

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 9 (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 11 (II.A.4)
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	Page 12 (II.B.2)
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	Page 10 (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 16 (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 16 (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 16 (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 12 (II.B.1)
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	Page 10 (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 13 (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 13 (II.B.4); Page 16 (II.D.6); Page 17 (II.E); Page 18 (III); Page 23 (IV); Page 36 (V); Page 43 (VI); Page 49 (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 15 (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 17 (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 22-23 (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 18 (II.E.6); Page 22 (III.C); Page 29-30 (IV.C.2-3); Page 49 (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 13 (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 16 (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 8 (I.C Goal 7); Page 23 (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 13 (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 46 (VI.C)
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	Page 15 (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 18 (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 18 (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 18 (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 24 (IV.A); Exhibit I
33	Insert FNAI based natural community maps when available.	ARC consensus	Exhibits O, 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 26 (IV.C); Exhibits J, M, N
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 33 (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 33 (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 33 (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 26 (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 29 (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 5 (I.C); Page 22-23 (III.C,D); Page 23 (IV); Page 43-44 (VI.A-B); Page 49 (VII)
42	Habitat Restoration and Improvement	259.032 & 253.034	Page 23 (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 5 (I.C); Page 49 (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 5 (I.C)
42-C.	The associated measurable objectives to achieve the goals.		Page 5 (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 5 (I.C); Page 43 (VI); Page 49 (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 14 (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 10 (II.A.2); Page 11 (II.A.4); Page 14 (II.C); Page 49 (VII); Exhibits B, J, M, Q, S
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034 & 259.032 ↓	Page 43 (VI); Exhibit N
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 5 (I.C. Goal 1); Page 43 (VI); Page 49 (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 43 (VI); Page 49 (VII)
44-E.	Budgets (see requirement for #42-E).		Page 14 (II.C.4); Exhibit U
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032 & 253.034	Page 26 (IV.C)
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 7 (I.C Goal 4); Page 26 (IV.C.1); Page 49 (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 26 (IV.C.1); Page 49 (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 26 (IV.C.1); Page 49 (VII)
45-E.	Budgets (see requirement for #42-E).		Page 14 (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 32 (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 32 (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 47 (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 47 (VI.D)
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 8 (I.C Goal 5); Exhibit O
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 8 (I.C Goal 5)
48-C.	Measurable objectives (see requirement for #42-C).		Page 8 (I.C Goal 5)
48-D.	Related activities (see requirement for #42-D).		Page 47-48 (VI.D,E); Page 49 (VII)
48-E.	Budgets (see requirement for #42-E).		Page 14 (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 14 (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 24 (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 25 (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 24 (IV.B); Page 49 (VII)
53	Hydrological Preservation and Restoration	259.032 & 253.034 ↓	Page 24 (IV.B)
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Page 8 (I.C. Goal 7); Page 24 (IV.B)
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 8 (I.C. Goal 7)
53-C.	Measurable objectives (see requirement for #42-C).		Page 8 (I.C. Goal 7)
53-D.	Related activities (see requirement for #42-D).		Page 8 (I.C. Goal 7); Page 24 (IV.B)

53-E.	Budgets (see requirement for #42-E).		Page 14 (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 19 (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 19 (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 22-23 (III.C,D); Exhibit H
57	Cultural and Historical Resources	259.032 & 253.034	Page 18 (III)
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 8 (I.C. Goal 6)
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 8 (I.C. Goal 6)
57-C.	Measurable objectives (see requirement for #42-C).		Page 8 (I.C. Goal 6)
57-D.	Related activities (see requirement for #42-D).		Page 22-23 (III.C,D)
57-E.	Budgets (see requirement for #42-E).		Page 14 (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 14 (II.C); Exhibit D
59	Capital Facilities and Infrastructure	259.032 & 253.034	Page 14 (II.C.)
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Page 9 (I.C. Goal 8); Page 14 (II.C.)
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Page 9 (I.C. Goal 8); Page 14 (II.C.)
59-C.	Measurable objectives (see requirement for #42-C).		Page 9 (I.C. Goal 8); Page 14 (II.C.)
59-D.	Related activities (see requirement for #42-D).		Page 14 (II.C); Page 36 (V)
59-E.	Budgets (see requirement for #42-E).		Page 14 (II.C.4); Exhibit U
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034	Page 36 (V); Exhibit D
61	Public Access and Recreational Opportunities	259.032 & 253.034	Page 36 (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 13 (II.B.4); Page 18 (II.E.5,6); Exhibits A, B, C, D
61-E.	Budgets (see requirement for #42-E).		Page 14 (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 5 (I.C.); Page 49 (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 14 (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 14 (II.C.4); Exhibit U
68	A statement of gross income generated, net income and expenses.	18-2.018	Page 14 (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
GOETHE STATE FOREST
LEVY AND ALACHUA 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
GOETHE STATE FOREST



Approved by:

Richard Dolan, Director
Florida Forest Service

Date

James Roberts, Chief
Forest Management Bureau

Date

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

Ten-Year Management Accomplishment Summary	Exhibit A
Boundary and Roads Map.....	Exhibit B
Optimal Management Boundary Map	Exhibit C
Facilities, Recreation, and Improvements Map	Exhibit D
Tract and Acreage Map.....	Exhibit E
Proximity to Significant Managed Lands	Exhibit F
DHR State Report on Archaeological and Cultural Sites	Exhibit G
Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands	Exhibit H
Soil Survey Map and Descriptions	Exhibit I
FDEP Outstanding Florida Waters	Exhibit J
Water Resources and BMAP Maps	Exhibit K
FNAI Managed Area Tracking Record.....	Exhibit L
FWC Listed Species Occurrence Records	Exhibit M
GSF Ten-Year Fire History	Exhibit N
Invasive Species Map	Exhibit O
Current FNAI Natural Communities Map	Exhibit P
Historic FNAI Natural Communities Map	Exhibit Q
Land Management Reviews (2018 & 2023).....	Exhibit R
Compliance with Local Comprehensive Plan (City of Newberry & Levy County).....	Exhibit S
State Forest Management Plan Advisory Group Summary	Exhibit T
State Forest Summary Budget	Exhibit U
Arthropod Control Plans	Exhibit V
Florida Forever Project	Exhibit W

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service
 COMMON NAME: Goethe State Forest (GSF)
 LOCATION: Alachua and Levy Counties
 ACREAGE TOTAL: 54,158.80 acres

Historic Natural Communities	Approximate Acreage*
Mesic Flatwoods	17,576
Sandhill	9,227
Wet Flatwoods	8,733
Dome Swamp	6,533
Basin Swamp	5,775
Hydric Hammock	1,816
Scrubby Flatwoods	1,150
Basin Marsh	1,077
Sandhill Upland Lake	762

Historic Natural Communities	Approximate Acreage*
Depression Marsh	336
Xeric Hammock	248
Bottomland Forest	234
Floodplain Marsh	214
Floodplain Swamp	188
Upland Mixed Woodland	143
Wet Prairie	109
Upland Hardwood Forest	100
Sinkhole	33

* Rounding errors exist

TIITF LEASE AGREEMENT NUMBER: 3976

USE: Single ____ Multiple X

MANAGEMENT AGENCY

Florida DACS, Florida Forest Service
 Florida Fish and Wildlife Conservation Commission
 Southwest Florida Water Management District
 Suwannee 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
 Water Resource Protection and Restoration
 Historical and Archaeological Resource Management

DESIGNATED LAND USE:

Multiple-Use State Forest

SUBLEASES:

None

ENCUMBRANCES:

Three Power Lines, Three Gas Lines

TYPES OF ACQUISITION:

Preservation-2000 and Florida Forever

UNIQUE FEATURES:

Includes many scattered remnant cat-faced longleaf pine trees; older longleaf/slash pine flatwoods supporting a thriving red-cockaded woodpecker population; a nine-foot diameter bald-cypress tree which is listed as being the sixth largest in the State of Florida.

ARCHAEOLOGICAL / HISTORICAL:

111 known sites

MANAGEMENT NEEDS:

Restoration and maintenance of native ecosystems

ACQUISITION NEEDS:

249,840 Acres of Optimal Management Boundary

SURPLUS ACREAGE:

None

PUBLIC INVOLVEMENT:

State Forest Liaison Committee, Management Plan Advisory Group and public hearing, 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

Goethe State Forest (GSF) is a 54,158.80-acre state forest located in both Levy and Alachua Counties, Florida. The forest is named for Mr. J. T. Goethe, from whom the original tract was purchased in 1992. GSF was acquired under the Preservation 2000 and the Florida Forever programs.

The major portion of GSF is located in southeastern Levy County near the Gulf of Mexico. A smaller area of GSF, called the Watermelon Pond Tract, is north of the main tract, and is located on both sides of the Levy/Alachua county line. There are six tracts on GSF: Apex, Black Prong, Cow Creek, Daniel's Island, Stein, and Watermelon Pond. See Exhibit E.

GSF contains one of the largest, high quality longleaf-pine flatwoods communities left in Florida, which supports a growing red-cockaded woodpecker (*Dryobates borealis*) (RCW) population and has many old cat-faced longleaf pine trees scattered throughout the forest. These trees are remnants from past naval stores operations that occurred in Levy County and hold some historical significance. They are also the primary source of natural cavity trees for the RCW population on GSF.

The forest is home to the Goethe Giant, the sixth largest bald cypress in the State of Florida. Natural communities on GSF include mesic flatwoods, wet flatwoods, dome swamp, sandhill, and basin swamp. Rare animal species found on the forest include the Florida black bear, gopher tortoise, southern fox squirrel, and bald eagle. Rare plants include Florida hastecola and small ladies'-tresses.

Recreation opportunities abound at GSF with an extensive system of equestrian and hiking trails, overnight camping, hunting (Goethe WMA and Watermelon Pond WEA), fishing, and picnicking sites.

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 GSF resources through a stewardship ethic to assure they are available for future generations.”

Management strategies for GSF emphasize the multiple-use concept, as defined in sections 253.034(2)(a) and 589.04(3), Florida Statutes (F.S.). Implementation of this concept will utilize and conserve state forest resources in a harmonious and coordinated combination that will best serve the people of the State of Florida, and that is consistent with the purpose for which GSF was acquired. Multiple-use management for GSF will be accomplished with the following strategies:

- Practice sustainable forest management for the efficient generation of revenue and in support of state forest management objectives;
- Provide for resource-based outdoor recreation opportunities for multiple interests;
- Restore and manage healthy forests and native ecosystems ensuring the long-term viability of populations and species listed as endangered, threatened, or rare, and other components of biological diversity, including game and non-game wildlife, and plants;
- Protect known archaeological, historical, and cultural resources;
- Restore, maintain, and protect hydrological functions, related water resources, and the health of associated wetlands and aquatic communities; and

- Provide research and educational opportunities related to natural resource management.

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

B. Past Accomplishments

Data regarding past management activities and public use on the GSF have been compiled monthly and are available from the GSF manager. A table has been prepared for this plan that summarizes the accomplishments for each of the past 10 years. See Exhibit A. The table does not attempt to account for all activities on GSF but summarizes major activities. It does not list the multitude of daily activities and public interactions involved in managing GSF. Since the approval of the previous management plan in 2013, there have been numerous events, developments, and accomplishments. Among the most notable have been the following:

- Forest Management
 - Conducted annual forest inventory
 - Planted more than 1,300,000 containerized longleaf pines on 1,850 acres
 - Harvested more than 211,000 tons of timber from approximately 5,900 acres
 - Permitted 33 total apiary sites from 14 total lessees on GSF.
 - Monitored 111 archaeological or historical sites
- Fire Management
 - Conducted 225 prescribed burns on 93,018 acres
 - Maintained 270 miles of firelines
- Road/Boundary Management
 - Constructed 31.63 miles of forest roads
 - Improved or rebuilt 62.81 miles of forest roads
 - Maintained 169 miles of forest boundary
- Recreation Management
 - Hosted 1,746,402 day-use forest visits
 - Hosted 11,292 overnight primitive camping visits
 - FFS staff planned and facilitated 1 Operation Outdoor Freedom (OOF) hunt on GSF giving 5 disabled veterans a distinctive recreation experience
- Biological Management
 - Monitored for feral hogs, removing 662
 - RCW population reached 74 potential breeding groups
 - 30 acres of old field planted with native ground cover seed collected from GSF
 - Actively monitor and control 11 invasive plant species across 281 acres

- Education / Public Outreach
 - Hosted 17 forest-related program/tour events (local school programs, clubs, and professional groups)
 - Supported 90 research and/or specimen collection projects
 - Received 7,902 hours of work from forest volunteers

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

The following goals and objectives provide direction and focus of management resources for the next ten-year planning period. Funding, agency program priorities, and the potential for wildfire or other natural disasters during the planning period will determine the degree to which these objectives can be met. Management activities on GSF 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 recreational value.

The management activities listed below will be addressed within the ten-year management period and are defined as short-term goals, long-term goals, or ongoing goals. Short-term goals are goals that are achievable within a two-year planning period, and long-term goals are achievable within a ten-year planning period. Objectives are listed in priority order for each goal. 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 Recreational Opportunities**

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

Performance Measure: Number of visitor opportunities per day.

Objective 2: Continue to safely integrate human use into GSF, following 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 3: 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 recreational users, etc.), environmental group representatives, and other public/private entities. (Ongoing objective)

Performance Measures:

- Liaison Committee remains organized
- Annual meetings continue

Objective 4: 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 cooperators 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 5: Evaluate the potential for additional public access and recreation areas on GSF that are compatible with multiple-use management. Recreation opportunities will fall under the scope of multiple-use management in accordance with watershed protection, conservation, and 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 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

Objective 7: Increase number of available primitive camp sites by up to 12. The proposed sites will be located at Tidewater, Watermelon Pond, and Black Prong. (Short-term objective)

Performance Measure: Number of primitive sites added

Objective 8: Establish a trailhead and associated hiking trails near Cubberly Pond. (Short-term objective)

Performance Measures:

- Trailhead established
- Miles of trails installed

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

Objective 1: GSF currently contains approximately 43,182 acres of fire-dependent communities. GSF 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 four (4) years for most fire-dependent communities, FFS will attempt to conduct prescribed burns on an average of approximately 12,000 to 18,000 acres per year. Currently, FFS staff estimates 19,800 acres at GSF are within the desired fire-return interval. (Ongoing objective)

Performance Measures:

- Annual number of acres burned
- 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 GSF 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:

- Evaluations complete
- Should fuel reduction be 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. Use direct seeding to restore native groundcover on heavily degraded areas. (Ongoing objective)

Performance Measures:

- Number of acres restored
- Number of acres direct seeded

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

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

Performance Measures:

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

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

Objective 3: Conduct site assessment of wetland plant community health with an emphasis on isolated ephemeral wetlands essential for listed and rare species. In collaboration with FWC, implement restoration based on available resources. (Ongoing objective)

Performance Measures:

- Acres of wetlands surveyed
- Acres of wetlands restored

➤ **GOAL 5: Invasive Species Management and Control**

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

Objective 2: Conduct a site assessment to identify needs for feral hog control. Improve feral hog control outcomes by improving current management techniques and pursuing additional resources. (Short-term objective)

Performance Measures:

- Site assessment completed
- Establish and implement plan to address control and restoration needs
- Number of hogs removed

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

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

Performance Measure: Documentation of known sites

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

Performance Measure: Number of sites monitored, and 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 all applicable Silviculture Best Management Practices (BMPs). (Ongoing objective)

Performance Measure: Percent compliance with Silviculture BMPs

Objective 2: Conduct or obtain a site assessment/study to identify potential hydrological restoration needs. (Ongoing objective)

Performance Measure: Assessment conducted

Objective 3: Close, rehabilitate, or restore roads, fire lines, and trails that are causing hydrologic alterations or negatively impacting water quality. (Ongoing objective)

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

Objective 4: Complete a hydrological assessment on Ten Mile Creek at South Gasline Road. Reconstruct South Gasline Road to meet assessment requirements. (Short-term objective)

Performance Measure:

- Assessment completed.
- Miles of South Gasline Road reconstructed.

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

Objective 1: GSF staff, along with help from volunteers and/or user groups, will continue maintenance of Office/Shop/Visitor Center, four (4) picnic pavilions, four (4) bathrooms, twelve (12) primitive camp sites, seven (7) parking areas and trailheads, 137.75 miles of trails, and 68.9 miles of primary and secondary roads. (Ongoing objective)

Performance Measure: The 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 GSF 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 each year
- Annual updates of the Five-Year Boundary Survey and Maintenance Management Plan completed

Objective 4: Demolish and reforest former youth academy facilities located in the Daniel's Island Tract. (Short-term Objective)

- **Performance Measure:** Demolition Complete

II. Administration Section

A. Descriptive Information

1. Common Name of Property

The common name of the property is Goethe State Forest.

2. Legal Description and Acreage

Total forest acreage is 54,158.80 acres located in Alachua and Levy Counties. Forest boundaries are identified on maps in Exhibit B.

The main portion of GSF, comprised of the Black Prong, Cow Creek, Apex, Stein, and Daniel's Island Tracts, is located in Levy County, in all or part of Section 36 in Township 13 South, Range 16 East; Sections 4, 9, 10, 14, 15, 16, 21, 22, 27, 28, 29, 30, 31, 32, 33 and 34 in Township 13 South, Range 17 East; Sections 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17, 18, 19, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34 and 35 of Township 14 South, Range 17 East; Sections 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36 in Township 15 South, Range 17 East; Sections 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14 and 15 in Township 16 South, Range 17 East.

The Watermelon Pond Tract is located in both Alachua and Levy Counties. In Alachua County, the Tract is located in all or part of Section 31, Township 10 South, Range 17 East, Sections 5, 7, 9, in Township 11 South, Range 17 East. In Levy County, the Tract is located in all or part of Sections 14, 15, 17, 21, 23, and 24 of Township 11 South, Range 17 East, Section 1 in Township 12 South, Range 17 East and in Sections 6, 7, 8, 17 and 18 of Township 12 South, Range 18 East.

See Table 1 for GSF acreage by funding source.

Table 1. GSF Acreage by Funding Source

Funding Source	Acres
CARL / Preservation 2000	49,296.68
FFS / Preservation 2000	162.86
FFS / Florida Forever	3,936.63
Mitigation	127.09
FDOT Donation	635.54

A complete legal description of lands owned by the Board of Trustees of the Internal Improvement Trust Fund (TIITF) is on record at the Goethe State Forest Office, FDEP, Division of State Lands in Tallahassee, and the FFS State Office in Tallahassee.

3. Proximity to Other Public Resources

Lands managed by state, federal, or local governments for conservation of natural or cultural resources that are located within approximately 10 miles of the GSF are included in Exhibit F and Table 2.

Table 2. Nearby Public Conservation Land and Easements

Tract	Agency	Distance
Hiers Conservation Easement	FFS	Adjacent W
Gulf Hammock Conservation Easement	SRWMD	Adjacent W
Watermelon Pond WEA	FWC	Adjacent N
Watermelon Pond – Gladman Tract	Alachua County	Adjacent N

Tract	Agency	Distance
Henry Beck Park	Levy County	3 miles W
Gulf Hammock Wildlife Management Area	FWC	5 miles W
Marjorie Harris Carr Cross Florida Greenway	DRP	5 miles S
Dudley Farm Historic State Park	DRP	7 miles NE
Barr Hammock Preserve	Alachua County	9 miles E
Halpata Tastanaki Preserve	SWFWMD	9 miles SE
Rainbow Springs State Park	DRP	10 miles E
Waccasassa Bay Preserve State Park	DRP	10 miles W
Devils Hammock Wildlife Management Area	FWC	10 miles NW
Withlacoochee State Trail	DRP	10 miles SE

DRP – Florida Division of Recreation and Parks

FWC – Florida Fish and Wildlife Conservation Commission

SRWMD – Suwannee River Water Management District

SWFWMD – Southwest Florida Water Management District

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

Goethe is a 54,158.80-acre state forest and was named for Mr. J.T. Goethe, from whom most of the land was purchased in 1992 under Florida's Conservation and Recreation Lands (CARL) program as part of the Levy County Forest/Sandhills Conservation and Recreation Project (Preservation-2000), and the Watermelon Pond Project (Preservation-2000/Florida Forever).

GSF is managed as six tracts. Five are contiguous, occurring in Levy County, and encompass the original Goethe purchase. These tracts are Black Prong, Cow Creek, Apex, Daniel's Island, and Stein. The Watermelon Pond Tract is north of the other five tracts, scattered across Levy and Alachua counties.

The portion of the Watermelon Pond Tract along the Watermelon Pond wetland feature, and the Watermelon Pond Wildlife and Environmental Area (WEA), and some scattered sandhills along County Road 337 is colloquially called Watermelon Pond North. Another area between County Road 335 and Bailey Mine is colloquially called Bailey. The FDOT Suncoast Parkway donation and nearby sandhills are called Cubberly Pond.

Table 3. Parcel Acquisition

Tract	Parcel Name	Lease Date	County	Acres
Goethe	Goethe	6/10/1993	Levy	43,619.54
Goethe	Knight	7/7/1997	Levy	117.50
Goethe	Rainbow Lakes	10/29/1997	Levy	40.40
Watermelon Pond	Loncala	12/30/1997	Alachua	1,364.82
Watermelon Pond	Loncala	12/30/1997	Levy	3,372.77
Goethe	Koeppel / Schwartz	10/22/1998	Levy	461.24
Goethe	Posey	10/22/1998	Levy	258.51
Watermelon Pond	Matson / Duffield / Walker	6/20/2000	Alachua	182.39

Tract	Parcel Name	Lease Date	County	Acres
Watermelon Pond	Johnson / Jones / Miller	11/1/2000	Levy	40.08
Goethe	Griffin	10/22/2001	Levy	4.96
Goethe	Cedars of Lebanon Cemetery*	10/22/2001	Levy	-2.67
Goethe	Conservation Fund	3/10/2003	Levy	3,224.58
Watermelon Pond	Witkowski	6/4/2008	Levy	61.35
Goethe	Spruce Creek	6/4/2008	Levy	127.09
Goethe	Sportsmen Land Trust	5/7/2019	Levy	650.70
Goethe	Suncoast Parkway	3/2/2021	Levy	635.54

* Partial release of lease

B. Management Authority, Purpose, and Constraints

1. Purpose for Acquisition / Management Prospectus

The purposes identified by the CARL/P-2000/Florida Forever programs for this acquisition in “Conservation and Recreation Lands Management Prospectus, Levy County Forest/Sandhills” are:

- To conserve and protect, through sustainable forest management practices, environmentally unique and irreplaceable lands that contains native flora and fauna that represent a natural area unique to, or scarce within, a region of this state or a larger geographical area.
- To conserve and protect native species habitat and endangered or threatened species (red-cockaded woodpeckers).
- To conserve, protect, manage, or restore important ecosystems, landscapes, and forests, if the protection and conservation of such lands is necessary to enhance or protect significant surface water, ground water, coastal, recreational, and timber resources, or to protect fish or wildlife resources which cannot otherwise be accomplished through local and state regulatory programs.
- To provide areas, including recreational trails, camp sites, and other amenities, for natural-resource based recreation.
- To preserve archaeological or historical sites.

