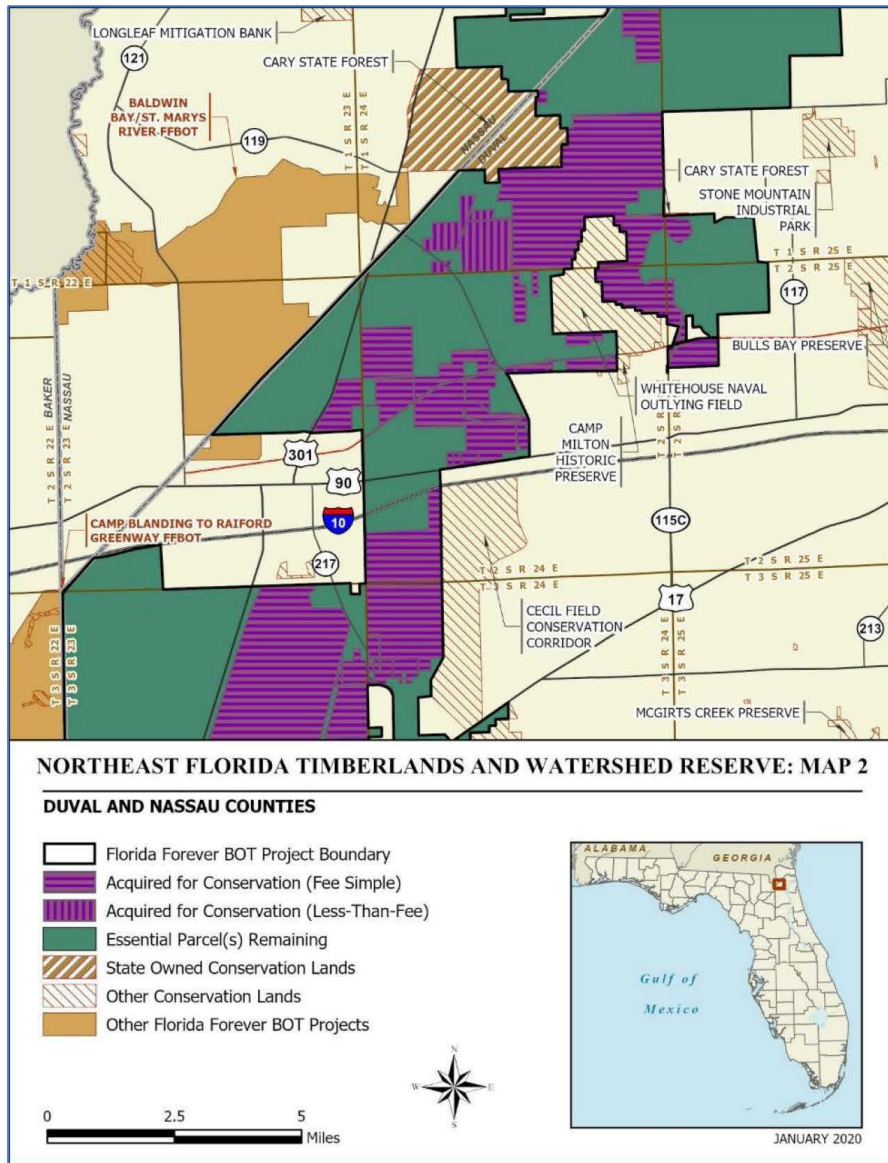
Source: Management Prospectus as originally submitted