The Watermelon Pond project purpose for acquisition is as follows (Exhibit W):

“In southwestern Alachua County the original landscape of dry longleaf pine sandhills pocked with marshes and lakes, important for wildlife, has been much reduced by agriculture and encroaching ranchettes. The Watermelon Pond project will conserve part of this original landscape for wildlife such as fox squirrels and sandhill crane and for plants like the scrub bay, for the protection of the groundwater supply of the county, and for the public to enjoy for years to come.”

2. Degree of Title Interest Held by the Board

The TIITF holds fee simple title to the property under Lease Agreement No. 3976. The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service acts as lead agency as stated in Management Lease No. 3976, FDACS Contract 1501.

3. Designated Single or Multiple-Use Management

GSF 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 Management Lease No. 3976.

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

- Timber Harvests – Timber harvests on GSF will be conducted to improve forest health, promote wildlife habitat, restore plant communities, and provide additional benefits.
- Recreation Fees – Fees are currently collected for day use, campgrounds, and vendor/special use permits.
- Apiary Leases – There are presently 33 total apiary sites available for lease.
- Fuelwood Sales – Permits are sold for the cutting and collection of firewood in designated areas of GSF where past fire suppression has led to severe oak encroachment.
- Miscellaneous Forest Product Sales – Other miscellaneous forest product sales, including but not limited to, palm fronds, fuelwood, pinecones, and pine straw.

5. Conformation to State Lands Management Plan

Management of GSF 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 GSF.

FFS makes every effort to comply with applicable statutes, rules, and ordinances when managing GSF. For example, when public facilities are developed on state forests, every effort is made to comply with Public Law 101-336, the Americans with Disabilities Act. As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where handicap access is

structurally impractical or where providing such access would change the fundamental character of the facility being provided).

7. Aquatic Preserve/Area of Critical State Concern

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

C. Capital Facilities and Infrastructure

1. Property Boundaries Establishment and Preservation

GSF boundaries, 125 miles in total, are managed by state forest personnel in accordance with the guidelines of the State Forest Handbook. There are 113 gates throughout GSF that require periodic maintenance. State forest boundaries are maintained by periodic clearing, repainting and reposting, and placement of state forest boundary signs by FFS personnel.

2. Improvements

Major FFS facilities on GSF include a headquarters site, featuring an office building, a mechanic's shop, four (4) pole barns, and a pump house. Several buildings, wells, a sewage treatment plant, and other infrastructure remains from the former Forestry Youth Academy site. See Exhibit D for a map of the buildings and improvements at GSF.

Buildings/Recreation infrastructure present on the GSF include:

- Office/visitor center, 2,000 sq. ft.
- Four (4) public restrooms, 600 sq. ft.
- Shop buildings and pole barns 7,000 sq. ft.
- Four (4) picnic pavilions, 1,500 sq. ft.
- Seven (7) trailheads with parking areas
- Four (4) pumphouses, 600 sq. ft.

3. On-Site Housing

There are no residences on GSF. Housing is prioritized based on FFS policy.

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

4. Operations Infrastructure

a. Operations Budget

For Fiscal Year 2022-2023 the total operating budget for GSF was \$184,394.67. This amount includes expenses, contractual services, Other Personal Services Employment (OPS), etc. A summary budget for GSF 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, equipment assigned to the GSF includes: six (6) pickup trucks, two (2) dump trucks, one (1) excavator, one (1) road grader, two (2) ATVs, three (3) UTVs, three (3) farm tractors, one (1) front-end loader, two (2) lawn mowers, and twenty (20) implements for the farm tractors.

c. Staffing

Currently, there are seven (7) full-time positions assigned exclusively to GSF. They include a Forestry Supervisor II, one (1) Senior Forester, two (2) Foresters, one (1) Biologist, and two (2) Park Rangers. One OPS Park Ranger is also assigned to GSF.

In addition, there is a Forestry Resource Administrator, District Biologist, and Recreation Coordinator, who share duties with the other six state forests in the Waccasassa Forestry Center. Forest Rangers from Levy County and the Waccasassa Forestry Center's other counties also provide support when needed.

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

To supplement the staff assigned to GSF, GSF staff will recruit interested volunteers who can bring needed experience and skills to assist with the management of the GSF recreation program, as well as resource management activities. The Waccasassa Forestry Center Recreation Coordinator assists at GSF and is directed by the Resource Administrator.

Additionally, a State Forest Liaison Committee comprised of private citizens and representatives of forest user groups meets bi-annually to provide input on forest management activities and share ideas with FFS staff to improve the state forest.

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 GSF. Uses determined as incompatible include but are not limited to: water resource development projects, water supply projects, storm-water management projects, sewage treatment facilities, linear facilities, off highway vehicle use, dumping, mining, and oil well stimulation (e.g., hydraulic fracturing/fracking), or as determined by law, regulation, or other

incompatible uses as described elsewhere in the management plan. Deadhead logging is not compatible with nor considered an appropriate use within or adjacent to GSF boundaries.

2. Additional Land Needs

Purchasing of additional land within the optimal management boundary would facilitate restoration, protection, maintenance, and management of the natural resources on GSF. 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 assessment consists of an examination of resource and operational management needs, public access and recreational use, and GIS modeling and analysis.

The evaluation of GSF by FFS has determined that all portions of the forest are being managed and operated for the original purposes of acquisition, as well as center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) F.S. Implementation of this concept will utilize and conserve state forest resources in a harmonious and coordinated combination that will best serve the people of the State of Florida.

4. Adjacent Conflicting Uses

There are no known inholdings with conflicting uses.

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 GSF.

GSF is fragmented by several highly traveled roads, including County Road 326, State Road 121, County Road 336, County Road 337, County Road 343, and US 19. These roads are a primary consideration when planning and conducting prescribed burns due to smoke management concerns.

5. Compliance with Local Comprehensive Plan

This plan was submitted to the Planning Division of the Levy County Planning and Zoning Department and the Alachua County Growth Management Office 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. The FFS does not consider GSF 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.

GSF has three in-holdings with ingress and egress access easements: A Duke Energy transmission line exists parallel to the western boundary line through the Cow Creek and Black Prong Tracts and a transmission line runs parallel to the Old Lebanon Grade in the southwest corner of the Cow Creek Tract. The total distance of these lines is 6.8 miles. The Florida Gas Transmission Company maintains a 6.2-mile gas line under Gasline Road through the Apex and Daniels Island Tracts, and a one-mile gas transmission line along on the western boundary of the Daniels Island Tract. Duke Energy and Sabal Trail have a collocated power and gas transmission corridor on the western boundary of Watermelon Pond tract. This easement is adjacent to Goethe for 1.4 miles.

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 cables where scenic considerations are desirable as well as encourage the development of use of wildlife crossings for unavoidable roadway development projects. Easements for such utilities are subject to the review and approval of the TIITF, and/or the Southwest Florida Water Management District (SWFWMD), the Suwannee River Water Management District (SRWMD). 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 No. 3976. Pursuant to the management lease, the lead managing agency may enter into further agreements or subleases on any part of GSF.

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

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

2. Law Enforcement

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

The FDACS Office of Agricultural Law Enforcement (OALE) will assist with open burning

and wildfire investigations as needed. The Levy County Sheriff's Office provides additional assistance as needed.

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

3. Wildland Fire

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

4. Public and Local Government Involvement

This plan has been prepared by FFS and will be carried out primarily by the FFS. FFS responds to public involvement through liaison committees, management plan advisory groups, public hearings, and through ongoing direct contact with user groups. Land Management Review Teams, as coordinated by the Division of State Lands, have conducted reviews of management plan implementation in 2018 and 2023. See Exhibit R. The review team's recommendations were addressed in this plan, as appropriate.

The plan was developed with input from the GSF Management Plan Advisory Group and was reviewed at a public hearing on May 29, 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 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 GSF. Volunteer activities may occur as one-time events or in association with recurring projects and routine maintenance. Additional volunteer recruitment will continue to assist furthering the FFS's mission.

6. Friends of Florida State Forests

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

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

III. Archaeological / Cultural Resources and Protection

A. Past Uses

Prior to acquisition by the Goethe family in the 1940s, most of the lands that are now GSF were used for farming, hunting, timber harvesting, and naval stores activities. Goethe Lumber

Company provided fire protection, ran a small herd of cattle, and conducted sporadic timber management. Old fields and open longleaf pine stands were planted in slash pine (*Pinus elliottii*) over the next four decades. Most of these plantings were small and irregular in shape.

Only two or three timber harvests occurred after the acquisition by the Goethe family, all after wildfires. Their largest timber harvest was a clearcut that followed a disastrous 6,000-acre wildfire in 1981. Replanting with slash pine followed each harvest. No naval stores operations occurred after acquisition by the Goethe family and no stumping operations were allowed.

Prescribed burning was conducted on portions of the property regularly until the mid-1970s. Most burns were backfires, usually at night. No prescribed fires occurred in the ten years prior to acquisition by the State. This area has been, and still is, associated with numerous lightning fires, primarily during May and June. Fire suppression in the past consisted of tractor-plow units of both FFS and Goethe Lumber Company. In general, this tract was not intensely managed for any resource for the fifty years prior to state acquisition, although the efforts of the Goethe family certainly protected it adequately from any major disturbances.

Since the State acquisition, which began in 1992, the FFS has both increased the amount of prescribed burning to reduce fuel loading and has increased the amount of thinning harvests to improve forest health and timber growth, as well as to also reduce the impacts from potential wildfires.

The 4,738-acre Watermelon Pond Tract was purchased by the State in 1997 from Loncala Inc. who had acquired ownership in 1920. They used the property primarily for forestry operations, but also sold cattle leases and conducted a limited naval store operation. Through the 1970s and 1980s, they mined tailings left over from the old phosphate pits dug on the property. These older mine pits were created at the turn of the 19th century during the phosphate boom in this part of Florida. The pits have since revegetated and provide for a unique landscape. Most of the property's timber was harvested just prior to State ownership.

The 3,225-acre Wolf Arbor parcel was purchased in 2002 from Mutual of New York Insurance Company. The land had been managed for timber previously by Canal Wood Corporation. This parcel was heavily cutover and replanted in slash and loblolly pine (*Pinus taeda*). "Off-site" planting is found on 425 acres of sandhill and scrubby flatwood communities. Many of the plantations were bedded and some of the cypress swamps were drained, harvested, bedded, and planted. The land now consists mainly of pre-merchantable planted slash and loblolly pine stands.

B. Archaeological and Historical Resources

A review of information contained in the Florida Department of State, DHR, Florida Master Site File has determined there are 105 recorded archaeological sites, one (1) historical cemetery, and five (5) resource groups within the designated area for GSF. Currently, none of the known sites on GSF are listed in the National Register of Historic Places and none are eligible. See Table 4 and Exhibit G for a cultural resource roster.

Table 4. Archaeological and Historical Sites on GSF

Site ID	Site Name	Site Type
AL04854	Wakeland	AR
AL04920	Watermelon Tram	RG
AL04921	PJ I	AR
AL04922	PJ II	AR
AL04923	PJ South	AR
AL04924	PJ Southeast	AR
AL04925	Fox Squirrel Hollow	AR
AL04926	Pop Top Gap	AR
AL04927	Flakeout	AR
AL04929	Edge Hammock	AR
AL04930	Watermelon Point	AR
AL04931	Nearside	AR
AL04932	Farside	AR
AL04941	Fire Ring	AR
AL05832	Sad Iron	AR
LV00245	North Prong Lebanon Station	AR
LV00246	Lebanon Lookout Tower Lebanon Station	AR
LV00247	Sapling Branch	AR
LV00248	Atlantic Railroad Section Houses	AR
LV00249	Little Sapling Branch	AR
LV00250	Sand Slough Burial Mound	AR
LV00251	Bottle Dump	AR
LV00253	Tidewater	AR
LV00254	Sand Slough 1 Tidewater	AR
LV00255	Sand Slough 2	AR
LV00256	Bench Mark 67 Tidewater	AR
LV00257	Little Pond Tidewater	AR
LV00258	Pipeline	AR
LV00259	Goethe	AR
LV00261	Lanier	AR
LV00262	Sand Slough 3	AR
LV00423	Doctor Thunder	AR
LV00424	Goethe Road Brick Pile	AR
LV00425	Doyle's Turpentine Still	AR
LV00429	Wolf Arbor 3	AR
LV00430	Wolf Arbor 4	AR
LV00431	Black Prong 1	AR
LV00433	Black Prong 3	AR
LV00507	Goethe Youth Center	AR

Site ID	Site Name	Site Type
LV00523	Hog Pond	AR
LV00525	Gator Nest	AR
LV00526	Buck Island Canoe Launch	AR
LV00530	Hog Pond Block	AR
LV00547	Apex	AR
LV00549	Bee Tree Ford	AR
LV00550	Horse Hole Creek	AR
LV00551	Abe Middleton Grave	CM
LV00552	Black Prong	AR
LV00553	Hospital Road Camp 8	AR
LV00554	Black Prong Trail	AR
LV00555	Watson's Brick Pile	AR
LV00556	Robin's Wishing Well	AR
LV00557	Steen	AR
LV00558	RCW Cluster 44	AR
LV00559	Cow Creek #1	AR
LV00560	Sand Spur Ridge	AR
LV00561	Sand Ridge Burnout	AR
LV00562	Sand Ridge #1	AR
LV00563	Sand Ridge Road #2	AR
LV00564	Hilltop Hammock	AR
LV00565	Herty Sherds	AR
LV00566	Sand Ridge Road #3	AR
LV00567	Eight Trailer Hill	AR
LV00568	George	AR
LV00569	Tort Scat	AR
LV00570	Big Flow	AR
LV00571	Race Pond South	AR
LV00572	Race Pond North	AR
LV00573	Debitage	AR
LV00574	Top Of The Arbor	AR
LV00575	Watermelon Outcrop	RG
LV00576	No Name Pond	AR
LV00577	Hilltop	AR
LV00578	Double Bridge I	AR
LV00579	Double Bridge II	AR
LV00580	Deer Sent Ridge	AR
LV00581	Old Camp Hammock	AR
LV00582	Site X	AR
LV00583	Griffis Road I	AR

Site ID	Site Name	Site Type
LV00584	Wag I	AR
LV00585	Wag II	AR
LV00586	Wag III	AR
LV00587	Wag IV	AR
LV00588	Borrow Top	AR
LV00589	Griffis Road II	AR
LV00590	Saddle Pen Hill	AR
LV00591	Hound Howler Hill	AR
LV00592	Eyes of Blue	AR
LV00593	Lithic University	AR
LV00594	Arm Rest Hammock	AR
LV00595	Ain't No Reason	AR
LV00596	Herman's Ford	AR
LV00597	Old Trail Hill	AR
LV00598	Bobby's Luncheon Hammock	AR
LV00599	Lewis Homestead	AR
LV00605	Blown Fuse	AR
LV00606	Hilltop TA	AR
LV00607	Tiny TA	AR
LV00608	Old Dock	AR
LV00609	Section 17 Mine	AR
LV00610	Mine-house ruins I	AR
LV00611	Mine-house ruins II	AR
LV00612	Watermelon Tram	RG
LV00613	Section 18 Mine	AR
LV00614	Bailey's Mine Tram	RG
LV00615	Section 7 Mine	AR
LV00616	Section 8 Mine and Tram	AR
LV00617	Bailey's Mine	AR
LV00637	ACL's Perry Cutoff	RG
LV00768	8LV768	AR
LV00769	8LV769	AR

AR – Archaeological Site

CM – Historical Cemetery

RG – Resource Group

Sensitive Areas maps are provided to personnel to help identify locations where protection is critical. Periodic monitoring by staff and law enforcement is also important to protection efforts. Where cultural sites are part of current or future public use areas, interpretation may be utilized to inform and educate the public.

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. See Exhibit H. Any significant ground disturbing activity proposal will be submitted to DHR’s Compliance and Review office for review prior to undertakings and allow the Division a reasonable opportunity to comment. Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of the Interim Management Guidelines.

D. Survey and Monitoring

Currently, four (4) local district FFS staff are trained by DHR as Archaeological Resource Management (ARM) monitors. The Waccasassa Forestry Center Recreation Coordinator is trained as an archaeological monitor and serves as the primary contact for historical issues. FFS will pursue opportunities for additional personnel to receive ARM Monitor training to facilitate protection of cultural resources. 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 state forest will be monitored at least annually. FFS field staff will monitor the listed sites to note condition and any existing or potential threats.

Any known archaeological and historical sites will be identified on maps to aid state forest 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 will 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 GSF is protection of the 54,158.80 acres of mesic flatwoods interspersed with cypress ponds, hardwood swamps, and high-quality sandhills 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 GSF. 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 GSF’s waterbodies and their associated water quality and native plants and animals.

GSF falls within the jurisdiction of the SWFWMD and SRWMD. FFS will coordinate with SWFWMD, SRWMD, 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 SWFWMD and SRWMD 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 GSF was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). The major soils listed by the NRCS include: Candler sand, Arredondo sand, Adamsville sand, and Lynne sand. Detailed information on all soils present on GSF may be found in Exhibit I.

2. Soil Protection

Management activities will be executed in a manner that minimizes negative impacts to the soil. As problems arise, corrective action will be implemented by FFS staff under the direction of the FFS Forest Hydrology Section in conjunction with recommendations as contained in the most current version of the Florida Silviculture BMP Manual.

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

B. Water Resources

The water resources on GSF perform essential roles in the protection of water quality, groundwater recharge, flood control, and aquatic habitat preservation. In the interest of maintaining these valuable resource functions, state forest management personnel will work with the FFS Hydrology Section to incorporate wetlands restoration into the overall resource management program as opportunities arise, particularly where wetlands systems have been impaired or negatively impacted by previous management activities or natural disasters. See Exhibit K for map of the water resources on GSF.

1. Resources

GSF contains five notable water courses and four named lakes. The five named streams are Black Prong, Cow Creek, North Prong, Ten Mile Creek, and Horse Hole Creek. None of these stream courses are navigable, even by canoe, except in unusually high water. All have been known to go completely dry during periods of extended drought however, for management practices and the implementation of Silvicultural Best Management Practices (BMP), these named streams have historically been treated as ‘perennial streams’. Numerous smaller branches and sloughs flowing into these five water courses cause GSF to be the headwaters for several major streams, including Cow Creek and the Wekiva River, which eventually empty into the Gulf of Mexico at Waccasassa Bay. Wekiva Spring, the source of the Wekiva River, lies outside the GSF boundary on The Creek at Wekiva, LLC property.

Deer Pen Pond and Buck Island Pond are two named open water ponds. Both of these open water bodies are shallow grassy ponds, often going dry except in the deeper holes. When water levels permit, the larger Deer Pen Pond can be utilized for recreation including canoeing and fishing. Hog Pond, a basin marsh, is dry during most years. GSF borders portions of Watermelon Pond, a large intermittent basin marsh. Several smaller marshes connected to Watermelon Pond have also been named, including Barrel Pond, Gosman Pond, and Cubberly Pond. Bailey Mine, a historic limerock quarry, consistently holds water. In addition, several very small sinkholes, springs, and seeps have been identified on the forest.

2. Water Classification

The FDEP's Standards Development Section reports that all of the surface waters adjacent to, or within four (4) miles of GSF are classified as Class III Waters (Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife), which is the statewide default classification under Rule 62-302.400, F.A.C.

According to subsection 62-302.700(9), F.A.C., the Levy County Forest/Sandhills Outstanding Florida Waters (OFW) boundary overlaps a portion of GSF. There are additional OFWs that are close by. OFWs located to the west of the forest are Waccasassa Bay State Preserve, and the Big Bend Seagrasses Aquatic Preserve. OFWs located to the south are the Lake Rousseau State Recreation Area, the Withlacoochee River System, the Rainbow River OFW, the Rainbow Springs Aquatic Preserve, and the Rainbow River State Park. See Exhibit J.

3. Water Protection

An objective for the acquisition and management of this public land was to optimize ecological restoration, protect and manage existing natural resources, and facilitate sustainable public use. Concerns over a continuous, usable source of fresh water requires emphasis on protecting this vital resource. Water resource protection measures, at a minimum, will be accomplished using BMPs as described in the most current version of Silviculture BMP Manual. The FFS will coordinate with the appropriate district office and/or DEP, as necessary, on activities pertaining to water resource protection and management. Any activities requiring water management districts permits will be handled accordingly. The FFS will work with the SWFWMD and SRWMD to ensure that levels and quality of ground and surface water resources are appropriately monitored.

4. Swamps, Marshes, and Other Wetlands

Maintenance of naturally occurring wetland communities is a high priority and will be accomplished through appropriate management activities, including prescribed fire and adherence to Silviculture BMPs. Integrated swamps and marshes in Goethe's upland communities are important contributors to ecosystem diversity. Historically, swamps and marshes have been fire excluded and firelines were installed in diverse ecotones. Within these systems hydrology remains largely undisturbed. Only the largest watercourses show apparent channelization or other historical drainage features. Restoration of these systems is a priority within this plan found under goals 4 and 7.

5. Wetlands Restoration

Wetlands restoration objectives on the state forest include erosion control, restoration of hydrology, 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 revegetation with native wetlands species, and project monitoring. Special emphasis will be placed on restoring hydroperiod and prescribed fire, where appropriate, to maintain and restore community structure and diversity. These activities may be conducted individually or concurrently and 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, GSF, with assistance from the FFS Forest Management Bureau, may pursue funding to develop and implement wetlands restoration projects. Additionally, cooperative research among FFS, other state agencies, and the federal government will provide valuable information in determining future management objectives of wetland restoration.

Goal 7 describes an ongoing program to evaluate GSF infrastructure, firelines, and fire effects to ensure its wetlands remain healthy. In addition, the effect of the gasline grade across Ten Mile Creek will be evaluated during this planning period.

Wetlands restoration will be coordinated with the SWFWMD, SRWMD, FWC, and DEP. 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 Plan

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.

The GSF is adjacent to the Rainbow Springs and Rainbow River BMAP. See Exhibit K.

C. Flora and Fauna Resources

1. Rare, Endangered, and Threatened Species

The intent of FFS is to manage GSF in a manner that will minimize the potential for wildlife species to become imperiled. FFS employees continually monitor the forest for threatened or endangered species while conducting management activities. Specialized management techniques may be used, as necessary, to protect or increase protection of rare, threatened, and endangered species, as applicable for both plants and animals. See Table 5.

Table 5. Rare, Endangered, and Threatened Species Documented on GSF

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Birds					
Bachman's sparrow	<i>Peucaea aestivalis</i>	G3	S3	N	N
Bald eagle	<i>Haliaeetus leucocephalus</i>	G5	S3	N	N
Florida burrowing owl	<i>Athene cunicularia floridana</i>	G4T3	S3	N	ST
Florida sandhill crane	<i>Antigone canadensis pratensis</i>	G5T2	S2	N	ST
Limpkin	<i>Aramus guarauna</i>	G5	S3	N	N
Little blue heron	<i>Egretta caerulea</i>	G5	S4	N	ST
Red-cockaded woodpecker	<i>Dryobates borealis</i>	G3	S2	E, PT	FE
Snowy egret	<i>Egretta thula</i>	G5	S3	N	N
Southeastern American kestrel	<i>Falco sparverius paulus</i>	G5T4	S3	N	ST
Swallow-tailed kite	<i>Elanoides forficatus</i>	G5	S2	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	DL	FT
Mammals					
Florida black bear	<i>Ursus americanus floridanus</i>	G5T4	S4	N	N
Florida mouse	<i>Podomys floridanus</i>	G3	S3	N	N
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	G3G4	S1	N	N
Southern fox squirrel	<i>Sciurus niger niger</i>	G5T3	S3	N	N
Herpetofauna					
American alligator	<i>Alligator mississippiensis</i>	G5	S4	SAT	FT(S/A)
Alligator snapping turtle	<i>Macrochelys temminckii</i>	G3G4	S3	N	N
Eastern kingsnake	<i>Lampropeltis getula</i>	G5	S1S2	N	N
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	G3	S3	N	N
Eastern indigo snake	<i>Drymarchon couperi</i>	G3	S2?	T	FT
Eastern tiger salamander	<i>Ambystoma tigrinum</i>	G5	S3	N	N
Florida kingsnake	<i>Lampropeltis floridana</i>	G2	S2	N	N
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	G4	S3	N	ST
Gopher frog	<i>Lithobates capito</i>	G2G3	S3	N	N
Gopher tortoise	<i>Gopherus polyphemus</i>	G3	S3	C	ST
Short-tailed snake	<i>Lampropeltis extenuata</i>	G3	S3	N	ST
Southern hognose snake	<i>Heterodon simus</i>	G2	S2S3	N	N
Striped newt	<i>Notophthalmus</i>	G2G3	S2	N	ST

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
	<i>perstriatus</i>				
Suwannee cooter	<i>Pseudemys concinna suwanniensis</i>	G5T3	S3	N	N
Invertebrates					
Eastern Meske's skipper	<i>Hesperia meskei straton</i>	G3G4T3	S2S3	N	N
Florida olive hairstreak	<i>Callophrys gryneus sweadneri</i>	G5T2	S2	N	N
Neamathla skipper	<i>Nastra neamathla</i>	G4	S2S3	N	N
North peninsular mycotrupes beetle	<i>Mycotrupes gaigei</i>	G2G3	S2S3	N	N
Punctate gopher tortoise onthophagus beetle	<i>Onthophagus polyphemi polyphemi</i>	G2G3T2T3	S2	N	N
Taper-tailed darter	<i>Gomphaeschna antilope</i>	G4	S4	N	N
Sandhill cellophane bee	<i>Colletes ultravalidus</i>	G2G3	S2?	N	N
Scalloped sootywing	<i>Staphylus hayhurstii</i>	G5	S2	N	N
Seminole crescent	<i>Anthanassa texana seminole</i>	G5T3	S2S3	N	N
Seminole skipper	<i>Hesperia attalus slossonae</i>	G3G4T3	S3	N	N
Plants					
Corkwood	<i>Leitneria floridana</i>	G3	S3	N	T
Crested fringed orchid	<i>Platanthera cristata</i>	G5	S3S4	N	T
Florida hasteola	<i>Hasteola robertiorum</i>	G1	S1	N	E
Florida spiny-pod	<i>Matelea floridana</i>	G2	S2	N	E
Godfrey's swampprivet	<i>Forestiera godfreyi</i>	G2	S2	N	E
Giant orchid	<i>Pteroglossaspis ecristata</i>	G2G3	S2	N	T
Green addersmouth orchid	<i>Malaxis unifolia</i>	G5	S3	N	E
Incised groove-bur	<i>Agrimonia incisa</i>	G3	S2	N	T
Lacelip ladiestresses	<i>Spiranthes laciniata</i>	G4	S3S4	N	S
Leafless beaked orchid	<i>Sacoila lanceolata var. lanceolata</i>	G4	S1	N	T
Little ladiestresses	<i>Spiranthes tuberosa</i>	G5	S3S4	N	T
Longlip ladiestresses	<i>Spiranthes longilabris</i>	G3	S3	N	T
October ladiestresses	<i>Spiranthes ovalis V. ovalis</i>			N	E
Many-flowered grasspink	<i>Calopogon multiflorus</i>	G2G3	S2S3	N	T
Piedmont jointgrass	<i>Coelorachis tuberculosa</i>	G3	S3	N	T
Pinewoods dainties	<i>Phyllanthus liebmannianus ssp. platylepis</i>	G4T2	S2	N	E
Pinkroot	<i>Spigelia loganioides</i>	G2	S2	N	E

Common Name	Scientific Name	FNAI Global Rank*	FNAI State Rank*	Federal Status*	State Status*
Scrub stylisma	<i>Stylisma abdita</i>	G3	S3	N	E
Small ladies'-tresses	<i>Spiranthes brevilabris</i>	G1	S1	N	E
Snowy orchid	<i>Platanthera nivea</i>	G3G4	S3S4	N	T
Southern tubercled orchid	<i>Platanthera flava</i>	G4	S3S4	N	T
Southern twayblade	<i>Neottia bifolia</i>	G4	S3S4	N	T
Threebirds orchid	<i>Triphora trianthophoros</i>	G4	S3	N	T
Variable-leaved Indian-plantain	<i>Arnoglossum diversifolium</i>	G2	S2	N	T
Yellow fringed orchid	<i>Platanthera ciliaris</i>	G5	SNR	N	T

* STATUS / RANK KEY

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

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

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

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

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

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.

Documented habitats include basin marsh, basin swamp, bottomland forest, depression marsh, dome swamp, floodplain marsh, floodplain swamp, hydric hammock, mesic flatwoods, sandhill, sandhill upland lake, scrubby flatwoods, sinkhole, upland hardwood forest, wet flatwoods, wet prairie, and xeric hammock.

b. Likely and Potential Habitat for Rare Species

In addition to documented occurrences, other rare or threatened species may occur on or near GSF. 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

The site is located within Watermelon Pond Florida Forever BOT Project, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program. See Exhibit W.

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 records of listed species occurrences or critical habitats around or within the confines of the property. This includes state and federally listed endangered or threatened species.

Specific findings by the FWC include:

- a. Records of striped newt (*Notophthalmus perstriatus*), Florida burrowing owl (*Athene cunicularia floridana*), American bald eagle (*Haliaeetus leucocephalus*), Florida black bear (*Ursus americanus floridanus*), Eastern indigo snake (*Drymarchon couperi*), red-headed woodpecker (*Melanerpes erythrocephalus*), common nighthawk (*Chordeiles minor*), gopher frog (*Lithobates capito*), gopher tortoise (*Gopherus polyphemus*), Florida scrub-jay (*Aphelocoma coerulescens*), Florida wormlizard (*Rhineura floridana*), swallow-tailed kite (*Elanoides forficatus*), summer tanager (*Piranga rubra*), eastern coachwhip (*Masticophis flagellum flagellum*), giant orchid (*Pteroglossaspis ecristata*), Florida deepdigger scarab beetle (*Peltotrupes profundus*), incised groove-bur (*Agrimonia incisa*), Bachman's sparrow (*Peucaea aestivalis*), Southeastern American kestrel (*Falco sparverius*), red-cockaded woodpecker (*Dryobates borealis*), taper-tailed darter (*Gomphaeschna antilope*), small ladies'-tresses (*Spiranthes brevilabris*), Southeastern fox squirrel (*Sciurus n. niger*), Florida hasteola (*Hasteola robertorum*), and American alligator (*Alligator mississippiensis*) were found on or within one mile of GSF.
- b. Strategic Habitat Conservation Areas were found within one mile of the property for Florida mouse (*Podomys floridanus*) and striped newt (*Notophthalmus perstriatus*).
- c. GSF is located within an area of moderate Species Richness which indicates the total number of species within potential habitat identified in a specific location.
- d. GSF 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.

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

FWC recommends the review of management guidelines in FWC's published Species Action Plans for the management of imperiled, rare, and focal bird species. The FWC Species Action Plans provide beneficial resource guidelines for habitat management and monitoring of the respective species. For reference, the FWC Species Action Plans can be accessed at www.MyFWC.com.

4. Game Species and Other Wildlife

Wildlife management plays an important role in the management of resources on GSF. FWC provides cooperative technical assistance in managing the wildlife and fish populations, determining hunting seasons, establishing bag and season limits, and overall law enforcement on GSF.

Notable wildlife species inhabiting GSF include white-tailed deer (*Odocoileus virginianus*), Florida black bear (*Ursus americanus floridanus*), red-cockaded woodpecker (*Dryobates borealis*), gopher tortoise (*Gopherus polyphemus*), southeastern fox squirrel (*Sciurus n. niger*), American kestrel (*Falco sparverius*), wood stork, (*Mycteria americana*) and wild turkey (*Meleagris gallopavo*).

GSF supports a large population of feral hogs (*Sus scrofa*). Due to their extremely destructive nature, removal of feral hogs is a priority. Nuisance trapping, hunting, and more aggressive methods may be utilized to control this population.

FFS and FWC cooperatively maintain approximately 40 acres of permanent wildlife openings and planted food plots on the GSF. Wildlife openings and food plots are 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 GSF. The current State Forest Handbook gives additional details for such things as snag management and retention.

5. Survey and Monitoring

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

a. Gopher Tortoises

Belt transect surveys for gopher tortoise burrows have been conducted by FFS and FWC staff opportunistically, as needed, but generally in advance of land management activities

that may impact tortoises (e.g., timber harvest). All surveys are done in cooperation with FWC. The FFS follows and utilizes the BMPs for gopher tortoises to assist in meeting management objectives for both the species and the communities in which it is found.

b. Florida Black Bear

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

c. Listed Plant Species

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

d. Other Rare Biota Surveys

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

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

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

6. Gopher Tortoise Recipient Site Assessment

The FFS has assessed the feasibility of establishing a gopher tortoise recipient site on GSF. In 2014, biologists from FWC conducted a line transect distance sampling protocol across 4,275 acres of GSF to determine the baseline population of tortoises across all suitable natural communities and soil types. After conducting the survey, FWC estimated that there was a population of 2,039 gopher tortoises across suitable habitat types, or about one tortoise per two acres, which is low enough that GSF could accept gopher tortoises pending a site-specific evaluation. To that end, staff on GSF have identified a roughly 283-acre parcel in the northwesternmost portion of the Watermelon Pond, abutting the Alachua/Gilchrist County boundary, which contains suitable soils and could be established as a recipient site.

However, based on the operational budget and staff assigned to the forest, the FFS does not have the financial or technical capacity to install a gopher tortoise recipient area on GSF. The FFS would require financial and technical assistance from FWC to establish a recipient site on GSF. 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 GSF resource needs and values of the present without compromising the similar capability of the future. Sustainable forestry involves practicing a land stewardship ethic that integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and aesthetics. This is accomplished by maintaining and updating accurate estimates of standing timber in order to assure that the timber resources retain their sustainability. Forest inventories will be updated on a continual basis according to guidelines established by the FFS Forest Management Bureau.

E. Beaches and Dune Resources

No beaches or dunes occur on the GSF.

F. Mineral Resources

No mineral deposits of commercial value are known to exist on GSF.

G. Unique Natural Features and Outstanding Native Landscapes

GSF contains a large contiguous area of natural longleaf pine flatwoods. GSF has many old cat-faced longleaf pine trees scattered throughout the forest. These trees are remnants from past naval stores operations that occurred in Levy County and hold some historical significance. They also are also the primary source of natural cavity trees for the red-cockaded woodpecker population on GSF.

GSF is the home to a very large bald cypress tree, which is among the largest in Florida. It is known as the Goethe Giant. The Goethe Giant and its considerable neighbors grow in a hydric hammock, a rare landscape.

The Watermelon Pond Tract offers some scenic vistas across the water and surrounding prairie. On a much smaller scale, Hog Pond in the Black Prong Tract offers a similar view.

Twenty-eight species of orchid have been found on GSF, making GSF one of the best places in the United States to view terrestrial orchids (Brown 2004).

H. Research Projects / Specimen Collection

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

All research to be considered on GSF must be in accordance with the guidelines stated in the State Forest Handbook. Any requests for research should be submitted in writing to the appropriate field staff to be forwarded to the Forest Management Bureau for approval. Requests must include: a letter outlining the purpose, scope, methodology, and location of the proposed research. Requests are subject to review by FFS Foresters, Biologists, the Forest Health Section, and the Forest Hydrology Section, as appropriate. Authorization to conduct research will require

that the investigator provide copies of any reports or studies generated from any research to the FFS and the GSF 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, studies, and/or specimen collections that have been initiated on the property within the last 10 years include:

- UF/Florida Museum of Natural History (Molgo/Soltis). 2013-2016. Collect samples of plants within the genus *Callisia* for genetic study and propagation.
- US Geological Survey (Bedrosian). 2014-2015. Conduct geophysical surveys to collect magnetotelluric data in peninsular Florida.
- Florida Fish and Wildlife Conservation Commission (Doonan). 2014-2017. Conduct research assessing the genetic structure of the statewide Florida mouse (*Peromyscus floridanus*) population for more effective conservation and management.
- University of Florida (Kaufman/Hertz). 2015. Investigate tick densities, pathogen prevalence rates, and overall risk between hunted and non-hunted lands.
- Florida Fish and Wildlife Conservation Commission/FWRI (Farmer/Enge). 2015–2018. Conduct research to determine the status, distribution, and reproductive success of the gopher frog (*Lithobates capito*) in Florida.
- University of Florida, FL Museum of Natural History (Warren). 2015-2023. 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.
- University of Florida (Duncan). 2016-2017. Conduct research on the ecology, natural history, distribution, and population dynamics of the southeastern pocket gopher (*Geomys pinetis*).
- University of Wisconsin-Platteville (Larson/Mirti/Baird). 2016-2017 and 2019. Conduct research on developing tree ring records from living longleaf pines and remnant longleaf pine stumps on GSF.
- University of Florida (Flory/Clark). 2017. Investigate relationships between abiotic/biotic environmental factors and cogongrass (*Imperata cylindrica*) distribution and abundance.
- University of Oxford, UK (Schulting). 2017. Conduct strontium isotope analysis to source ancient canoes of Florida's wetlands.
- IFAS/Florida Medical Entomology Laboratory (Burkett-Cadena/Sloyer). 2017. Conduct research on spatial and temporal distributions of biting midges (*Culicoides* spp.).
- University of North Carolina, Chapel Hill (Schoonover/Weakley). 2017-2022. Conduct research regarding the taxonomy and phylogeny of the genus *Trichostema*.
- Georgia Museum of Natural History (Booher). 2018. Conduct research on historical dynamics of native ant communities of southeastern U.S. and community responses to invasion by exotic ant species.
- Northland Environmental Services (Bess). 2018. Conduct status surveys for the rattlesnake master borer moth (*Papaipema eryngii*) in the Southeast.
- University of Florida (Ober/Hughes). 2018. Conduct research determining if bat morphology and landscape composition affect prey selection and fitness of bats in the southeastern United States.

- University of Texas, El Paso (Lieb). 2018-2020. Fill vouchered species data gaps and augment species-level records on two state forests to investigate taxonomy, biogeography, and genetics of amphibians and reptiles.
- University of Florida, FL Museum of Natural History (Miller and Gott). 2018-2020. Conduct research on the biology and systematics of the Florida duskywings (*Lepidoptera:Hesperiidae:Erynnis*).
- University of Florida (Fill). 2019. Investigate how fire frequency and seasonal timing affect pine and grass population growth.
- University of Florida (Mallinger/Weaver). 2019. Conduct research assessing managed and wild bee resource competition using honeybee colonies.
- Florida Fish and Wildlife Conservation Commission (Talley/Stevenson). 2019. Survey for Eastern indigo snakes on two state forests.
- University of California, Berkeley (Kamath). 2019. Conduct research on the behavioral ecology of the Eastern tent caterpillar.
- University of Florida (Mallinger). 2019-2021. Investigate the behavior and ecology of a native pollinator, the Southeastern blueberry bee (*Habropoda laboriosa*), along with its host plants (*Vaccinium* spp.).
- Florida Fish and Wildlife Conservation Commission (Doonan/Teets/Gillikin/Monarchino). 2019-2023. Conduct a Long-Term Bat Monitoring Program on multiple state forests.
- Florida Fish and Wildlife Conservation Commission (Scheick). 2020. Investigate black bear abundance in the Big Bend region of Florida.
- University of Florida (Cohen/Parrish). 2020-2021. Compare the structure and composition of riparian forests (streamside management zones) across North Florida.
- FDACS/Division of Plant Industry (Gregory). 2020-2021. Collect voucher specimens of insects at Goethe State Forest.
- Florida Fish and Wildlife Conservation Commission (Smith). 2020-2022. Investigate the distribution/habitat of the long-tailed weasel and Everglades mink.
- Boise State University (Rosentreter). 2020-2022. Collect lichens as voucher specimens, and where additional research material is needed.
- University of Florida (Daniels/Kimmel). 2020-2023. Conduct research regarding the giant scrub plasterer bee (*Caupolicana floridana*) and closely related *C. electa*.
- University of Florida (Slotten). 2020-2023. Collect voucher specimens of non-listed (state or federal) moths (order *Lepidoptera*) to augment species-level records and fill in data gaps for Santa Rosa, Okaloosa, Levy, and Alachua counties.
- University of Florida (Wisely). 2021-2022. Conduct research regarding a protozoan parasite (*Trypanosoma cruzi*) of mammals to better understand the impact wildlife plays as a reservoir for Chagas disease.
- University of Florida (Mallinger). 2021-2022. Conduct research on pollination biology of *Rhododendron viscosum*.
- Florida Forest Service (Larson). 2021-2022. Conduct research regarding fire chronology and cultural history at Goethe State Forest.
- University of North Carolina (Bridges/Weakley). 2021-2022. Collect plant specimens for Ecological Flora of Florida project.
- University of Idaho (Harley). 2021-2022. Investigate long-term changes in tropical cyclone activity using tree ring data.

- Mississippi State University (Hill) 2021-2023. Collect insect specimens to document insect biodiversity in the southeastern United States.
- Florida Natural Areas Inventory/University of Florida (Hill). 2021-2023. Conduct surveys for five locally rare butterflies: frosted elfin (*Callophrys irus*), Arogos skipper (*Atrytone arogos*), sawgrass skipper (*Euphyes pilatka*), Dukes' skipper (*Euphyes dukesi calhouni*), and loammi skipper (*Atrytonopsis loammi*) and to investigate the relationship of habitat, genetic diversity, and occupancy in these at-risk species.
- Louisiana State University (Taylor/Stein). 2021-2023. Investigate habitat management/prey availability for common nighthawks.
- Florida Fish and Wildlife Conservation Commission (Deyle). 2022-2023. Conduct research regarding the status, distribution, and causes of decline for ornate chorus frogs (*Pseudacris ornata*) in peninsular Florida.
- Mississippi State University (Ballinger) 2022-2023. Collect specimens of fruit flies (*Drosophila acutilabella* and other non-pest species of *Drosophila* flies) and beneficial *Spiroplasma* bacteria to understand how beneficial bacteria protect their insect hosts against parasites.
- Mississippi State University (Polinko) 2022-2023. Investigate the longleaf pine ecosystem across its native range with respect to silvicultural treatment.
- Florida Fish and Wildlife Conservation Commission/FWRI (Castellon). 2022-2023. Conduct research and monitoring occupancy surveys for indigo snakes (*Drymarchon couperi*) across northern and central Florida.
- University of Florida (Torhorst/Wisely). 2022-2023. Conduct research regarding soft-bodied ticks (*Ornithodoros turicata*) to assess distributions, spatial patterns, and disease risk.

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; and 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, WMD, and ARC, as appropriate.

V. Public Access and Recreation

The primary recreation objective is to provide the public with passive outdoor recreational 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. Recreation activities available on GSF include but are not limited to: hiking, off-road bicycling, hunting, fishing, horseback riding, primitive camping, nature study, and

canoeing/kayaking. See Exhibit D for the locations of existing and planned sites discussed below.

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

Goethe's trails extend throughout the forest with access available at seven separate trailheads. The forest is open during daylight hours for visitors to enjoy picnicking, hiking, bicycling, fishing, wildlife viewing and horseback riding. Any after-hours activities other than camping must be approved by means of a forest issued State Forest Use Permit. Overnight camping is presently available in three (3) locations. Many of Goethe's trails are included in the Florida Forest Service's Trailwalker and Trailtrotter Recreation Program.

1. Current Access and Parking

On GSF, access is available to recreational users at seven (7) designated trailheads, six (6) additional recreation ingress/egress points that provide public access to neighboring developed areas, and nine (9) additional areas designated as hunter access points with limited parking. In addition, there are also twenty-two (22) designated access points that provide access to licensed public vehicular traffic at the intersections of open forest roads with state and county roads.

Apex Tract

This tract of land is located south of State Road 121, west of County Road 337, and north of County Road 336. There are six points of access to this tract for licensed motor vehicles. The Apex Trailhead is capable of parking multiple vehicle and horse trailer combinations. Another improved parking area, the Buck Island Pond Trailhead, has room to park ten personal-sized vehicles.

Black Prong Tract

This tract is located north of County Road 326 and has six designated access points. The Black Prong Trailhead is located north of County Road 326 on County Road 337 and has improved parking and space to park multiple and/or large vehicles. This area is used by various recreation groups throughout the year.

Cow Creek Tract

This area is located south of County Road 326 and north of State Road 121. There are five designated access points located in this section of the forest for licensed motor vehicles. The Big Cypress Trailhead has parking for approximately a dozen vehicles.

Daniel's Island

This tract is located south of County Road 336. There are five designated access points

located in this section of the forest for licensed motor vehicles.