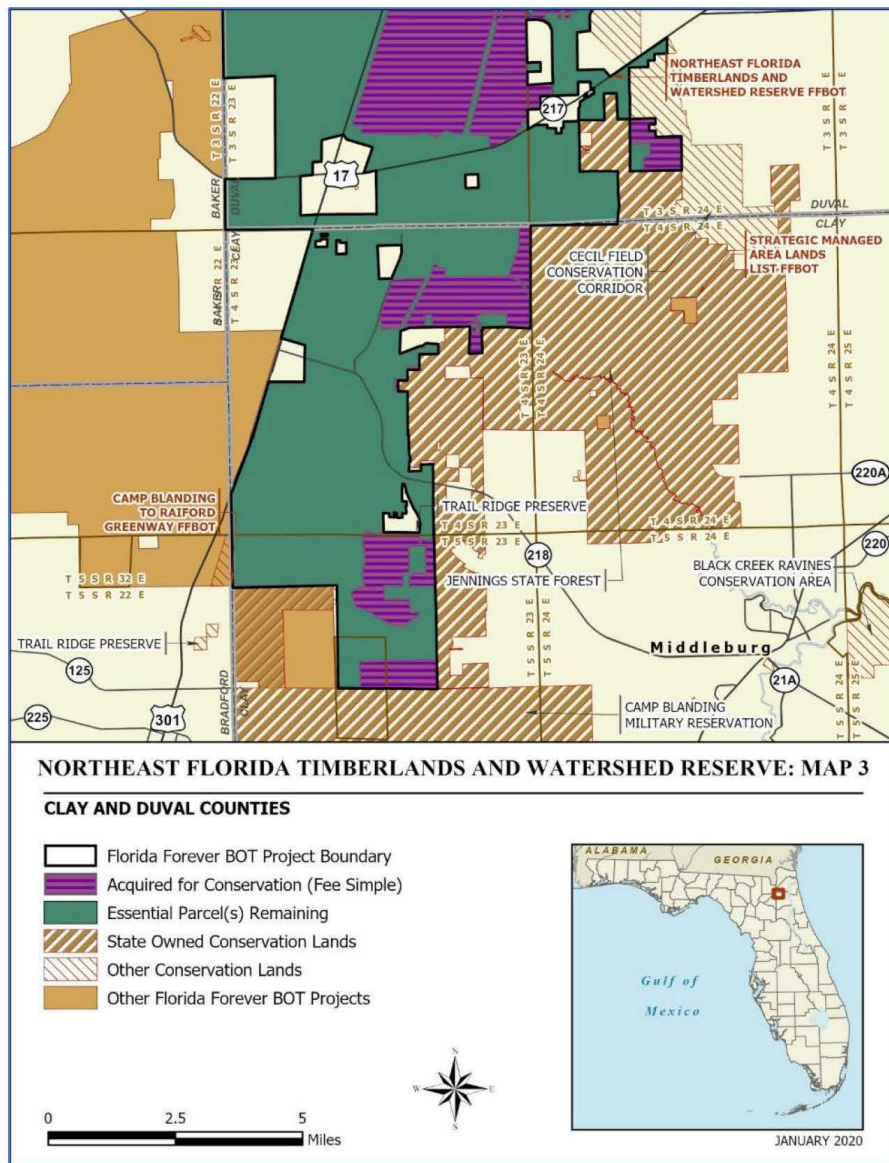
Map 1 : FNAI, January 2021



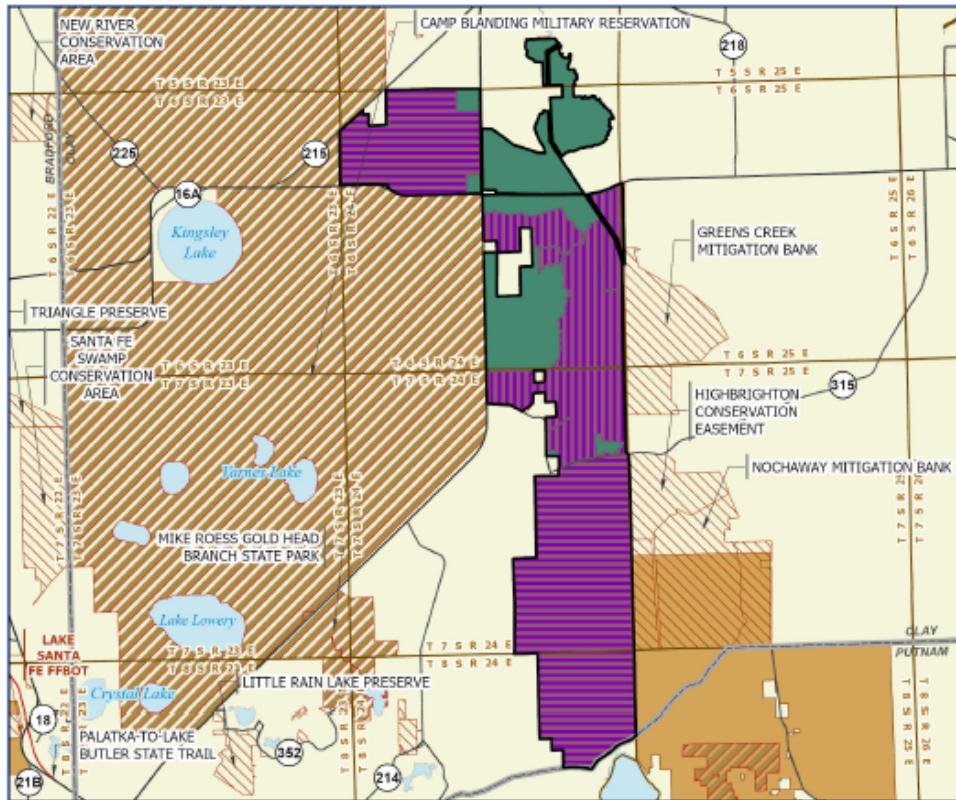
Map 2 : FNAI, January 2021



Map 3 : FNAI, January 2021



Map 4 : FNAI, January 2021



NORTHEAST FLORIDA TIMBERLANDS AND WATERSHED RESERVE: MAP 4

CLAY COUNTY

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- Acquired for Conservation (Less-Than-Fee)
- Essential Parcel(s) Remaining
- State Owned Conservation Lands
- Other Conservation Lands
- Other Florida Forever BOT Projects

0 3 6
Miles



JUNE 2020

Map 5 : FNAI, January 2021