Stein Tract

This tract of the forest is located north of County Road 336 and east of County Road 337. There are two points of access for licensed motor vehicles. The Tidewater Trailhead is improved and capable of parking dozens of vehicles at one time.

Watermelon Pond Tract

These are disjunct tracts of land managed by GSF located in Alachua and Levy Counties 11 miles north of the main body of the forest. Two designated access points are located in this portion of the forest. One parking area, the Watermelon Pond North Trailhead, consists of a small area for personal vehicles and seven pull through parking areas for vehicles with equestrian trailers. Natural vegetation buffer islands separate the pull through parking areas. The Bailey Trailhead along County Road 335 consists of a small area for personal vehicles and three pull through parking areas for vehicles with equestrian trailers.

2. Roads

There are 322 miles of interior forest roads and 70 miles of improved lime-rocked roads located throughout GSF. There are 27 named, open named roads for a total of 75 miles. Most of the forest can be accessed by the general public using the open, named roads. See Exhibit B.

3. Facilities

Apex Tract

The Apex Tract has two recreation facilities. The Apex Trailhead facilities consist of a 20' x 36' pavilion, bathroom, barbecue grills, picnic tables, and an equestrian wash rack. In addition, staff members are available to answer any questions recreation users have and restrooms are open to the public during regular business hours at GSF Headquarters. The second site is located at Buck Island Pond. A boardwalk provides an overlook along the Buck Island Pond Interpretive Trail.

Black Prong Tract

The Black Prong Trailhead has a well and pump house, a restroom, and a picnic area with barbecue grills and picnic tables. There are four (4) primitive campsites co-located at the trailhead.

Cow Creek Tract

The Big Cypress Boardwalk Trailhead is located along Cow Creek Road in this section of the forest. A raised boardwalk constructed at the end of a quarter-mile hiking trail leads to the large cypress tree called the "Goethe Giant." Two picnic tables are also located at the trailhead leading to the boardwalk.

Daniel's Island

There are several buildings and a large, cleared area at the site of the former Forestry Youth Academy. Current plans designate this site for removal of the buildings and restoration back to mesic flatwoods.

Stein Tract

The Tidewater Trailhead includes a well with a pump house and a restroom facility. Other additions include multiple picnic tables, barbecue grills, an equestrian wash rack, and a 36' x 46' pavilion located at the trailhead. There are five (5) primitive campsites located adjacent to the trailhead. Campers on these sites also permitted to use the trailhead restroom.

Watermelon Pond

Watermelon Pond North Trailhead includes a well with a pump house and a restroom facility. Other additions include picnic tables, barbecue grills, three (3) primitive campsites, and a 20'x 30' picnic pavilion. Watermelon Pond East includes a pumphouse, picnic tables, and barbecue grills.

4. Trails

All of Goethe's designated trails start from one of the seven trailheads. Five of the trail systems are multiple-use (equestrian, hiker, bicyclists) and the other two are designated single use (hikers only). All of Goethe's trail maps can be downloaded onto forest users' cellphones to provide precise trail locations by scanning the QR code at each trailhead.

Apex Tract

Five loops of varying lengths make up the 41.5 miles of the marked Apex trail system and are designated for multiple use. Trail maps are located in the kiosk at the trailhead and on the FFS website. A trailhead sign with recreation symbols is located at the trailhead entrance along County Road 337. Two connector trails are marked linking the Apex trail system to the Tidewater trail system.

Bailey Trailhead

This is the newest trail system being developed for public use. This trailhead and parking area is located off of County Road 335. This site features a four-mile, single loop multiple use trail.

Big Cypress Trailhead

The Big Cypress Boardwalk is located on Cow Creek Road in the Cow Creek Tract of the forest. A 0.25-mile hiking trail has been developed at the site of a very large bald cypress tree, the "Goethe Giant." The trail winds through a basin swamp to a raised boardwalk leading to the cypress tree. Interpretive information is posted on the kiosk as well as on several signs along the trail and boardwalk.

Black Prong Trailhead

There are six loops of varying lengths that make up the 43 miles of marked multiple use trails leading out of the trailhead. Trail maps are located in the kiosk at the trailhead as well as on the FFS forest website. A trailhead sign with recreation symbols is located at the entrance along County Road 337. All trails are designated as multiple use.

Buck Island Pond Trailhead

This trailhead is located in the Apex section of the forest off County Road 337. A forest sign along County Road 337 directs visitors to the trailhead. The trailhead provides direct access

to a two-mile hiking only trail which circles Buck Island Pond. Various interpretive locations along the trail have been marked with letters that correspond with interpretive material in the hiking trail brochure. Trail maps for this trail are located in the kiosk as well as at the GSF office.

Tidewater Trailhead

Five loops varying in length from two and a half miles to 15 miles make up the Tidewater trails. These trails are designated multiple use and total 40 miles in length. The yellow trail crosses County Road 336 and winds through the Daniel's Island Tract. This trail system hosts the greatest number of special events and is monitored regularly for impacts from public use. Trail maps are located in the kiosk and on the FFS website. A forest sign with recreational symbols designates the entrance along County Road 337.

Watermelon Pond Trailhead

This trail is a single loop multiple use trail with its trailhead and parking area located off of County Road 337. The trail's length is seven miles long and provides scenic vistas of Watermelon Pond. This trail has two connector points with adjacent trail system on the FWC-managed Watermelon Pond WEA property.

5. Camping

Camping on Goethe is by reservation only through the online Campground Reservation System. All camping is considered primitive since there are no campgrounds that provide individual campsites with water, electric, and sewer hookups. Camping on Goethe is located near the Tidewater, Black Prong, and Watermelon Pond North Trailheads because of the restroom facilities and water sources located at these three areas. Camping is permitted year-round. Currently, FFS has no plans to develop full facility camping areas in this forest.

6. Boating

Boating on GSF is limited. Canoes, kayaks, and other types of small boats are suitable for use on many small, shallow, seasonal creeks and ponds.

7. Environmental Education and Public Outreach

Goethe State Forest staff conducts various events to provide the public with opportunities to learn more about the forest and various management techniques. Common events include guided tours and interpretive walks, interpretive signage and kiosks, and informative programs on the importance of prescribed fire on the forest. Other on-site programs include events with biologists such as exploring gopher tortoise burrows with live camera feeds and a demonstration on how staff ascend pine trees to check on the progress of nesting and hatchling red-cockaded woodpeckers. Goethe State Forest also hosts an annual equestrian event in October to promote forest recreation during State Forest Awareness Month.

Goethe State Forest is also one of many designated sites on FWC's Great Florida Birding and Wildlife Trail. This trail is not only about birds; but also promotes butterflies, natural communities, and trail sites. All our programs and public contacts stress the importance of the forest being managed under the multiple-use concept. Goethe State Forest is a designated site on the FWC's Great Florida Birding and Wildlife Trail; GSF provides many

opportunities to observe bird, butterfly, and other wildlife species in their natural habitats. More than 100 species of birds can be found on Goethe State Forest.

B. Planned

FFS will continue to assess plans for additional recreation opportunities based on demand, carrying capacity, demographics, and impact to the resources on GSF. All planned improvements may be completed as staff and funding permits. Both terrestrial and aquatic resources and related activities will be evaluated. Any plans will be incorporated into the Five-Year Outdoor Recreation Plan on file at GSF. FFS will continually reach out to user groups to communicate its needs and concerns with our user groups, cooperators, and visitors.

1. Public Access and Parking

Within this ten-year planning cycle, a parking area to facilitate public access to the Cubberly Pond area of the forest off State Road 24 may be installed. This area would consist of a small area for personal vehicles, informational kiosks, and basic recreation infrastructure.

2. Roads

Within this ten-year planning cycle, the focus will be to maintain and improve primary and secondary roads to provide visitor access to the forest. Staff plan to identify and permanently close roads with low usage counts or negative environmental impacts to decrease maintenance costs and unnecessary disturbance.

3. Facilities

During this planning cycle, work will concentrate on maintaining current facilities. All existing facilities may be replaced, upgraded, or improved as needed. Additional amenities that may be assessed during this ten-year planning period include but are not limited to: bear-proof trashcans, gates, educational displays, signs, fencing, potable water sources, tent pads, boardwalks, and culverts. Additional bathroom units may be installed if the number of campsites is increased to a level where the current infrastructure cannot accommodate the increased use.

4. Trails

During this ten-year planning period, a hiking trail will be installed within the Watermelon Pond Tract in the Cubberly Pond area. This is subject to approval for opening the area to the public. Trail improvements at Cubberly Pond will be designed to accommodate the hiking user group. Site amenities to be considered include a boardwalk(s)/overlook(s) along trails and into the pond system. GSF staff will also assess the feasibility of installing a trail from the Apex Tract to the Black Prong Tract. Forest staff will assess and address any potential user conflicts as they arise.

5. Camping

During this ten-year planning period, up to 12 additional primitive campsites are planned to be added to GSF. These may be installed in pre-existing campgrounds or at newly identified and established locations.

6. Environmental Education and Public Outreach

Goethe will continue to offer programs to promote public education. These programs will consist of guided tours, interpretive trails, interpretive material in kiosks, hands-on events, and/or distributing forest brochures. Goethe will participate in an annual event during October to promote the forest and its recreation opportunities during State Forest Awareness Month. Goethe will continue to look for opportunities, such as Gopher Tortoise Day, to educate the public about the longleaf pine ecosystem's essential role in the region's biodiversity.

C. Hunter Access

Regulated hunting and fishing on Florida's forests are managed cooperatively with the FWC. Hunting season dates, limits, and methods are established annually by FWC, in cooperation with FFS. Wildlife Management Area (WMA) regulations are updated annually and are identified in the current WMA brochures provided by FWC at www.MyFWC.com. Non-hunting recreation users are encouraged to check the Wildlife Management Area regulations and season dates before visiting GSF.

GSF currently makes up all of the Goethe Wildlife Management Area (WMA). The Goethe WMA is comprised of the main portion of GSF west of County Road 337. The only areas east of County Road 337 available for hunting in the Goethe WMA are the Hog Pond area (open for small game season) and the Sand Pit Unit (only used for dove hunting). These dove fields will be managed as open, early successional habitat through burning, mowing, and/or disking.

Hunting also occurs on parts of the Watermelon Pond tract. This hunting area is part of FWC's Watermelon Pond Wildlife and Environmental Area (WEA). The portion of the WEA located on GSF only includes areas that border County Road 337.

Operation Outdoor Freedom (OOF), a program managed by the Florida Department of Agriculture and Consumer Services, may host multiple events on GSF. These events may involve outdoor recreation activities such as hunting, fishing, hiking, camping, clay shooting, and other activities developed as outdoor pursuits for wounded veterans. The supporting personnel will include state and private volunteers and any personnel necessary for the operation, support, or funding of such events. Events can be recreational, fundraising, or planning in nature. The OOF program needs may include the upgrading of existing or construction of new facilities for lodging and recreation of participants, as well as logistical and operational needs of the program. On-site and offsite fundraising for the benefit of OOF may occur to assist in these efforts and will be performed under the coordination and consistent with the guidelines of the Friends of Florida State Forests.

D. Education

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

VI. Forest Management Practices

A. Prescribed Fire

Forest management practices on GSF are important in the restoration and maintenance of forest ecosystems and provide a variety of socio-economic benefits to Floridians. Management practices on GSF include prescribed fire, 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 Waccasassa Forestry Center and is detailed in the Five-Year Prescribed Burning Management Plan. Emphasis will be placed on prescribed burning, wildfire prevention, and education to help reduce wildfire occurrence on GSF.

A Fire History chart detailing the recent history of prescribed burns and wildfires at GSF is available in Exhibit N.

FFS has two (2) fire towers, three (3) brush trucks, and five (5) tractor-plow units located in eastern Levy County. Additional support is available from Alachua, Levy, Marion and Gilchrist Counties. Personnel and equipment stationed at GSF 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 prescribed burning program developed for GSF produces multiple benefits. The objectives of prescribed burning on GSF include facilitating forest management operations, enhancing wildlife and listed species habitat; decreasing fuel loading, enhancing public safety, and restoring, maintaining, and protecting all native ecosystems, ecotones, and their ecological processes. FFS personnel are responsible for planning and implementing the annual prescribed burn program for GSF, 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 GSF 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 GSF are estimated to have occupied 43,664 acres and to have burned at approximately two (2) to four (4) year intervals. Current fire-dependent communities encompass 43,182 acres. Some historically fire-dependent communities have been altered through past land use practices, which inhibits the ability to meet objectives with prescribed fire alone. Based on current conditions and management objectives, GSF will plan for 12,000 to 18,000 acres to be prescribed burned annually. Priority ranking of burn units is used to keep fire-return intervals maintained while slowly adding additional acreage. Meeting prescribed fire goals will be largely dependent on weather conditions, available personnel, and statewide emergency situations such as wildfires, hurricanes, and other natural disaster response and relief. Currently, it is estimated that approximately 19,800 acres of GSF are within the desired fire-return interval.

1. Fire Management

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

The use of prescribed fire in the management of timber, wildlife, and ecological resources on GSF is necessary if the FFS is to fulfill the goals and objectives stated in this plan. This includes enhancing and restoring native plant communities, managing protected species, and 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 operation records and staff experience should be combined with the FNAI inventory and assessment (2022) 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 (Chapter 5I-2 F.A.C., Chapter 590, F.S.) and have a burn unit plan (or prescription). Each prescription will contain, at a minimum, the information, as required by Section 590.125(3), F.S., needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

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

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. Wildfire Prevention and Mitigation Strategies

FFS utilizes a comprehensive wildfire management approach on state forests that includes an ongoing program of wildfire prevention, detection and suppression, and prescribed burning. Implementation of this program is the responsibility of FFS's Waccasassa Forestry Center. Emphasis will be placed on consistent accomplishment of prescribed burning goals and community outreach to increase public understanding of wildfire prevention and the benefits of prescribed fire.

The FFS has three paramount considerations regarding wildfires and are established in priority order:

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

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

1. Suppression Strategies

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

- a. **Contain and Control** is defined as a suppression strategy where a fire is restricted to a certain area by using existing natural or constructed barriers that stop the fire's spread under the prevailing and forecasted weather until it is out. This strategy allows the use of environmentally sensitive tactics based on fuels, fire behavior, and weather conditions that keep a wildfire from burning a large area or for a long duration.
- b. **Direct Suppression** is defined as a suppression strategy where aggressive suppression tactics are used to establish firelines around a fire to halt its spread and to extinguish all hotspots. This alternative is used whenever there is a threat to human life, property, private lands, and/or critical natural or cultural resources. This strategy should also be used when the total district fire load dictates that crews not be involved with individual fires for any longer than necessary.

Appropriate suppression action will be that which provides for the most reasonable probability of minimizing fire suppression cost and critical resource damage, consistent with probable fire behavior, total fire load, potential resource and environmental impacts, safety, and smoke management considerations. The Incident Command System (ICS) will be used for all suppression actions.

2. Smoke Management

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

3. Fire Breaks and Firelines

A system of permanent fire breaks has been developed and maintained around and within the boundaries of GSF 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 continue to 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

GSF 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 GSF. When possible, fire staff will avoid line construction in wetland ecotones and other areas throughout the forest.

5. Firewise Communities

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

6. Adjacent Neighbor Contacts

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

7. Post-Burn Evaluations

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

C. Sustainable Forestry and Silviculture

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

1. Strategies

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

- a. To restore and maintain forest health and vigor through timber harvesting, prescribed burning, and reforestation, both naturally and artificially, with species native to GSF.
- 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 GSF will be directed toward improving forest health, wildlife habitat, ecological and economical sustainability, as well as toward recovery from past

management practices prior to state acquisition that are not in accordance with the objectives of this plan. Stands of off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with the appropriate tree species. Herbicide applications may be necessary to control woody competition and to re-establish desired native overstory and groundcover species. Site preparation methods may include prescribed fire, mechanical vegetation control, and/or chemical vegetation control through 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 the State Forest Handbook, and will follow the Five-Year Silviculture Action Plan.

3. Forest Inventory

The purpose of a forest inventory is to provide FFS resource managers with information and tools for short and long-range resource management and planning. Each pine stand on GSF will be re-inventoried once every 10 years and each hardwood stand will be re-inventoried once every 20 years to provide an accurate estimation of the standing timber and to ensure that stands will be managed sustainably.

Timber/forestry resources available on the property include loblolly, longleaf, slash, pond, and small pockets of sand pine. In addition, there are mixed hardwoods and cypress found throughout GSF.

4. Timber Sales

Timber sales are 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

There are currently no cattle leases on GSF.

D. Invasive Species Control

FFS employees continually monitor GSF 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 GSF. Also see Exhibit O.

On-going maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan which is developed to locate, identify, and control invasive plant species. Occurrences of invasive species are recorded in the GSF 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 are present on GSF and require aggressive management to reduce impacts to natural communities. 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 GSF

Common Name	Scientific Name	Treatment Strategy	Acres Impacted	Increasing/Decreasing
Caesarweed	<i>Urena lobata</i>	Herbicide/Mechanical	1	Stable
Camphor tree	<i>Cinnamomum camphora</i>	Herbicide/Mechanical	2	Stable
Chinese brake fern	<i>Pteris vittata</i>	Herbicide	1	Increasing
Chinese tallow	<i>Triadica sebifera</i>	Herbicide/Mechanical	1	Decreasing
Chinese wisteria	<i>Wisteria sinensis</i>	Herbicide	1	Decreasing
Cogon grass	<i>Imperata cylindrica</i>	Herbicide	18	Decreasing
Japanese climbing fern	<i>Lygodium japonicum</i>	Herbicide	8	Decreasing
Mimosa	<i>Albizia julibrissin</i>	Herbicide/Mechanical	2	Decreasing
Natal grass	<i>Rhynchelytrum repens</i>	Herbicide	4	Decreasing
Skunk vine	<i>Paederia foetida</i>	Herbicide/Mechanical	1	Decreasing
Small-leaf spiderwort	<i>Tradescantia fluminensis</i>	Herbicide	1	Stable

* FISC – Florida Invasive Species Council: Category 1 – Invasive plants that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused; Category 2 – Invasive plants that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category 1 species. These species may become Category 1 if ecological damage is demonstrated.

E. Insects, Disease, and Forest Health

Currently, there are no significant insect or disease problems on GSF. In the event of a forest pest outbreak, GSF 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 the City of Newberry and Levy County will be notified of the approval of this plan documenting this designation.

As a result, prior to conducting any arthropod control activities on GSF, 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 GSF. This public lands control plan must comply with FDACS guidelines and use the appropriate FDACS form. The plan must then be approved and mutually adopted by the county, FFS, and FDACS, prior to initiation of any mosquito control work. Should the local mosquito control district not propose any mosquito control operations on the property, no arthropod control plan is required. See Exhibit V.

F. Use of Private Land Contractors

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

1. Herbicide applications
2. Restoration activities
3. Reforestation
4. Site preparation activities
5. Timber harvesting
6. Biological assessments and mapping
7. Contractors for fixed capital and infrastructure improvements

VII. Proposed Management Activities for Natural Communities

In 2022, FNAI completed an inventory and natural community mapping project on GSF. Current and historic natural community cover types can be found in Exhibits P and Q, and Table 7. The 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	1,078	1,075
Basin swamp	5,803	5,803
Bottomland forest	234	241
Depression marsh	337	335
Dome swamp	6,533	6,522
Floodplain marsh	214	214

Community Type	Historic Acres*	Current Acres*
Floodplain swamp	188	180
Hydric hammock	1,816	1,809
Mesic flatwoods	17,576	16,835
Sandhill	9,228	8,452
Sandhill upland lake	762	719
Scrubby flatwoods	1,150	1,062
Sinkhole	33	30
Upland hardwood forest	100	100
Upland mixed woodland	36	0
Wet flatwoods	8,733	8,170
Wet prairie	109	45
Xeric hammock	248	451
Managed and other altered community types**	0	2,135
TOTAL	54,178	54,178

* Rounding errors exist

** See Tables 8 & 9

Table 8. Managed Landcover Types

Community Type*	Current Acres
Pasture – Improved	36
Pine plantation	1,154
TOTAL	1,190

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

Table 9. Other Altered Landcover Types

Landcover Type*	Current Acres
Abandoned field/pasture	64
Artificial pond	33
Borrow area	2
Clearing/regeneration	94
Developed	52
Spoil area	2
Successional hardwood forest	495
Successional hydric shrubland	64
Utility corridor	139
TOTAL	945

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

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 action plan for prescribed burning and other management

activities across GSF. Strategies may include thinning pine plantations, mowing, or chopping in areas of heavy fuel buildup, application of both dormant and growing season fires, and/or the use of herbicides to control hardwoods/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 GSF

Community Type	Historic Fire-return Intervals**	GSF Fire Frequency Goal (Local)	Comments
Basin marsh	Variable	Variable	Ensure ecotones receive periodic fire effects.
Basin swamp	Variable	Variable	Ensure ecotones receive periodic fire effects.
Bottomland forest	N/A	N/A	
Depression marsh	1-5 years	1-5 years	
Dome swamp	1-5 years	1-5 years	
Floodplain marsh	Variable	Variable	Likely to occur during dryer periods.
Floodplain swamp	N/A	N/A	
Hydric hammock	N/A	N/A	
Mesic flatwoods	2-4 years	2-4 years	Largest and most important community for fire dynamics. Maintenance units to receive priority growing season days.
Sandhill	1-3 years	1-3 years	Sandhill on Goethe is generally in maintenance condition. Appropriate seasonality and mosaic objectives will be utilized.
Sandhill upland lake	N/A	N/A	
Scrubby flatwoods	5-15 years	2-4 years	This community is embedded within larger burn units and will receive fire more frequently.
Sinkhole	N/A	N/A	
Upland hardwood forest	N/A	N/A	
Wet flatwoods	1-10 years	3-10 years	
Wet prairie	2-3 years	2-3 years	
Xeric hammock	Infrequent	Infrequent	

* Includes restoration community acreage / ** As determined by FNAI

The following community descriptions, existing condition descriptions, and management recommendations are taken from a 2022 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 GSF.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural and managed communities at GSF 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 regularly inundated freshwater herbaceous wetlands that may occur in a variety of situations but, in contrast to depression marshes, are not small or shallow inclusions within a fire-maintained matrix community. They are typically not heavily influenced by frequent fires in the surrounding landscape. This community type is dominated by herbs or occasionally shrubs that can withstand inundation for most or all of the year. Unlike depression marshes, which are shallow and frequently dry out, basin marshes tend to be fairly deep with mucky soils throughout and often a cover of sphagnum moss. A thick layer of maidencane (*Panicum hematomon*) is common with other wetland species. In deeper portions white waterlily (*Nymphaea odorata*), bladderwort (*Utricularia sp.*), or watershield (*Brasenia schreberi*) are common.

The signature on historic aerial photography for this community appears dark grey or black when filled with water. White spots can often be observed within the dark matrix. These are most likely inclusions of floating or emergent aquatic vegetation. When dry, the basin marsh community is a smooth light to dark grey, typically lacking any small dark spots that are representative of trees.

Current Conditions:

The basin marsh community is quite common across GSF. The majority of basin marshes on this property occur along the eastern half of the property, but they are common throughout. The drier edges of the basin marshes tend to have a thicker herbaceous layer while the center, which remains underwater year-round, tends to only contain floating aquatic species. The edge is made up of primarily graminoids with varieties of panic grass (*Panicum sp.*) and beaksedge (*Rhynchospora sp.*) commonly occurring. As the water gets deeper species like pickerelweed (*Pontederia cordata*) become common, with waterlily (*Nymphaea sp.*) occurring in the deepest portions that are inundated year-round. There is typically no canopy or subcanopy cover in this community but scattered young and mature pond cypress (*Taxodium ascendens*), sweetgum (*Liquidambar styraciflua*), slash pine (*Pinus elliotii*), and loblolly pine (*Pinus taeda*) are not uncommon along the edges. The shrubby midstory is also typically sparse but may contain hydrophytic trees and shrubs along the edges such as roughleaf dogwood (*Cornus asperifolia*), titi (*Cyrilla racemiflora*), loblolly bay (*Gordonia lasianthus*), red cedar (*Juniperus virginiana*), fetterbush (*Lyonia lucida*), sweetbay (*Magnolia virginiana*), and pond cypress (*Taxodium ascendens*). Shrubs tend to form small thickets in areas where the water is not very deep; species commonly seen include silverling (*Baccharis glomeruliflora*), titi (*Cyrilla racemiflora*), St. John's wort (*Hypericum sp.*), gallberry (*Ilex glabra*), sweetgum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), sweetbay (*Magnolia virginiana*), pond cypress (*Taxodium ascendens*), and eastern poison ivy (*Toxicodendron radicans*).

Fire Regimes:

In association with swamps, the normal fire interval is variable. Upper marsh edges with significant fuels may burn more frequently when they are adjacent to pyrogenic uplands, perhaps as often as 2 to 4 years. However, most basin marshes are isolated by swamps or other forested communities, and will burn rarely, if ever.

Management Needs:

Little active management is required for this community type. Management activities for basin marshes on GSF should focus on allowing prescribed fires from surrounding uplands to burn into and/or through the community. As the goal for the surrounding communities' fire return interval is reached, fire should be prescribed at a time when water in the marshes is low or absent (April-June). In some basin marshes, fire may help to maintain this community by restricting woody plant invasion. Application of prescribed burns only during winter months, when the basin holds water, allows for establishment of shrubs and/or pines. A high percentage of woody species may eventually reduce the hydroperiod and lead to undesirable succession. Any hydrological disturbances, such as ditches, firebreaks, and roads, should be avoided. Plowed firebreaks should not limit fires from burning into this community. Basin marshes will be assessed with other wetlands for needs regarding mechanical and chemical removal of fire shadows and hardwoods.

B. Basin Swamp**Description:**

Basin swamp is a basin wetland vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamps are highly variable in size, shape, and species composition. They are typically large and/or embedded in a non-pyrogenic community and thus are not as heavily influenced by frequent fires in the surrounding landscape as dome swamps.

Basin swamps at Goethe have a closed canopy, except where a basin marsh community is contained by the swamp. Upland edges may support an ecotone edge of wet prairie or wet flatwoods. These areas should have a moderate to dense cover of grasses, sedges, and forbs. The ecotone should be maintained by frequent fires in the surrounding uplands, resulting in relatively sparse shrub cover leading up to the edges of the swamp. Areas where fire is naturally excluded may have denser shrub cover on the edges. However, herbaceous and shrub cover is usually sparse in the swamp interior due to canopy shading.

On 1940s aerial photography the basin swamps typically appear dark grey suffused with black. This signature often appears coarsely textured relative to surrounding communities.

Current Conditions:

Basin swamps are one of the most common natural communities in GSF. The dominant species of this community is pond cypress (*Taxodium ascendens*) which makes up the majority of the canopy and subcanopy. Other canopy and midstory species like slash pine (*Pinus elliottii*), sweetgum (*Liquidambar styraciflua*), cabbage palm (*Sabal palmetto*), loblolly bay (*Gordonia lasianthus*), and dahoon (*Ilex cassine*) are common throughout the community, especially on the drier edges. While at the deepest portions of the swamp, shrub cover is sparse, the ecotonal edges of the swamps contain a relatively dense shrub cover including southern bayberry (*Morella cerifera*), slash pine (*Pinus elliottii*), water oak (*Quercus nigra*), St. John's wort (*Hypericum sp.*), sweetgum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), common buttonbush (*Cephalanthus occidentalis*), common persimmon (*Diospyros virginiana*), roundpod St. John's wort (*Hypericum cistifolium*), sand blackberry (*Rubus cuneifolius*), and coastalplain willow (*Salix caroliniana*). In the deeper, more frequently flooded portions of the swamp where the canopy cover is dense, ferns and other hydrophytic plants are more common such as Virginia chain fern (*Woodwardia virginica*), pickerelweed (*Pontederia cordata*), toothed midsorus fern

(*Telmatoblechnum serrulatum*), waterlily (*Nymphaea* sp.), and royal fern (*Osmunda regalis* var. *spectabilis*). The ecotonal edges have a larger diversity of plants, particularly in areas where the shrub cover is less dense. Common herbs along the basin swamp ecotone are maidencane (*Panicum hemitomon*), dogfennel (*Eupatorium capillifolium*), millet beaksedge (*Rhynchospora miliacea*), and pale meadowbeauty (*Rhexia mariana*).

Fire Regimes:

Fire intervals are variable and depend on such factors as dominant vegetation, fire exposure, and drought. The interior of basin swamps may go without fire for decades or even centuries while the exposed outer edges can be more susceptible to frequent fire. Basin swamps that are situated within the matrix of a pyrogenic community, such as mesic flatwoods, will likely burn more frequently than basin swamps positioned within a matrix of mesic or hydric hammock.

Management Needs:

Little active management is required for this community type. Burning adjacent fire-adapted communities and allowing fire to enter basin swamps naturally with the adjacent uplands is desirable. Exclusion of fires can lead to hardwood encroachment and peat accumulation. Hydrologic disturbances such as ditches, fire breaks, and roads should be minimized, if not avoided altogether in this community. Peat accumulation from historical fire exclusion has complicated prescribed fire application in this community and its adjacent natural communities. This is due to smoke concerns from long-term consumption of accumulated ground fuels such as muck or peat. Basin swamps will be assessed with other wetlands for needs regarding mechanical and chemical removal of fire shadows and hardwoods.

C. 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. Bottomland forests occur on low-lying, seasonally flooded and/or saturated soils of a riverine floodplain. Bottomland forests are inundated for a portion of the wet season but may dry out during the late spring. This variability accounts for the mixed canopy species composition.

Bottomland forest at GSF contains a mature closed canopy of hydrophytic hardwood trees. Tall shrubs are relatively sparse in this community and provide an open aspect to the understory. The herbaceous stratum may be sparse to dense, depending on species present. Epiphytes are found occasionally in this community. Vines are common but are typically found in low quantities.

The bottomland forest signature in the 1940 photography is often difficult or impossible to discern from other adjacent forested communities, such as floodplain swamp, and was not used solely for identifying this community. Comparisons with other photography sources such as the 1999 infrared photography where the mixed canopy of the bottomland forest is easily recognizable from the cypress-dominated canopy of the swamps was necessary to determine historical community extent.

Current Conditions:

The bottomland forest canopy at GSF is younger mature to mature with a closed canopy of primarily hydrophytic hardwood species. The canopy is composed of red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), slash pine (*Pinus elliottii*), swamp laurel oak (*Quercus laurifolia*), pond cypress (*Taxodium ascendens*), and American elm (*Ulmus americana*). In well developed areas a sparse subcanopy layer forms and includes American hornbeam (*Carpinus caroliniana*), swamp dogwood (*Cornus foemina*), sweetgum (*Liquidambar styraciflua*), swamp tupelo (*Nyssa biflora*), swamp laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), and coastalplain willow (*Salix caroliniana*). Tall shrubs are relatively sparse in this community and provide an open aspect to the understory. Short shrubs are also sparse and include red maple, common buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), sweetgum, southern bayberry (*Morella cerifera*), swamp bay (*Persea palustris*), and swamp laurel oak. The herbaceous layer is often sparse but may be a dense cover of false nettle (*Boehmeria cylindrica*), sedge (*Carex* sp.), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), southern wood fern (*Dryopteris ludoviciana*), Carolina scalystem (*Elytraria* sp.), angle pod (*Gonolobus suberosus*), marshpennywort (*Hydrocotyle* sp.), primrosewillow (*Ludwigia* sp.), partridgeberry (*Mitchella repens*), mild waterpepper (*Persicaria hydropiperoides*), mingled beaksedge (*Rhynchospora mixta*), lizard's tail (*Saururus cernuus*), spike-moss (*Selaginella* sp.), and giant ironweed (*Vernonia gigantea*).

Currently, bottomland forest at GSF is restricted to the central eastern portion along Black Prong occupying the higher elevation areas in a floodplain mosaic including floodplain swamp, floodplain marsh, and hydric hammock.

Fire Regimes:

Bottomland forest is not a fire-adapted natural community type. Fires occur infrequently, if ever.

Management Needs:

Bottomland forest communities would benefit from hydrologic restoration efforts. Historic alterations such as ditching and firelines should be filled to restore historical hydroperiods and depths whenever possible. Hydrology restoration in surrounding wetland communities will also benefit bottomland forest when connected by surface or ground waters. Pines will not be planted within this community. Forestry operations are not recommended in this sensitive wetland community. This community naturally inhibits fire and does not require the use of firebreaks to exclude fire. Difficult access and remote locations foster easier introduction of some invasive species into this system, therefore periodic surveys will be required to ensure infestations do not get established.

D. Depression Marsh**Description:**

Depression marshes are generally circular, shallow, herb-dominated wetlands found in depressions on a sand substrate. Depression marshes are often found in a landscape of wet flatwoods, mesic flatwoods, or sandhill where fires often burn through these small marsh communities.

Depression marshes on GSF are an herb dominated community, in all but the deepest areas of the marsh. Concentric zones of vegetation are formed, corresponding to hydroperiod, water depth, and fire regimes. There is typically no canopy or subcanopy, although there may be infrequent scattered trees. Shrubs should be sparse, controlled by hydroperiod and fires from the surrounding uplands. The herbaceous layer is the characteristic stratum of this community and commonly contains a dense groundcover of graminoids and forbs.

The signature for depression marsh on the 1940s aerial photography is typically very distinct and appears black and smooth with a light grey fringe. The black color is indicative of open water whereas the light grey represents an open herbaceous ecotone maintained by frequent fire events.

Current Conditions:

Depression marshes are common throughout GSF. These small circular, shallow depressions tend to have a fairly dense herbaceous layer, with a sparser shrubby and canopy layer concentrated to the ecotonal edges of the community. The deepest parts of this community, generally at the center of the depression, do not have a canopy cover, but may have shrubby cover dominated by coastalplain willow (*Salix caroliniana*) and/or pond cypress (*Taxodium ascendens*). Often pickerelweed (*Pontederia cordata*) and waterlily (*Nymphaea* sp.) can be found in these deeper portions as well. Towards the shallower edges of the communities, the species diversity tends to increase. These areas occasionally have scattered mature slash pine (*Pinus elliottii*) and cabbage palm (*Sabal palmetto*), and common shrubs such as peelbark St. John's wort (*Hypericum fasciculatum*), slash pine (*Pinus elliottii*), coastalplain willow (*Salix caroliniana*), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), and myrtleleaf St. John's wort (*Hypericum myrtifolium*). The most diverse part of this community is the herbaceous cover on the ecotonal edges which often contains beaksedge (*rhynchospora* sp.), Virginia chain fern (*Woodwardia virginica*), Carolina redroot (*Lachnanthes caroliniana*), pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*), grass (*Poaceae*), clustered sedge (*Carex glaucescens*), fascicled beaksedge (*Rhynchospora fascicularis*), panic grass (*Panicum* sp.), bluestem (*Andropogon* sp.), spadeleaf (*Centella asiatica*), dogfennel (*Eupatorium capillifolium*), pale meadowbeauty (*Rhexia mariana*), blue maidencane (*Amphicarpum muehlenbergianum*), slender flattop goldenrod (*Euthamia caroliniana*), yellow jessamine (*Gelsemium sempervirens*), rush (*Juncus* sp.), clustered mille grains (*Oldenlandia uniflora*), mild waterpepper (*Persicaria hydropiperoides*), stinking camphorweed (*Pluchea foetida*), camphorweed (*Pluchea* sp.), bracken fern (*Pteridium aquilinum*), bunched beaksedge (*Rhynchospora cephalantha*), and sand cordgrass (*Spartina bakeri*).

A few of the historic depression marshes at GSF were planted with pine (often slash pine) in the past along with the surrounding uplands and managed as pine plantations with varying degrees of disturbance from site preparation (bedding, herbicides, etc.). Areas of these marshes that have received some thinning, but retain planted pines, are mapped as 'restoration' depression marsh to indicate that management is moving the community towards a more natural structure. Restoration depression marshes are differentiated from areas mapped as depression marsh typically because they contain a denser canopy of pines that will likely need to be thinned as they reach maturity, as well as higher numbers of early successional species that were established during ground disturbances related to silviculture practices.

Fire Regimes:

Historically, fires would have swept across the depression marshes when the surrounding uplands burned, approximately every 1 to 5 years. Presently, prescribed fires should be allowed to burn into depression marshes when the surrounding uplands burn. Depending on climatic conditions and fuel moistures during the burn, the fire may burn completely through the marsh or may just creep into the shallower areas. Prescribed fires in the growing season may have a better chance to encroach into the deep, peat-accumulated centers thereby controlling the buildup of peat and the encroachment of woody species.

Management Needs:

Depression marshes depend on fire to maintain their herbaceous dominance and prevent shrub growth. Management activities for depression marshes on GSF should focus on allowing prescribed fires from surrounding uplands to burn into and/or through the community. As the goal for surrounding communities' fire return interval is met, fire should be prescribed at a time when water in the marshes is low or absent (April-June). Application of prescribed burns only during winter months, when the depression holds water, allows for establishment of shrubs and/or pines. A high percentage of woody species may eventually reduce the hydroperiod and lead to undesirable succession. Marshes with substantial shrub cover (either within the marsh or on the surrounding edges) should be burned on a shorter return interval than herbaceous subtypes, in order to allow conversion to an herb dominated situation. Any hydrological disturbances, such as ditches, firebreaks, and roads, should be avoided. Plowed firebreaks should not limit fires from burning into this community, nor be placed around this community. Depression marshes will be assessed with other wetlands regarding the need for mechanical and chemical removal of fire shadows and hardwoods.

E. Dome Swamp**Description:**

Dome swamp is an isolated, shallow, usually circular, forested wetland depression. It typically has a domed profile, with small trees around the edges and larger trees growing within the deeper water in the center.

Dome swamp canopies at GSF are dominated by pond cypress (*Taxodium ascendens*), and bald cypress (*Taxodium distichum*). The subcanopy, if present at all, should contain younger members of the canopy. The shrub strata should be sparse due to maintenance by frequent growing season fires and should be open enough to allow wildlife and humans to enter the community freely. This should allow for a ground cover of herbs and grasses to form. The herbaceous layer should be moderately dense around the perimeter of the community becoming sparser toward the deeper, fern dominated interior of the swamp. Epiphytic plants are commonly found in dome swamps. Vines may also be present, but in low quantities.

The signature of dome swamp on the 1940 photographs appears as an isolated group of trees amongst an open terrestrial community. The signature is silvery gray with individual tree canopies (most commonly pond cypress) apparent. This signature can sometimes be difficult to distinguish from random groups of upland trees without comparison to the 1999 DOQQs. In the 1999 photography this community is blue/grey due to cypress with an underlying water feature.

Current Conditions:

Dome swamps are common throughout GSF. Also see the community description for mesic flatwoods. These small, shallow depressions tend to have a canopy and subcanopy of pond cypress (*Taxodium ascendens*) with scattered slash pine (*Pinus elliottii*) becoming more common along the ecotonal edges. Other trees and tall shrubs common in the midstory of this natural community includes dahoon (*Ilex cassine*), loblolly bay (*Gordonia lasianthus*), red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), swamp laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), blackgum (*Nyssa sylvatica*), and swamp bay (*Persea palustris*), all of which are more common along the shallower edges of the community. The understory is made up of younger members of the canopy and midstory, with southern bayberry (*Morella cerifera*), fetterbush (*Lyonia lucida*), titi (*Cyrilla racemiflora*), swamp bay (*Persea palustris*), coastalplain willow (*Salix caroliniana*), common buttonbush (*Cephalanthus occidentalis*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), and sawtooth blackberry (*Rubus pensilvanicus*). The herbaceous layer is made up of primarily ferns and graminoids which is most dense along open edges of the swamp. Common species include: maidencane (*Panicum hemitomon*), Virginia chain fern (*Woodwardia virginica*), beaksedge (*Rhynchospora* sp.), toothed midsorus fern (*Telmatoblechnum serrulatum*), yellow-eyed grass (*Xyris* sp.), rush (*Juncus* sp.), Carolina redroot (*Lachnanthes caroliniana*), soft rush (*Juncus effusus* ssp. *Solutus*), rosy camphorweed (*Pluchea baccharis*), narrowfruit horned beaksedge (*Rhynchospora inundata*), foxtail (*Setaria* sp.), and cattail (*Typha* sp.).

A few of the historic dome swamps at GSF were planted with pine (often slash pine) in the past along with the surrounding uplands and managed as pine plantations with varying degrees of disturbance from site preparation (bedding, herbicides, etc.). Areas of these swamps that have received some thinning, but retain planted pines, are mapped as ‘restoration’ dome swamp to indicate that management is moving the community towards a more natural structure. Restoration dome swamps are differentiated from areas mapped as dome swamp typically because they contain a denser canopy of pines that will likely need to be thinned as they reach maturity, as well as higher numbers of early successional species that established during ground disturbance related to silviculture practices.

Fire Regimes:

Historically, fires would have swept through the dome swamps when the surrounding uplands burned, approximately every 1 to 5 years. Presently, prescribed fires should be allowed to burn into these swamps when the surrounding uplands burn. Depending on climatic conditions and fuel moistures during the burn, the fire may burn completely through the swamp or may just creep into the shallower areas or edges.

Management Needs:

Prescribed fires from surrounding upland communities should be encouraged to enter and/or carry through this community, fuel load permitting. This will help maintain/create an herbaceous ecotone and to prevent encroachment by undesirable woody species. Fire is essential for the maintenance of dome swamps. Applying growing season fires that are effective at reducing shrub encroachment and maintaining or increasing herbaceous percent covers should be the primary focus of management when fuel and weather conditions allow. Firebreaks and other forms of disturbance should be avoided. Heavy machinery, including forest equipment and

vehicular traffic should not be allowed to enter the dome swamp community. Dome swamps will be assessed with other wetland communities on the forest regarding the need for mechanical and chemical removal of fire shadows and hardwood species such as titi.

F. Floodplain Marsh

Description:

Floodplain marshes are wetlands of herbaceous vegetation and shrubs that occur in river and stream floodplains on sandy alluvial soils with considerable peat accumulations. These marshes are flooded with flowing water for much of the year.

Sand cordgrass (*Spartina bakeri*), sawgrass (*Cladium jamaicense*), and maidencane (*Panicum hemitomon*) are common dominants, but various other herbs may be found distributed along a hydrologic gradient. Broadleaf emergent and floating plants occupy the deepest, most frequently flooded sites, and mixed herbaceous stands are found in the somewhat higher portions of the marsh. In wetter sites, coastalplain willow (*Salix caroliniana*) or common buttonbush (*Cephalanthus occidentalis*) may form shrub thickets. The highest part of the marsh is often a drier, wet prairie-like zone with a large diversity of graminoids and forbs. While the progression from high to low marsh occurring generally from the upland edge to the river edge, these vegetation patches may also be scattered throughout the marsh, which provides a diversity of habitat beneficial to wildlife.

The signature of this community on the 1940s aerial photography is a finely textured medium to dark grey color and is very distinctive compared to surrounding communities. The fine texture is created by the presence of a mosaic of shrubs and emergent vegetation.

Current Conditions:

The floodplain marsh at Goethe is shrubby in nature. The canopy layer of floodplain marsh at GSF is sparse around the edges of the community and nonexistent in the center. Red maple (*Acer rubrum*) and loblolly bay (*Gordonia lasianthus*) are both present. The tall shrub layer is dense and forms an entanglement composed of dahoon (*Ilex cassine*), southern bayberry (*Morella cerifera*), and coastalplain willow (*Salix caroliniana*). The short shrub cover is made up of Virginia willow (*Itea virginica*), southern bayberry, and highbush blueberry (*Vaccinium corymbosum*). Herbs are moderately abundant and include false nettle (*Boehmeria cylindrica*), spotted water hemlock (*Cicuta maculata*), marshpennywort (*Hydrocotyle* sp.), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis* var. *spectabilis*), mingled beaksedge (*Rhynchospora mixta*), sawtooth blackberry (*Rubus pensilvanicus*), and bladderwort (*Utricularia* sp.). Species present in the woody vine category are rattan vine (*Berchemia scandens*), laurel greenbrier (*Smilax laurifolia*), and eastern poison ivy (*Toxicodendron radicans*).

Currently, floodplain marsh at GSF is restricted to the central eastern portion along Black Prong occurring alongside a floodplain mosaic including floodplain swamp, bottomland forest, and hydric hammock.

Fire Regimes:

The characteristic herbaceous species of this community re-sprout vigorously following burns, and there is evidence that fire helps to limit shrub invasion. Given the landscape position of the floodplain marsh on GSF, natural fires would likely only occur under drier conditions.

Management Needs:

Floodplain marshes are maintained by regimes of fire and water. Prescribed fire, in addition to maintenance or restoration of natural hydrology, may aid in reducing shrub cover in floodplain marsh. Burning is often used as a tool to decrease fuel loads and to maintain wildlife habitat and natural community structure. Prescribed burns should leave a patchwork of unburned habitat to provide shelter for marsh wildlife. The landscape position of the floodplain marsh at Goethe likely limits regular burning since it is adjacent to floodplain swamp and hydric hammock.

Fire will carry through this habitat only during extreme droughts under ideal conditions. Any hydrological disturbances, such as ditches, firebreaks, and roads, should be avoided. Plowed firebreaks should not limit fires from burning into or extinguishing in this community. No active management needs to occur within floodplain marsh of GSF.

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. Trees are often buttressed, and the understory and groundcover are sparse.

The canopy and subcanopy are generally dominated by cypress (*Taxodium* spp.) and swamp tupelo (*Nyssa biflora*), with less flood tolerant trees and shrubs found on the hummocks and ridges within the swamp. Shrubs and smaller trees may be present. A ground cover of flood tolerant ferns and herbs are often found in floodplain swamps. Swamps with stagnant water typically have a mixture of floating aquatics. Eastern poison ivy (*Toxicodendron radicans*) is a frequent vine in this community.

The floodplain swamp signature, a gray/blue-dominated color intermixed with white is best identified on 1999 infrared photography. This community is often long and linear due its association with streams. Comparing this signature to the 1940 aerial photography is useful for determining historical community extents. The floodplain swamp signature in the 1940 photography can be difficult to discern from other hydric forested communities but the silvery gray with individual tree canopies (most commonly pond cypress) can be diagnostic in some areas.

Current Conditions:

The canopy layer of floodplain swamp at GSF is closed and well developed with mature trees dominating. Pond cypress (*Taxodium ascendens*) is dominant but red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), slash pine (*Pinus elliottii*), swamp laurel oak (*Quercus laurifolia*) and American elm (*Ulmus americana*) are common canopy associates. There are few to no shrubs or herbs in this community due to long hydroperiods and limited light penetration

through the closed canopy. Epiphytes are limited to Spanish moss (*Tillandsia usneoides*). Vines of muscadine (*Vitis rotundifolia*) are occasional.

Currently, floodplain swamp at GSF is restricted to the central eastern portion along Black Prong occurring in a floodplain mosaic including floodplain marsh, bottomland forest, and hydric hammock.

Fire Regimes:

Floodplain swamps are not fire adapted communities and rarely burn because of flooding and/or saturated soils.

Management Needs:

The floodplain swamp community is thought to be very stable as long as hydrological conditions and water quality are maintained. Maintaining natural hydroperiods is critical to the health of floodplain swamps. Disruption or alteration in water level can be detrimental to the reproduction of many plant species. Hydrology alteration also creates a disturbance that facilitates non-native species establishment. Prescribed fire is not necessary for this community. Fires do, however, enter the edges of this community and typically extinguish. In areas where this community is adjacent to pyrogenic upland communities an herb or shrub dominated ecotone should form as a result of frequent fire application. Monitoring this community for invasive species and assessing for excessive erosion or drainage features will be a priority.

H. Hydric Hammock

Description:

Hydric hammock is an evergreen hardwood and/or palm forest with a variable understory typically dominated by palms and ferns occurring on moist soils, often with limestone very near the surface. While the species composition varies, the community generally has a closed canopy of oaks and palms, and open understory, and a sparse to a moderate groundcover of grasses and ferns. Cabbage palm is a common to dominant component of hydric hammock. The understory may contain a number of small trees and shrubs. Vines may be frequent and diverse in hydric hammock. Herb species in this community, when present, includes mostly graminoids and ferns.

The hydric hammock signature in the 1940 photography is often difficult to discern from other closed canopied forests or shrubby wet flatwoods and was not used solely for identifying this habitat. The mature and irregular canopy makes this habitat appear coarsely textured relative to surrounding communities. Comparing recent aerial photographs (2019) to the 1940 images is moderately useful for determining historical community extents.

Current Conditions:

Hydric hammock is concentrated in the southern portion of GSF. The hydric hammocks at GSF have a diverse canopy layer including slash pine (*Pinus elliottii*), pond cypress (*Taxodium ascendens*), swamp laurel oak (*Quercus laurifolia*), sweetgum (*Liquidambar styraciflua*), live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), and American elm (*Ulmus americana*). The subcanopy is dominated by cabbage palm, slash pine, sweetgum, swamp laurel oak, and water oak (*Quercus nigra*). The midstory is made up of younger members of the canopy and subcanopy in addition to taller shrubs like common buttonbush (*Cephalanthus occidentalis*),

southern bayberry (*Morella cerifera*), groundsel tree (*Baccharis halimifolia*), and American hornbeam (*Carpinus caroliniana*). The shrubby understory contains the above listed species, in addition to shorter species like saw palmetto (*Serenoa repens*), American beautyberry (*Callicarpa americana*), and red buckeye (*Aesculus pavia*). The herbaceous understory in the hydric hammock of GSF is sparse with only a few species: ovateleaf Indian-plantain (*Arnoglossum ovatum*), sedge (*Carex* sp.), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), witchgrass (*Dichanthelium* sp.), Virginia chain fern (*Woodwardia virginica*), and common blue violet (*Viola sororia*).

Fire Regimes:

Fire is not considered an important component of hydric hammock dynamics; however, they do burn occasionally. Cabbage palms are fire tolerant and intense fires favor this species. Live oak can survive low intensity fires. Flooding duration and frequency are primary factors in species composition. While most hydric hammock trees are at least somewhat adapted to flooding, the ranges of tolerance vary according to timing and depth of inundation. Gulf Coast lowlands hydric hammock as found on Goethe rarely burns even under high fuel loads and high fire danger weather.

Management Needs:

This community requires no active management. All silviculture, vehicle traffic, firebreaks, hydrologic disturbance, clearing and other disruptive activities should be minimized in this community. Prescribed fires should be allowed to burn up to the edge of hydric hammock and extinguish naturally. The hydric hammocks at Goethe are in good to excellent condition currently and any alteration should be discouraged. A particular area on the boundary of the property is a nice example and contains at least two rare plants, variable-leaved Indian-plantain (*Arnoglossum diversifolium*) and Florida hasteola (*Hasteola robertiorum*). Care should be taken near these populations when boundary maintenance is implemented to reduce negative impacts on these populations.

I. Mesic Flatwoods

Description:

Mesic flatwoods are forests of variable density, southern pine species, most notably longleaf pine (*Pinus palustris*) and/or slash pine (*Pinus elliottii*). There is often little or no subcanopy or tall shrubs, other than pine recruitment. The shrub layer is moderately dense with an average height that does not generally exceed four feet. The open pine canopy and moderate shrub layer allows ample light penetration for a diverse assemblage of herbaceous species.

This community occurs at GSF on flat to gently sloping topography and often forms a mosaic intermixed with wet flatwoods and dome swamps. Combined, the flatwoods matrix and embedded dome swamps cover nearly 32,000 acres on GSF. Mesic flatwoods has a canopy dominated by longleaf pine but may also include slash pine. The subcanopy layer is often sparse and includes species that are being promoted into the canopy. The canopy and subcanopy are multi-aged. Pines are generally spaced in such a way that they contribute fine fuel in the form of needle drop, but do not negatively impact the groundcover stratum by shading. The shrub layer is low in stature and fire maintained to a height generally less than five feet.

In the 1940 aerial photography the signature of mesic flatwoods appears as light to medium gray, relative to surrounding hardwood and wetland communities, with a smooth texture and intermixed with scattered darker textures representing trees and/or shrub inclusions. The signature usually does not contain any white coloration that is typical of sandhill or other xeric habitats. This character is useful for separating mesic flatwoods from surrounding sandhill or scrubby flatwoods. This signature can often be similar to wet flatwoods and wet prairie areas that contain trees. The 2004 and 2019 aerial photographs were consulted when delineating wet flatwoods from mesic flatwoods. Wet flatwoods is often shrubbier and thus appears as a darker green in the current photography. Mesic flatwoods has a lighter green hue. Differentiation between these two communities on any aerial photography can be challenging.

Current Conditions:

Mesic flatwoods occur throughout GSF. The canopy and subcanopy are generally dominated by slash pine (*Pinus elliottii*) and/or longleaf pine (*Pinus palustris*). Additional species scattered throughout the subcanopy of the mesic flatwoods of GSF include water oak (*Quercus nigra*), sand live oak (*Quercus geminata*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), cabbage palm (*Sabal palmetto*), southern magnolia (*Magnolia grandiflora*), sugarberry (*Celtis laevigata*), red cedar (*Juniperus virginiana*), and live oak (*Quercus virginiana*). These species are typically found near the interface with hardwood dominated communities such as baygall and hammock and can signify insufficient fire in those areas. The midstory is made up of young canopy and subcanopy species as well as taller growing shrubs such as: southern bayberry (*Morella cerifera*), slash pine, water oak, winged sumac (*Rhus copallinum*), gallberry (*Ilex glabra*), sweetbay, cabbage palm, sand live oak (*Quercus geminata*), loblolly bay, sweetgum, swamp bay (*Persea palustris*), tarflower (*Bejaria racemosa*), coastalplain staggerbush (*Lyonia fruticosa*), and longleaf pine. The shrubby understory is quite diverse and dominated by saw palmetto (*Serenoa repens*), gallberry, winged sumac, southern bayberry, coastalplain staggerbush, fetterbush (*Lyonia lucida*), shiny blueberry (*Vaccinium myrsinites*), and tarflower (*Bejaria racemosa*). Other species common in the shrubby understory of the mesic flatwoods of GSF include: netted pawpaw (*Asimina reticulata*), slash pine, sand blackberry (*Rubus cuneifolius*), St. John's wort (*Hypericum sp.*), water oak, dwarf live oak (*Quercus minima*), groundsel tree (*Baccharis halimifolia*), American beautyberry (*Callicarpa americana*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), rusty staggerbush, sand live oak, Chapman's oak (*Quercus chapmanii*), laurel oak, myrtle oak (*Quercus myrtifolia*), sweetbay, eastern poison ivy (*Toxicodendron radicans*), red maple (*Acer rubrum*), Florida maple (*Acer saccharum* ssp. *floridanum*), common persimmon (*Diospyros virginiana*), loblolly bay, roundpod St. John's wort (*Hypericum cistifolium*), myrtleleaf St. John's wort (*Hypericum myrtifolium*), sawtooth blackberry (*Rubus pensilvanicus*), gopher apple (*Geobalanus oblongifolius*), fourpetal St. John's wort (*Hypericum tetrapetalum*), dwarf bayberry (*Morella pumila*), longleaf pine, and runner oak (*Quercus pumila*). The herbaceous layer of mesic flatwoods at GSF can be quite dense in areas where the fire-return interval is high; the dominant species in these areas are bracken fern (*Pteridium aquilinum*), wiregrass (*Aristida stricta*), beaksedge (*Rhynchospora sp.*), and bluestem (*Andropogon sp.*). Other herbaceous species common in mesic flatwoods include dogfennel (*Eupatorium capillifolium*), panic grass (*Panicum sp.*), narrowleaf silkgrass (*Pityopsis graminifolia*), witchgrass (*Dichanthelium sp.*), goldenrod (*Solidago sp.*), tall elephantsfoot (*Elephantopus elatus*), blackroot (*Pterocaulon pycnostachyum*), maidencane (*Panicum hemitomon*), Mohr's thoroughwort (*Eupatorium*

mohrii), yellow milkwort (*Polygala rugelii*), and Carolina yellow-eyed grass (*Xyris caroliniana*).

The historic mesic flatwoods at GSF are primarily comprised of even-aged or two-aged stands of natural longleaf and slash pine with a few slash pine plantations and many old remnant longleaf pine trees scattered throughout the forest. Since acquisition, the obvious sites have been replanted; longleaf pine has been planted in southern pine beetle spots and salvaged wildfire areas. Sites that have not yet achieved the desired burn interval have an overly thick midstory of gallberry and palmetto rather than the desired groundcover of grasses and forbs, yet such sites have a diversity of suppressed species that should respond to release. Since acquisition, the first thinning has been completed on most stands within the forest, most of the forest has been burned at least once, and many areas have received several burns. Many stands have already been burned and are falling into a two-to-four-year cycle.

Fire Regimes:

Mesic flatwoods require frequent fires. Historically, fires ignited by lightning during the growing season would have spread across the landscape every 2 to 4 years and burned most of the large mesic flatwoods complex. The dominant pine species are adapted for high fire returns, and characteristic species like wiregrass, require fire to flower.

Management Needs:

Mesic flatwoods depend on frequent, low-intensity fires to maintain an open structure and a diverse herbaceous layer. Many plant species in mesic flatwoods rely on these fires for reproduction. Management should focus on conducting prescribed burns every two to four years. Growing season fires are more effective at controlling shrubs and hardwood encroachment than winter burns but will only be conducted when fuel and weather conditions allow. The proper maintenance of this community is crucial to maintaining other adjacent communities such as depression marsh, dome swamp, wet flatwoods, and wet prairie. During this planning period, small areas will be selected to begin moving them onto a growing season rotation. Priority growing season weather windows will be allocated to flatwoods burn units.

Soil disturbances should be minimized. This will help preserve the remaining wiregrass component, a crucial factor for carrying fire through the community. Maintaining an open and uneven-aged pine canopy will aid in increasing herbaceous species diversity by allowing good light penetration to the forest floor. Longleaf pine should be considered in any new plantings in mesic flatwoods to enable fires to be applied soon after planting.

Avoid roller chopping in areas that support wiregrass and other native species. Although chopping may reduce shrub cover in long unburned areas, it also reduces wiregrass cover and increases weedy species that can be aggressive and are less likely to carry a fire. The use of plowed firebreaks and other practices that disturb the soil is also discouraged. Whenever possible, use existing roads, wetlands, and other non-pyrogenic communities for firebreaks. Removal of invasive species is important to reduce competition with native species. Road corridors throughout GSF flatwoods communities have created a vector for invasive species such as cogongrass. Treatments on all known populations are being implemented twice per year.

J. Sandhill

Description:

Sandhill occurs 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 vegetation is characterized by southern pine tree species with a sparse midstory of deciduous oaks and a moderate to dense groundcover of grasses, herbs, and low shrubs. Indicator species of this community are longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*), and wiregrass (*Aristida stricta*). The shrub layer in this community should be very open and may include turkey oak, bluejack oak (*Q. incana*), sand live oak (*Q. geminata*), sand post oak (*Q. margaretta*), and saw palmetto (*Serenea repens*). The herbaceous groundcover is moderate to dense and contains the highest plant diversity in sandhill. This should be dominated by wiregrass, as well as a wide variety of other graminoids and forbs. Exposed bare patches of sandy soil are common, but herbs and pine litter generally form a continuous layer capable of carrying frequent, low intensity fires.

The sandhill signature on the 1940 aerial photography is white with light and dark grey textures representing scattered shrubs and trees (both pine and scattered oaks). Sandhill, scrub, and scrubby flatwoods often appear as a similar signature and need to be field verified to determine the correct community. Scrubby flatwoods typically contain less exposed sand compared to sandhill.

Current Conditions:

Sandhill occurs throughout GSF, but there are especially large swatches of this community in the northern section of the forest. The canopy of this natural community is typically comprised of widely scattered longleaf pine (*Pinus palustris*), but sand live oak (*Quercus geminata*), and slash pine (*Pinus elliotii*) are also commonly members of the canopy. Live oak (*Quercus virginiana*), sand pine (*Pinus clausa*), and black cherry (*Prunus serotina*) are also species observed in the canopy of this community. The subcanopy is also typically widely spaced and dominated by turkey oak (*Quercus laevis*), sand live oak, laurel oak (*Quercus hemisphaerica*), longleaf pine, bluejack oak (*Quercus incana*), and southern bayberry (*Morella cerifera*). The shrubby midstory generally contains turkey oak, sand live oak, laurel oak (*Quercus hemisphaerica*), longleaf pine, and bluejack oak. Additionally American beautyberry (*Callicarpa americana*), common persimmon (*Diospyros virginiana*), slash pine, winged sumac (*Rhus copallinum*), fetterbush (*Lyonia lucida*), cabbage palm (*Sabal palmetto*), gallberry (*Ilex glabra*), sparkleberry (*Vaccinium arboreum*), Florida rosemary (*Ceratiola ericoides*), yaupon (*Ilex vomitoria*), and sand pine can often be found in the shrubby midstory of sandhill at Goethe. The shrubby understory is typically dominated by turkey oak, sand live oak, and laurel oak, but other species such as longleaf pine, bluejack oak, southern bayberry, water oak, American beautyberry, common persimmon, slash pine, winged sumac, fetterbush, cabbage palm, gallberry, sparkleberry (*Vaccinium arboreum*), Florida rosemary, yaupon (*Ilex vomitoria*), and sand pine are also common. The herbaceous ground cover of sandhill at Goethe can be quite diverse, although widely scattered. This community is typically dominated by wiregrass (*Aristida stricta*), bluestem (*Andropogon* sp.), dogfennel (*Eupatorium capillifolium*), witchgrass (*Dichanthelium* sp.), and narrowleaf silkgrass (*Pityopsis graminifolia*). Other common species of the herbaceous layer include: panic grass (*Panicum* sp.), bracken fern (*Pteridium aquilinum*), yankeeweed (*Eupatorium compositifolium*), Michaux's croton (*Croton michauxii*), Florida alicia

(*Chapmannia floridana*), scurf hoary-pea (*Tephrosia chrysophylla*), maidencane (*Panicum hemitomon*), bahiagrass (*Paspalum notatum*), sensitive pea (*Chamaecrista* sp.), loosestrife (*Lythrum* sp.), crowngrass (*Paspalum* sp.), goldenrod (*Solidago* sp.), coastalplain chaffhead (*Carphephorus corymbosus*), tall elephantsfoot (*Elephantopus elatus*), blazing star (*Liatris* sp.), blackroot (*Pterocaulon pycnostachyum*), goldenaster (*Chrysopsis* sp.), beaksedge (*Rhynchospora* sp.), yellow jessamine (*Gelsemium sempervirens*), broomsedge bluestem (*Andropogon virginicus*), vanillaleaf (*Carphephorus odoratissimus*), flatsedge (*Cyperus* sp.), Mohr's thoroughwort (*Eupatorium mohrii*), downy milkpea (*Galactia volubilis*), pinweed (*Lechea* sp.), creeping little bluestem (*Schizachyrium stoloniferum*), queen's delight (*Stillingia sylvatica*), centipede grass (*Eremochloa ophiuroides*), Elliott's milkpea (*Galactia elliotii*), chalky bluestem (*Andropogon virginicus* var. *glaucus*), arrowfeather threeawn (*Aristida purpurascens*), threeawn (*Aristida* sp.), pineland wild indigo (*Baptisia lecontei*), dayflower (*Commelina* sp.), summer farewell (*Dalea pinnata*), dogtongue wild buckwheat (*Eriogonum tomentosum*), trailing ratany (*Krameria lanceolata*), coastalplain palafox (*Palafoxia integrifolia*), whitetop aster (*Sericocarpus tortifolius*), coastalplain dawnflower (*Stylisma patens*), and Florida arrowroot (*Zamia integrifolia*).

Much of the sandhill at GSF has been planted with pine (often slash pine) and managed as pine plantations with varying degrees of disturbance from site preparation. Dense, un-thinned planted pine stands on historic sandhill still exist but are mapped as pine plantations. Stands that have received some thinning and fire, but remain highly disturbed, are mapped as 'restoration' sandhill to indicate that management is moving the community towards a more natural structure. Restoration sandhill areas are differentiated from areas mapped as sandhill typically because they contain a denser canopy of pines that will likely need to be thinned as they reach maturity, have a dense shrub layer dominated by Florida rosemary (*Ceratiola ericoides*), and/or have a higher cover of early successional species that established during ground disturbance related to silviculture practices.

Fire Regimes:

Fire is a dominant environmental factor in sandhill ecology, historically burning every 1 to 3 years. Frequent low-intensity ground fires, especially in the growing season, reduce hardwood competition and perpetuate pines and grasses. Longleaf pine and the shrubby elements of sandhill are fire adapted, and species like wiregrass require fire to flower. Lack of fire may ultimately lead to the development of a xeric hammock, turkey-oak barrens, or sand pine dominated sandhill.

Management Needs:

Management activities in the sandhill communities of GSF should focus on regular prescribed burning while minimizing all practices that create soil disturbance. Roller chopping should be limited in sandhill habitats due to the fragility of groundcover vegetation under xeric conditions. Hardwood removal should ideally be accomplished by hand, chemical application, or mechanical means that do not disturb the xeric soils. Pairing sound management practices, such as minimal soil disturbances with regular prescribed fires should maintain the natural open structure of sandhill by limiting woody encroachment. Prescribing fires from late spring through early summer (when conditions allow) will stimulate herbaceous species growth and diversity while

reducing hardwood encroachment. Growing season prescribed fire is applied nearly exclusively in this community.

Without frequent fires, sandhills may eventually succeed to low-diversity hammocks. Groundcover restoration will be needed in these communities as well as in pine plantations, pastures, and ruderal areas. Groundcover restoration, including re-introducing and restoring wiregrass (*Aristida stricta*), may also be necessary to facilitate effective prescribed burns in future years. Staff currently harvest wiregrass from stands in good condition to plant in those needing restoration. Wiregrass is the key component of this community. This single species is a barometer for canopy cover, shrub cover, fuel loads, and overall community health. In long unburned and degraded sandhill, staff will assess the need for harvest and conduct biomass harvests where the hardwoods have taken over and are inhibiting groundcover health.

Gopher tortoises are considered a keystone ecosystem component of sandhill. It is therefore critical to minimize any detrimental effects to the gopher tortoise population and its burrows during any management activities. Precautions will be utilized during heavy equipment operation within sandhills that minimize impacts on wildlife as prescribed in the most recent Wildlife Best Management Practices manual.

K. Sandhill Upland Lake

Description:

Sandhill upland lakes are shallow rounded solution depressions occurring in sandy upland communities. They are generally permanent water bodies, although water levels may fluctuate substantially.

Sandhill upland lakes are primarily composed of sands with organic deposits increasing with water depth. Characteristically they have clear, circumneutral to slightly acidic moderately soft water.

Current Conditions:

Sandhill upland lakes occur on the northeast portion of GSF. Since the lakes are inundated year-round, the majority of vegetation is around the ecotonal edges of the lakes. Along these edges short shrubs like myrtleleaf St. John's wort (*Hypericum myrtifolium*), pond cypress (*Taxodium ascendens*), sand blackberry (*Rubus cuneifolius*), and saw palmetto (*Serenoa repens*) grow in portions that are periodically dry. The herbaceous groundcover along these edges tends to be dominated by hydrophytic grasses and other herbs such as maidencane (*Panicum hemitomon*), bluestem (*Andropogon* sp.), blue maidencane (*Amphicarpum muehlenbergianum*), southern cutgrass (*Leersia hexandra*), pale meadowbeauty (*Rhexia mariana*), dogfennel (*Eupatorium capillifolium*), yellow-eyed grass (*Xyris* sp.), Carolina redroot (*Lachnanthes caroliana*), fascicled beaksedge (*Rhynchospora fascicularis*), flatsedge (*Cyperus* sp.), big carpetgrass (*Axonopus furcatus*), watershield (*Brasenia schreberi*), saltmarsh umbrellasedge (*Fuirena breviseta*), smartweed (*Polygonum* sp.), grassy arrowhead (*Sagittaria graminea*), and netted nutrush (*Scleria reticularis*).

Many of the edges of historic sandhill upland lake at GSF have been planted with pine (often slash pine) and managed as pine plantations with varying degrees of disturbance from site

preparation. Dense, un-thinned planted pine stands on historic sandhill upland lake still exist but are mapped as pine plantations.

Fire Regimes:

Sandhill upland lakes are typically permanent bodies of water, the drier edges should burn with the surrounding communities.

Management Needs:

Sandhill upland lakes are extremely vulnerable to hydrological manipulations. The excessive water withdrawals and groundwater pollution in the surrounding uplands could significantly alter the nutrient balance. Their direct connection with the aquifer means they should be diligently protected from chemical pollution. Additional acquisitions adjacent to sandhill upland lake currently found on Goethe have been added into the optimal boundary map. Maintaining a publicly-owned buffer around these resources will provide the most protection.

Sandhill upland lakes are extremely important breeding areas for terrestrial amphibians, including the threatened gopher frog (*Lithobates capito*). They are important watering holes for mammals and birds as well.

L. Scrubby Flatwoods

Description:

Scrubby flatwoods have a canopy of southern pine tree species and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. The vegetation consists of a combination of scrub and mesic flatwoods species.

The principal canopy species of scrubby flatwoods is longleaf pine (*Pinus palustris*). A subcanopy is sparse to absent, however, sand live oak (*Quercus geminata*) and live oak (*Quercus virginiana*) may be found along with younger longleaf pine. Tall shrubs are often more common than in mesic flatwoods but are sparse to moderately dense. Short shrubs form a moderate to sparse cover and are usually similar in composition to those in mesic flatwoods. The herbaceous layer is sparse to dense and typically includes wiregrass (*Aristida stricta*). Epiphytes are uncommon, but vines occur occasionally and include earleaf greenbrier (*Smilax auriculata*).

The scrubby flatwoods signature on the historic aerial photography is white with light and dark grey textures representing scattered shrubs and trees. Sandhill, scrub, and scrubby flatwoods often have similar signatures and need to be field verified. Scrubby flatwoods typically contain less exposed sand compared to sandhill.

Current Conditions:

Scrubby flatwoods occur throughout GSF. The canopy layer of this community is usually dominated by widely spaced slash pine (*Pinus elliottii*) and/or longleaf pine (*Pinus palustris*). The subcanopy often contains scattered sand live oak (*Quercus geminata*), slash pine, longleaf pine, water oak (*Quercus nigra*), and/or turkey oak (*Quercus laevis*). The shrubby midstory, when present, commonly contains younger members of the canopy and subcanopy, as well as winged sumac (*Rhus copallinum*), bluejack oak (*Quercus incana*), and myrtle oak (*Quercus myrtifolia*). The shrubby understory in this community is more diverse, and typically dominated

by saw palmetto (*Serenoa repens*). Other scrubby shrub species like myrtle oak (*Quercus myrtifolia*), shiny blueberry (*Vaccinium myrsinites*), sand live oak, Chapman's oak (*Quercus chapmanii*), winged sumac, gallberry (*Ilex glabra*), and southern bayberry (*Morella cerifera*) are also common here. In areas that see a high fire return, the herbaceous layer of scrubby flatwoods is fairly dense and diverse. The herbaceous groundcover tends to be dominated by wiregrass (*Aristida stricta*) and bracken fern (*Pteridium aquilinum*). Other species like panic grass (*Panicum* sp.), bluestem (*Andropogon* sp.), dogfennel (*Eupatorium capillifolium*), goldenrod (*Solidago* sp.), tickseed (*Coreopsis* sp.), narrowleaf silkgrass (*Pityopsis graminifolia*), blackroot (*Pterocaulon pycnostachyum*), queen's delight (*Stillingia sylvatica*), pinebarren frostweed (*Crocanthemum corymbosum*), slender flattop goldenrod (*Euthamia caroliniana*), coastalplain chaffhead (*Carphephorus corymbosus*), witchgrass (*Dichanthelium* sp.), tall elephantsfoot (*Elephantopus elatus*), lovegrass (*Eragrostis* sp.), blazing star (*Liatris* sp.), nutrush (*Scleria* sp.), Michaux's croton (*Croton michauxii*), Elliott's milkpea (*Galactia elliotii*), thin paspalum (*Paspalum setaceum*), fleabane (*Erigeron* sp.), passion-flower (*Passiflora* sp.), manyflower beardtongue (*Penstemon multiflorus*), and sweet goldenrod (*Solidago odora*) are also present.

Many of the historic scrubby flatwoods at GSF have been planted with pine (often slash pine) and managed as pine plantations with varying degrees of disturbance from site preparation. Dense, un-thinned planted pine stands on historic scrubby flatwoods still exist but are mapped as pine plantations. Stands that have received some thinning and fire, but remain highly disturbed, are mapped as 'restoration' scrubby flatwoods to indicate that management is moving the community towards a more natural structure. Restoration scrubby flatwoods are differentiated from areas mapped as scrubby flatwoods typically because they contain a denser canopy of pines that will likely need to be thinned as they reach maturity, as well as higher numbers of early successional species that established during ground disturbance related to silviculture practices.

Fire Regimes:

Scrubby flatwoods require frequent fires. Historically, fires ignited by lightning during the growing season would have spread across the landscape burning through the scrubby flatwoods every 5 to 15 years. The dominant pine species are adapted for high fire returns, and characteristic species like wiregrass, require fire to flower.

Management Needs:

Scrubby flatwoods generally burn along with the adjacent mesic flatwoods or sandhill. Sparse groundcover and incombustible scrub oak leaf litter may reduce the occurrence of fires leading to a slightly longer average fire return interval than is the case for mesic flatwoods and sandhill. Scrubby flatwoods depend on frequent, low-intensity growing season fires to maintain an open structure and a diverse herbaceous layer. Many plant species in this community rely on these fires for reproduction. Fire from adjacent mesic flatwoods should be allowed to burn into scrubby flatwoods. A fire prescription targeting the scrubby flatwoods will be considered if this natural community does not burn after repeated fires in the adjacent mesic flatwoods.

M. Sinkhole

Description:

Sinkholes are generally characterized as cylindrical or conical depressions with steep walls often containing limestone. This community can also be sand-lined, with, or without a seasonal water table at the surface. This depends on the age and development of the sink.

Sinkholes typically lack vegetation but may contain scattered shrubs and trees. Herbs and shrubs are most commonly found on the steeply sloped sinkhole walls. The sparse shrub layer is comprised of coastalplain willow (*Salix caroliniana*). The only herbaceous vegetation occurring within the water of the sinkhole is duckweed (*Lemna* sp.). Most sinkholes contain permanent or seasonal open water features.

Sinkholes are present on GSF within the upland hardwood forest, upland mixed woodland, and sandhill communities and are most common in the northern portion of the forest. They are often not distinguishable on aerial photography.

Current Conditions:

Sinkholes typically lack vegetation but may contain scattered shrubs. The canopy layer immediately above and around the sinkhole community is dominated by moderately dense swamp laurel oak (*Quercus laurifolia*) with a shrub layer comprised of coastalplain willow (*Salix caroliniana*). The only herbaceous vegetation occurring within the water of the sinkhole are the floating aquatics such as dotted duckweed (*Landoltia punctata*) and duckweed (*Lemna* sp.). Most sinkholes contain permanent or seasonal open water features. The sinkhole community on GSF lacks a well-developed and diverse vegetation association.

Fire Regimes:

Sinkhole is not a fire adapted community but may receive infrequent fires within the upper ecotone of this community when found in a pyrogenic habitat.

Management Needs:

Little active management should be required for this community type. Monitoring and control of invasive plants, such as Japanese climbing fern (*Lygodium japonicum*), should be the primary management requirement. Burning adjacent fire-adapted communities and allowing fire to burn into the sinkhole edges is desirable, when applicable. Hydrologic disturbances such as ditches and fire breaks should be minimized, if not avoided altogether. Areas that have been converted to borrow pits should also be continually monitored and surveyed for invasive species.

N. Upland Hardwood Forest

Description:

Upland hardwood forest is a well-developed, closed canopy forest dominated by deciduous hardwood trees on mesic soils in areas sheltered from fire. It occurs on rolling mesic hills and slopes above river floodplains, and often has limestone or phosphatic rock near the surface. Commonly included within the upland hardwood forests at GSF are limestone outcrops. Limestone outcrops are unique assemblages of plant species that occur on exposed limestone. Limestone outcrop communities commonly occur in Florida's karst topography and are often

found within geologic features such as sinkholes. Limestone outcrops are often covered with mosses, liverworts, ferns or, occasionally, with herbs and shrubs in crevices.

This community should have a diverse assemblage of deciduous and evergreen tree species in the canopy, with a midstory of shade-tolerant shrubs, and a sparse groundcover. Characteristic canopy trees include southern magnolia (*Magnolia grandiflora*), pignut hickory (*Carya glabra*), sweetgum (*Liquidambar styraciflua*), Florida maple (*Acer saccharum* ssp. *floridanum*), live oak (*Quercus virginiana*), laurel oak (*Q. hemisphaerica*), swamp chestnut oak (*Q. michauxii*), white ash (*Fraxinus americana*), and loblolly pine (*Pinus taeda*). The midstory should be made up of younger canopy species, as well as a variety of shrubs. The groundcover should be composed of shade-tolerant herbs, graminoids, and vines.

Current Conditions:

Upland hardwood forest at GSF occurs in the northern extents of the forest in the Watermelon Pond East Tract. This community has a dense canopy of laurel oak (*Quercus hemisphaerica*), live oak (*Quercus virginiana*), red cedar (*Juniperus virginiana*), and pignut hickory (*Carya glabra*). The subcanopy is dominated by sweetgum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), eastern hophornbeam (*Ostrya virginiana*), and basswood (*Tilia americana*). There is little to no midstory shrubs, but shrubby understory is made up of American beautyberry (*Callicarpa americana*), live oak (*Quercus virginiana*), and smallflower pawpaw (*Asimina parviflora*). Smallflower mock buckthorn (*Sageretia minutiflora*) is found around limestone outcrops. The sparse understory is primarily made up of ebony spleenwort (*Asplenium platyneuron*), woodsgrass (*Oplismenus setarius*), greendragon (*Arisaema dracontium*), angle pod (*Gonolobus suberosus*), partridgeberry (*Mitchella repens*), and white crownbeard (*Verbesina virginica*).

Fire Regimes:

Upland hardwood forest is not a fire-maintained community, although fire may naturally creep into the edges when the surrounding community burns, it is unlikely to burn through the understory of this community under normal conditions.

Management Needs:

Upland hardwood forests should be monitored for invasive species, disturbance from human activity, and feral hog rooting.

O. Upland Mixed Woodland

Desired Future Condition:

Upland mixed woodland occurs on loamy soils on drier sites than upland hardwood forest. It is distinguished from sandhill and upland pine by the absence of turkey oak (*Quercus laevis*), and often contains mockernut hickory (*Carya tomentosa*).

Upland mixed woodland in north central Florida should have an open to partially closed canopy of hardwoods such as southern red oak (*Quercus falcata*), mockernut hickory, post oak (*Quercus stellata*), mixed with longleaf pine (*Pinus palustris*). The midstory should be made up of scattered shrubs and small trees. The ground layer of upland mixed woodland should be dense with many species of grasses, forbs, and coppicing hardwoods.

Upland mixed woodland at GSF is believed to have occupied portions of the Watermelon Pond East Tract, occurring in a mosaic with upland hardwood forest and sandhill communities.

Current Conditions:

Former areas of upland mixed woodland at GSF on the Watermelon Pond East Tract is all currently mapped as successional hardwood forest. The area has been significantly disturbed, and the resulting forest is now primarily a stand of laurel oak (*Quercus hemisphaerica*). The canopy and subcanopy are dense leaving a shaded understory. There are also longleaf pines (*Pinus palustris*), loblolly pines (*Pinus taeda*), and slash pines (*Pinus elliottii*) remaining throughout the area. The subcanopy is comprised of red cedar (*Juniperus virginiana*), sweetgum (*Liquidambar styraciflua*), loblolly pine, black cherry (*Prunus serotina*), and laurel oak. Shrub layers are variable and consist of young canopy species plus cabbage palm (*Sabal palmetto*), sparkleberry (*Vaccinium arboreum*), slimleaf pawpaw (*Asimina angustifolia*), woolly pawpaw (*Asimina incana*), smallflower pawpaw (*Asimina parviflora*), American beautyberry (*Callicarpa americana*), common persimmon (*Diospyros virginiana*), red bay (*Persea borbonia*) pricklypear (*Opuntia humifusa*), and the invasive Caesar's weed (*Urena lobata*). Vines can be common in areas and include Virginia creeper (*Parthenocissus quinquefolia*), earleaf greenbrier (*Smilax auriculata*), cat greenbrier (*Smilax glauca*), yellow jessamine (*Gelsemium sempervirens*), bristly greenbrier (*Smilax tamnoides*), eastern poison ivy (*Toxicodendron radicans*), and muscadine (*Vitis rotundifolia*). Typical upland mixed woodland herbs are lacking due to past disturbance and the closed canopy. Species observed include beggarticks (*Bidens alba*), tread softly (*Cnidoscolus stimulosus*), tall elephantsfoot (*Elephantopus elatus*), fireweed (*Erechtites hieraciifolius*), woodsgrass (*Oplismenus setarius*), panic grass (*Panicum sp.*), and crowngrass (*Paspalum sp.*).

Fire Regimes:

Upland mixed woodland is often found in the ecotone between upland hardwood forest and frequently burned sandhill or upland pine where fires burn into the hardwood forest edge. The dominant hardwood species are more fire resistant than those of the upland hardwood forest, but less so than sandhills. Fires on adjacent fire-dominated communities should be allowed to creep into this community, naturally.

Management Needs:

Allowing prescribed fires in the adjoining sandhill to burn into this community type as occasional fire (variable but as little as two up to a 20-year interval) is necessary to maintain community structure.

P. Wet Flatwoods

Description:

Wet flatwoods are flat, poorly drained communities of southern pine species with a diverse understory of hydrophytic herbs and shrubs.

Wet flatwoods are characterized by a dense groundcover of wiregrass and a wide variety of other herbaceous species. The pine canopy is typically made up of one or a combination of longleaf pine (*Pinus palustris*), slash pine (*P. elliottii*), or pond pine (*P. serotina*). The subcanopy, if present, can contain a few scattered trees or shrubs such as sweetbay (*Magnolia virginiana*),

swamp bay (*Persea palustris*), loblolly bay (*Gordonia lasianthus*), pond cypress (*Taxodium ascendens*), dahoon (*Ilex cassine*), titi (*Cyrilla racemiflora*), and/or wax myrtle (*Myrica cerifera*). Shrub cover is minimal, low, and controlled by growing season burns. The herbaceous layers should be dense and diverse, containing a variety of forbs and graminoids.

Wet flatwoods are common throughout GSF. This community can occupy broad areas, but more commonly occurs as a transitional area, especially between dome swamps and mesic flatwoods, or as a lower elevation pine woods connecting wetlands. See comments in Mesic Flatwoods community description.

The signature of wet flatwoods on the 1940 photography occasionally appears as a smooth-textured medium gray to dark gray color, relative to the adjacent lighter grey mesic or xeric communities but can often also be darker in areas that are shrubbier or include obvious cypress nearer to drains or swamps. This signature lacks white, an indicator of bare sand and more typical of mesic and xeric communities. This can generally be used to separate wet flatwoods from surrounding habitats. More often mesic and wet flatwoods areas are indistinguishable on the 1940 photography. Deep rutting from vehicles crossing saturated wet flatwoods is often apparent in the 1940 photos and can be helpful in distinguishing these communities. The 2019 aerial photos and ground-truthing were used to delineate wet flatwoods from mesic flatwoods. Wet flatwoods are typically invaded by baygall vegetation and thus appears dark green, while mesic flatwoods has a lighter green hue. Differentiation between these two communities on any aerial photography can be problematic, particularly in areas with a dense pine canopy.

Current Conditions:

Wet flatwoods on GSF have a widely spaced canopy generally dominated by slash pine (*Pinus elliottii*), although other species such as pond cypress (*Taxodium ascendens*), longleaf pine (*Pinus palustris*), pond pine (*Pinus serotina*), and loblolly bay (*Gordonia lasianthus*) are occasionally scattered throughout. Younger slash pine is the dominant species in the subcanopy as well, but other species occur relatively frequently including loblolly bay, water oak (*Quercus nigra*), pond cypress, dahoon (*Ilex cassine*), sweetgum (*Liquidambar styraciflua*), cabbage palm (*Sabal palmetto*), red maple (*Acer rubrum*), and swamp bay (*Persea palustris*). Young trees and tall shrubs make up the relatively dense and diverse midstory which often includes: southern bayberry (*Morella cerifera*), loblolly bay, slash pine, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), swamp bay, cabbage palm (*Sabal palmetto*), winged sumac (*Rhus copallinum*), pond cypress, common buttonbush (*Cephalanthus occidentalis*), groundsel tree (*Baccharis halimifolia*), dahoon (*Ilex cassine*), rusty staggerbush (*Lyonia ferruginea*), and saw palmetto (*Serenoa repens*). The dense, shrubby understory of the wet flatwoods in GSF is dominated by gallberry, saw palmetto, fetterbush, and southern bayberry. Other shrubs common in this strata include sawtooth blackberry (*Rubus pensilvanicus*), loblolly bay (*Gordonia lasianthus*), slash pine, swamp bay, winged sumac, sweetgum, pond cypress, red maple (*Acer rubrum*), groundsel tree, common buttonbush (*Cephalanthus occidentalis*), water oak (*Quercus nigra*), coastalplain willow (*Salix caroliniana*), dahoon, titi (*Cyrilla racemiflora*), sweetbay (*Magnolia virginiana*), American beautyberry (*Callicarpa americana*), roundpod St. John's wort (*Hypericum cistifolium*), sand blackberry (*Rubus cuneifolius*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*), rusty staggerbush (*Lyonia ferruginea*), longleaf pine (*Pinus palustris*), and large gallberry (*Ilex coriacea*). The

herbaceous ground cover of this community can also be quite diverse, species that commonly occur include Virginia chain fern (*Woodwardia virginica*), maidencane (*Panicum hemitomon*), beaksedge (*Rhynchospora* sp.), panic grass (*Panicum* sp.), dogfennel (*Eupatorium capillifolium*), cinnamon fern (*Osmunda cinnamomea*), bluestem (*Andropogon* sp.), and crowngrass (*Paspalum* sp.).

Many of the historic wet flatwoods at GSF have been planted with pine (often slash pine) and managed as pine plantations with varying degrees of disturbance from site preparation. Dense, un-thinned planted pine stands on historic wet flatwoods still exist but are mapped as pine plantations. Stands that have received some thinning and fire, but remain highly disturbed, are mapped as 'restoration' wet flatwoods to indicate that management is moving the community towards a more natural structure. Restoration wet flatwoods are differentiated from areas mapped as wet flatwoods typically because they contain a denser canopy of pines that will likely need to be thinned as they reach maturity, as well as higher numbers of early successional species that established during ground disturbance related to silviculture practices.

Fire Regimes:

Fire return frequency for wet flatwoods is generally recommended every 2-4 years to maintain grassy wet flatwoods and inhibit invasion by shrubs and 5-10 years for shrubby wet flatwoods. This is consistent with management of longleaf pine systems. Common species in this community, like wiregrass, require fire to flower.

Management Needs:

Management goals for wet flatwoods should focus on reintroduction of frequent fire to fire-excluded areas, maintenance of areas that have been frequently burned, and invasive species removal and monitoring. Historic wet flatwoods areas that have not been burned in the past 10 years will benefit from annual or biannual burns. Expansive historic wet flatwood areas that have not been burned in the past 10 years will benefit from mechanical or chemical fuel management planned carefully with the reintroduction of fire. For instance, after a timber sale, fuels are knocked down and the timber canopy is more open, presenting a window to reintroduce fire. Wet flatwoods stands unburned for this amount of time often have an extensive fine root mat and duff layer, requiring mowing or roller chopping for successful prescribed fires. Wet flatwoods that have burned in the past 10 years should be placed on a 3 to 10-year fire-return interval to maintain desirable shrub and herb covers.

Q. 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. This community usually occurs on acidic, nutrient deficient, saturated soils. It is typically dominated by dense wiregrass (*Aristida stricta*) in drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly (*Muhlenbergia expanse*), yellow butterwort (*Pinguicula lutea*), and savannah meadow beauty (*Rhexia alifanus*). In the wetter portions, wiregrass may occur with, or be replaced by species in the sedge family. Also common in wetter areas are carnivorous species such as pitcher plants

(*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.).

Wet prairies are uncommon at GSF and typically occupy the narrow ecotone between swamp and uplands (mostly flatwoods). Wet prairie was included in narrow wet flatwoods transitional areas to swamps where the treeless prairie areas were too small to map.

The signature of wet prairies on the 1940 photography is readily discernable as it appears as a smooth-textured light to medium gray treeless area often as a narrow ecotone between a swamp and flatwoods.

Current Conditions:

Most wet prairie at Goethe is currently encroached by woody species such as slash pine (*Pinus elliottii*) and titi (*Cyrilla racemiflora*), and in some areas planted through with slash pine. There are few examples of herb dominated wet prairie throughout the property. These are open with scattered trees and shrubs. The widely spaced canopy is generally dominated by slash pine (*Pinus elliottii*), although pond cypress (*Taxodium ascendens*) is also present. Fetterbush (*Lyonia lucida*) is an occasional shrub. The herbaceous layer is dominated by Carolina redroot (*Lachnanthes caroliana*) but also contains pale meadowbeauty (*Rhexia mariana*) and blue maidencane (*Amphicarpum muehlenbergianum*).

Fire Regimes:

Natural fires likely entered wet prairie from surrounding pinelands and burned through them when they were dry enough to carry fire. A natural fire-return interval for this area is estimated to be 2 to 3 years with the adjacent flatwoods.

Management Needs:

A regular fire-return interval of 2 to 3 years should be maintained in order to prevent woody shrubs from encroaching on the wet prairie from the bordering uplands which would shade out the herbaceous species indicative of this community. Wet prairies are sensitive to relatively slight physical alterations to the soil surface which can permanently alter the hydrology. Such disturbances include soil rutting caused by trampling, vehicles, plowed fire lanes, other heavy equipment damage, roads and ditches, and hog rooting. These disturbances can cause major changes in species composition that require expensive restoration to repair. Treat shrub encroachment mechanically or chemically to promote herbaceous cover.

R. Xeric Hammock

Description:

Xeric hammocks are closed canopy forests, typically oak-dominated, that occur on well drained soils originating from old dune systems. These communities may form naturally, when the area has significant barriers to fire, but are often considered an advanced successional stage of well-drained upland communities such as sandhill, scrub, and scrubby flatwoods.

The xeric hammock canopy is usually a solid stand of sand live oak (*Quercus geminata*). The tall shrub layer can vary in density and is typically made up of shrubs characteristic of either sandhill or scrub, depending on the origin of the hammock. The understory tends to include saw

palmetto (*Serenoa repens*), as well as other scrubby species. The herbaceous layer is often depauperate but may contain some scattered wiregrass (*Aristida stricta*), beaksedge (*Rhynchospora* spp.), witchgrass (*Dichantheium* spp.) or forbs such as sweet goldenrod (*Solidago odora*). Epiphytes may be common on oaks in xeric hammock and commonly include resurrection fern (*Pleopeltis michauxiana*), Bartram's air-plant (*Tillandsia bartramii*), ballmoss (*Tillandsia recurvata*), and Spanish moss (*Tillandsia usneoides*). Muscadine (*Vitis rotundifolia*) and earleaf greenbrier (*Smilax auriculata*) vines may be common.

On the 1940 aerial photography, xeric hammock appears as a coarse textured dark grey color with smaller areas of lighter grey included. This community is found in fire shadows and narrow ecotones around the large sandhill upland lake system of the Watermelon Pond area. On the 2019 aerials this community has a closed canopy.

Current Conditions:

The canopy layer of the xeric hammock community is often dense, closed and is dominated by sand live oak (*Quercus geminata*), but also includes slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), loblolly pine (*Pinus taeda*), laurel oak (*Quercus hemisphaerica*), swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), and live oak (*Quercus virginiana*). The subcanopy often grades into the canopy and includes southern magnolia (*Magnolia grandiflora*), slash pine, longleaf pine, Chapman's oak (*Quercus chapmanii*), sand live oak (*Quercus geminata*), laurel oak, bluejack oak (*Quercus incana*), turkey oak (*Quercus laevis*), swamp laurel oak, water oak, post oak (*Quercus stellata*), live oak, and cabbage palm (*Sabal palmetto*). The tall shrub layer is frequently dense, fire excluded, and comprised of American holly (*Ilex opaca*), coastalplain staggerbush (*Lyonia fruticosa*), red bay (*Persea borbonia*), Carolina laurelcherry (*Prunus caroliniana*), black cherry (*Prunus serotina*), Chapman's oak, sand live oak, laurel oak, bluejack oak, turkey oak, swamp laurel oak, myrtle oak (*Quercus myrtifolia*), water oak (*Quercus nigra*), live oak, winged sumac (*Rhus copallinum*), cabbage palm, sparkleberry (*Vaccinium arboreum*), and deerberry (*Vaccinium stamineum*). Short shrubs are sparse due to shading from upper strata. Common short shrubs of the xeric hammock community include netted pawpaw (*Asimina reticulata*), American beautyberry (*Callicarpa americana*), Florida rosemary (*Ceratiola ericoides*), common persimmon (*Diospyros virginiana*), gallberry (*Ilex glabra*), southern bayberry (*Morella cerifera*), black cherry, Chapman's oak, runner oak (*Quercus pumila*), sand live oak, laurel oak, turkey oak, swamp laurel oak, myrtle oak, water oak, live oak, winged sumac, cabbage palm, saw palmetto (*Serenoa repens*), sparkleberry, shiny blueberry (*Vaccinium myrsinites*), deerberry, Walter's viburnum (*Viburnum obovatum*), and Florida arrowroot (*Zamia integrifolia*). The herbaceous layer is often depauperate and contains bluestem (*Andropogon* sp.), broomsedge bluestem (*Andropogon virginicus*), wiregrass (*Aristida stricta*), vanillaleaf (*Carphephorus odoratissimus*), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), tread softly (*Cnidoscolus stimulosus*), flatsedge (*Cyperus* sp.), witchgrass (*Dichantheium* sp.), dogfennel (*Eupatorium capillifolium*), Elliott's milkpea (*Galactia elliottii*), downy milkpea (*Galactia volubilis*), switchgrass (*Panicum virgatum*), bahiagrass (*Paspalum notatum*), bracken fern (*Pteridium aquilinum*), blackroot (*Pterocaulon pycnostachyum*), sandyfield beaksedge (*Rhynchospora megalocarpa*), whip nutrush (*Scleria triglomerata*), and sweet goldenrod (*Solidago odora*). Epiphytes commonly include resurrection fern (*Pleopeltis michauxiana*), Bartram's air-plant (*Tillandsia bartramii*), ballmoss (*Tillandsia recurvata*), and Spanish moss (*Tillandsia usneoides*). Yellow jessamine (*Gelsemium sempervirens*),

partridgeberry (*Mitchella repens*), Virginia creeper (*Parthenocissus quinquefolia*), earleaf greenbrier (*Smilax auriculata*), cat greenbrier (*Smilax glauca*), bristly greenbrier (*Smilax tamnoides*), summer grape (*Vitis aestivalis*), and muscadine (*Vitis rotundifolia*) are frequent vine species.

Xeric hammock has increased by 203 acres, relative to historic estimates. This is the direct result of fire exclusion and woody encroachment into historic sandhill and scrubby flatwoods habitats.

Fire Regimes:

Xeric hammock is not a fire-adapted natural community type. It does, however, grade into pyrogenic communities such as sandhill and therefore is subject to light and infrequent ground fires.

Management Needs:

Areas of historic xeric hammock require no active management. Prescribed burns in the adjacent natural communities should naturally extinguish along the hammock edge. Firebreaks isolating this community should be discouraged.

In areas of xeric hammock that have developed more recently as a result of insufficient fire, management activities should focus on restoring the historic community, if this is considered an appropriate goal for the area. Fire should be encouraged to enter the xeric hammock as much as possible, but hardwood removal would likely be necessary. Restoring groundcover species is a critical second step. Groundcover restoration, particularly wiregrass re-introduction, would be needed in all anthropogenic xeric hammocks in order to facilitate effective prescribed fires.

In the previous planning cycle, more than 600 acres of xeric hammock were treated with fuelwood harvest and follow-up growing season fire with good herbaceous response. There are additional treatments planned where feasible in the upcoming planning cycle.

S. Managed Landcover 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 for gopher tortoises 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 GSF is conducted to further ensure compatibility with other management goals and objectives.

1. Pine Plantation

Description:

Pine plantation at Goethe State Forest occupies former wet flatwoods, mesic flatwoods, scrubby flatwoods, upland mixed forest, xeric hammock, and sandhill habitats. Refer to the community description heading for each of these communities individually.

Current Conditions:

Pine plantation is scattered throughout Goethe State Forest. These pine plantations tend to have a canopy and subcanopy dominated by slash pine (*Pinus elliottii*). Occasionally, pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), and sand live oak (*Quercus*

geminata) are scattered in the subcanopy as well. The midstory is made up primarily of young slash pine trees, with other young trees and tall shrubs interspersed. Species commonly found in midstory include: southern bayberry (*Morella cerifera*), gallberry (*Ilex glabra*), common buttonbush (*Cephalanthus occidentalis*), loblolly bay (*Gordonia lasianthus*), groundsel tree (*Baccharis halimifolia*), titi (*Cyrilla racemiflora*), fetterbush (*Lyonia lucida*), swamp bay (*Persea palustris*), laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), sand live oak (*Quercus geminata*), sawtooth blackberry (*Rubus pensilvanicus*), longleaf pine (*Pinus palustris*), winged sumac (*Rhus copallinum*), saw palmetto (*Serenoa repens*), and live oak (*Quercus virginiana*). The shrubby understory is generally made up of saw palmetto, gallberry (*Ilex glabra*), southern bayberry, fetterbush, and coastalplain staggerbush (*Lyonia fruticosa*), but other species like sawtooth blackberry (*Rubus pensilvanicus*), netted pawpaw (*Asimina reticulata*), dwarf live oak (*Quercus minima*), winged sumac, titi (*Cyrilla racemiflora*), water oak (*Quercus nigra*), sand blackberry (*Rubus cuneifolius*), rusty staggerbush (*Lyonia ferruginea*), longleaf pine, myrtle oak (*Quercus myrtifolia*), shiny blueberry (*Vaccinium myrsinites*), pawpaw (*Asimina* sp.), and Florida rosemary (*Ceratiola ericoides*) are often present as well. The herbaceous groundcover of the pine plantations of Goethe State Forest are often weedy, and dominated by bracken fern (*Pteridium aquilinum*), Virginia chain fern (*Woodwardia virginica*), panic grass (*Panicum* sp.), maidencane (*Panicum hemitomon*), crowngrass (*Paspalum* sp.), bluestem (*Andropogon* sp.), pale meadowbeauty (*Rhexia mariana*), and blue maidencane (*Amphicarpum muehlenbergianum*).

Fire Regimes:

Refer to the fire regimes heading for wet flatwoods, mesic flatwoods, scrubby flatwoods, upland mixed forest, xeric hammock, and sandhill habitats individually.

Management Needs:

Prescribed burns are the primary management tool for this community between silvicultural operations. Because these sites were disturbed for a significant length of time, intensive groundcover restoration would be required to return them to a natural state.

During this planning cycle the longleaf pine will be ready to thin. Although most sites have been planted, additional planting may be completed as needed. If the basal area of a given plantation is high enough to warrant a harvest, then thinning may start to open the stand up and allow sunlight to reach the ground and promote the growth of herbaceous ground cover.

Upland invasive plant control is a challenge on GSF, and sound treatment and prevention strategies will be integrated with the fire and silvicultural operations.

2. Improved Pasture

Description:

Dominated by planted non-native or domesticated native forage species and evidence of current or recent pasture activity and/or cultural treatments (mowing, grazing, burning, fertilizing; Agro-Ecology Grazing Issues Working Group 2009). Improved pastures have been cleared of their native vegetation. Most improved pastures in Florida are planted with bahiagrass (*Paspalum notatum*) and to a lesser extent with Bermudagrass (*Cynodon*

dactylon) or pangolagrass (*Digitaria eriantha*). Weedy native species are often common in improved pastures in Florida and include dogfennel (*Eupatorium capillifolium*), many species of flatsedge (*Cyperus* spp.), carpetgrasses (*Axonopus* spp.), crabgrasses (*Digitaria* spp.), and rustweed (*Polypremum procumbens*) among many others.

Current Conditions:

Improved pasture on Goethe State Forest occupies former sandhill and upland mixed woodland habitats, and generally resembles the above description. Refer to the community description heading for each of these communities individually.

Fire Regimes:

Refer to the fire regimes heading for sandhill and upland mixed woodland habitats individually.

Management Needs:

Improved pastures have undergone enormous alteration from the natural state. Intensive groundcover restoration would be needed if the goal is to return these to sandhill or upland mixed woodland. Currently, the improved pastures are not leased and are maintained by mowing and invasive plant control.

T. Other Altered Landcover Types

Desired Future Condition:

Altered landcover types are areas where the natural community has been overwhelmingly altered as a result of human activity. Abandoned field/pasture are old fields, fallow pastures, early successional areas formerly grazed or in agriculture without recent activity to maintain the area as pasture or planted field. These areas are often dominated by weedy native (e.g., *Rubus* sp., *Myrica cerifera*) and non-native species (e.g., *Indigofera hirsuta*). Old pastures are generally designated as abandoned when weedy cover from woody species (*Rubus* sp., *Myrica cerifera*, etc.) is greater than 20 percent. The target future condition of these areas is dependent on the historic community. Please refer to the appropriate community type for a more specific explanation of the DFC.

Description:

Artificial Pond – Water retention ponds, cattle ponds, etc.

Abandoned Field/abandoned pasture – Old fields, fallow pastures, early successional areas formerly grazed or in agriculture without recent activity to maintain the area as pasture or planted field. These areas are often dominated by weedy native (e.g., *Rubus* spp., *Myrica cerifera*) and non-native species (e.g., *Indigofera hirsuta*). In old pastures, generally designated when weedy cover from woody species (*Rubus* spp., *Myrica cerifera*, etc.) is greater than 20 percent.

Borrow Area – Dry or wet depression resulting from past or present mining operation. Phosphate pits and upland borrow pits (sand pits, clay pits, etc.).

Developed – Two small, developed areas are mapped consisting of a utility substation and the Florida Forest Service offices and maintained lawn.

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

Spoil Area – Area where dredge or spoil material is deposited, may be re-colonized by plants.

Successional Hardwood Forest – Successional hardwood forests are closed-canopied forests dominated by fast growing hardwoods such as laurel oak (*Quercus hemisphaerica*), sand live oak (*Quercus geminata*), slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), and loblolly pine (*Pinus taeda*). Sand live oak, laurel oak, swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), cabbage palm (*Sabal palmetto*), and sweetgum (*Liquidambar styraciflua*) make up the subcanopy. The shrubby midstory is made up of younger members of the canopy and subcanopy, as well as winged sumac (*Rhus copalinum*).

Successional Hydric Shrubland - Successional hydric shrublands are fire excluded or disturbed areas that are dominated by fast growing hydrophilic hardwoods such as southern bayberry (*Morella cerifera*) and groundsel tree (*Baccharis halimifolia*). Weedy vines such as smilax (*Smilax* spp.) and muscadine (*Vitis rotundifolia*) are often common in the shrub layers. These shrubland/forests may invade herbaceous habitats (i.e., wet prairie, wet flatwoods, seepage slope, depression marsh, basin marsh, floodplain marsh, and slough marsh) due to lengthy fire-suppression and/or hydrological alterations. Although some shifts in community type may be better described with a natural community designation, the use of “successional hydric shrubland” is suitable to label areas that are known to be highly disturbed and altered, and where restoration efforts of hydrology restoration and/or re-introduction of fire would be particularly beneficial.

At GSF, successional hydric forest/shrubland was mapped in areas of historic wet prairie where pines have been planted and woody vegetation has invaded due to insufficient fire management.

Utility Corridor – Electric, gas, and telephone right-of-ways.

Fire Regimes:

N/A

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. Typically, these areas occupy a small acreage that can be managed as part of the adjacent landscape with prescribed fire or ongoing management. Particular focus in these disturbed areas will be placed on monitoring and removing invasive plant populations.

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IX. Glossary of Abbreviations

ARC.....	Acquisition and Restoration Council
BMP.....	Best Management Practice
CARL	Conservation and Recreation Lands Acquisition Program
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
FISC.....	Florida Invasive Species Council
FNAI.....	Florida Natural Areas Inventory
F.S.....	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
GSF.....	Goethe State Forest
NRCS.....	Natural Resources Conservation Service
OALE	FDACS Office of Agricultural Law Enforcement
OFW	Outstanding Florida Waters
OOF	Operation Outdoor Freedom

OPS.....Other Personal Services Employment
 RCWRed-cockaded woodpecker (*Dryobates borealis*)
 SRWMDSuwannee River Water Management District
 SWFWMD.....Southwest Florida Water Management District
 TIITFBoard of Trustees of the Internal Improvement Trust Fund
 USFS.....United States Forest Service
 USFWS.....United States Fish and Wildlife Service
 WaFC.....Waccasassa Forestry Center
 WEA.....Wildlife and Environmental Area
 WMA.....Wildlife Management Area

GOETHE STATE FOREST
2024 LAND MANAGEMENT PLAN

EXHIBITS

Exhibit A

Ten-Year Management Accomplishment Summary

Goethe State Forest
10-Year Accomplishments

Site Preparation	Chop Single Pass	Acres	1,742
	Chop Double Pass	Acres	10
	Burning	Acres	2,000
	Mowing	Acres	17
	Herbicide	Acres	1,044
	Other	Acres	17

Planting	Slash Bareroot	No.	55,000
		Acres	76
	Longleaf Containerized	No.	2,112,620
		Acres	2,970

Seedling survival checks	Survival Checks	Acres	2,457
	Plots	No.	230

Timber Stand Improvement	Mechanical Treatments	Acres	450
	Herbicide	Acres	2,416
	Mowing	Acres	1,052

Timber Sales	Marking	Acres	5,367
	Cruising	Acres	6,024
	Harvest	Acres	6,850
		Tons	233,843

Timber Inventory	Inventory Update	Acres	58,232
	New Inventory	Acres	2,123
	Plots	No.	3,884

Invasive Control	Cogon Grass	Acres	123.50
	Japanese Climbing Fern	Acres	84.40
	Natal Grass	Acres	52.00
	Camphor Tree	Acres	6.00
	Mimosa	Acres	6.30
	Elephant Ear	Acres	4.00
	Skunk vine	Acres	2.00
	Chinese Tallow	Acres	1.60
	Caesar Weed	Acres	0.60
	Rattle Box	Acres	0.40

	Air Potato	Acres	0.20
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Fire	Wildfire	No.	21
		Acres	521
	Prescribed Burning	No.	225
		Acres	93,018

Recreation	Day Use Estimated Forest Visitors	No.	1,638,519
	Overnight Primitive Camping	No.	10,246
	Annual Entrance Pass	No.	886
	Commercial Vendor Permits	No.	10
	OOF Hunt	No.	1

Roadwork	Roads Constructed	Miles	15
	Roads Graded	Miles	174
	Roads Rebuilt	Miles	83
	Culverts Installed	No.	63
	Low Water Crossing	No.	30
	Other	No.	5

Boundary Maintenance	Maintenance/Marking	Miles	198
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I&E Activities	Programs/Tours	No.	21
	Education/Research	No.	2

Other Activities	Mowing	Acres	2,686
	Fenceline Removed	Miles	6
	Firelines Maintained	Miles	270
	Fire Rehab	Miles	5
	Archaeological Sites Monitored	No.	111
	Hogs Taken	No.	701
	Pile Burns	No.	5
	RCW Inserts	No.	248

Exhibit B

Boundary and Roads Map



The Boundary and Roads Map

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

DISCLAIMER:
This may have been created at the Florida House, Bureau
(FHS) Geographic Information Systems (GIS) unit using data
from various sources. These data were used by FHS as designed for
the system and for the use of the various public agencies. These positions
are not legal determinations of the courts.

The Florida Bureau of Land Management has the right to correct,
update, modify, or otherwise use positions without notification.
The Florida Bureau of Land Management is not responsible for any errors
or omissions in the accuracy or completeness of the data.

Managed Area boundary as courtesy of the Florida Natural Areas Inventory formally United Defense Sites (UDNS) from the US Army Corps of Engineers

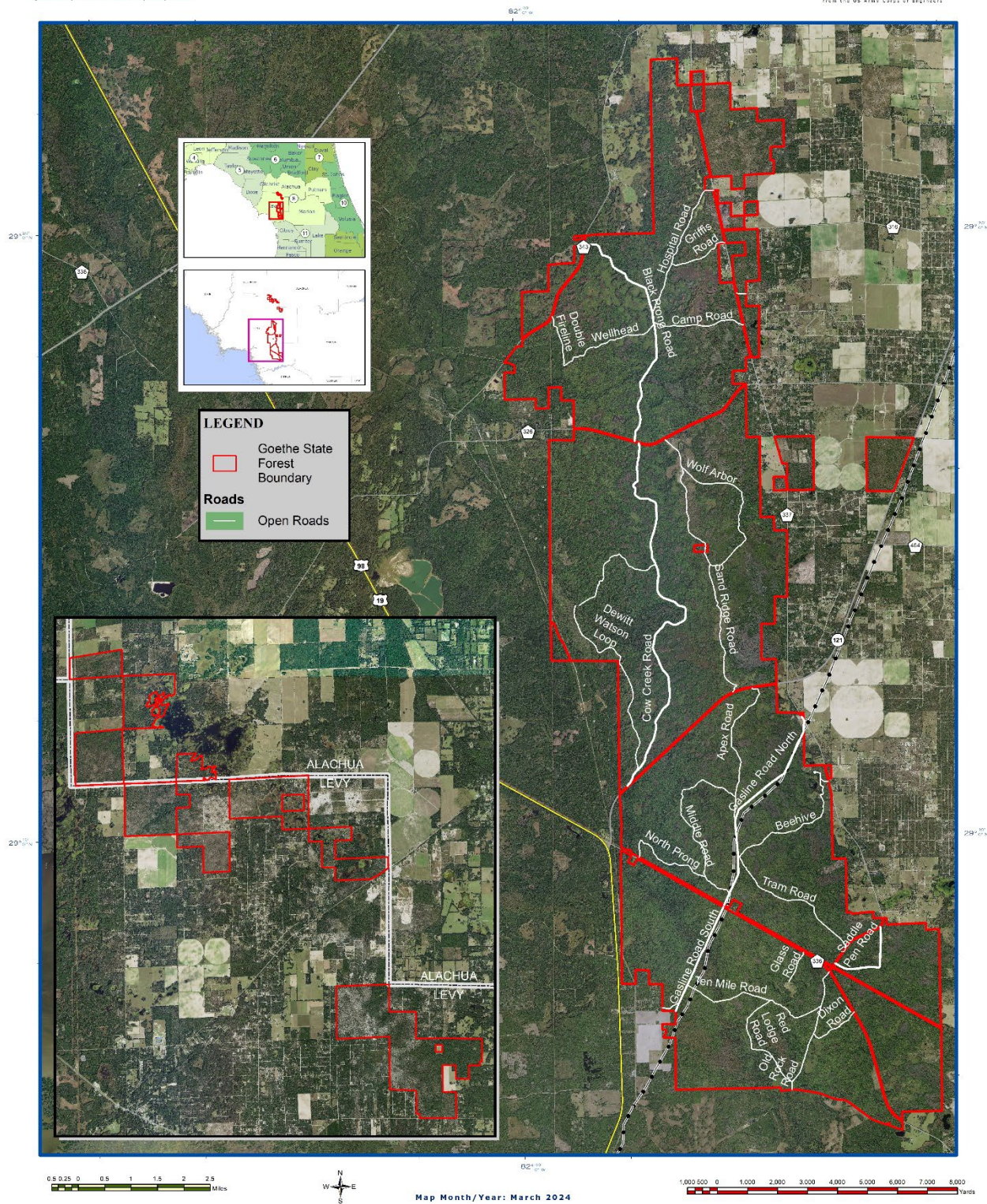


Exhibit C

Optimal Management Boundary Map



Florida Forest Service

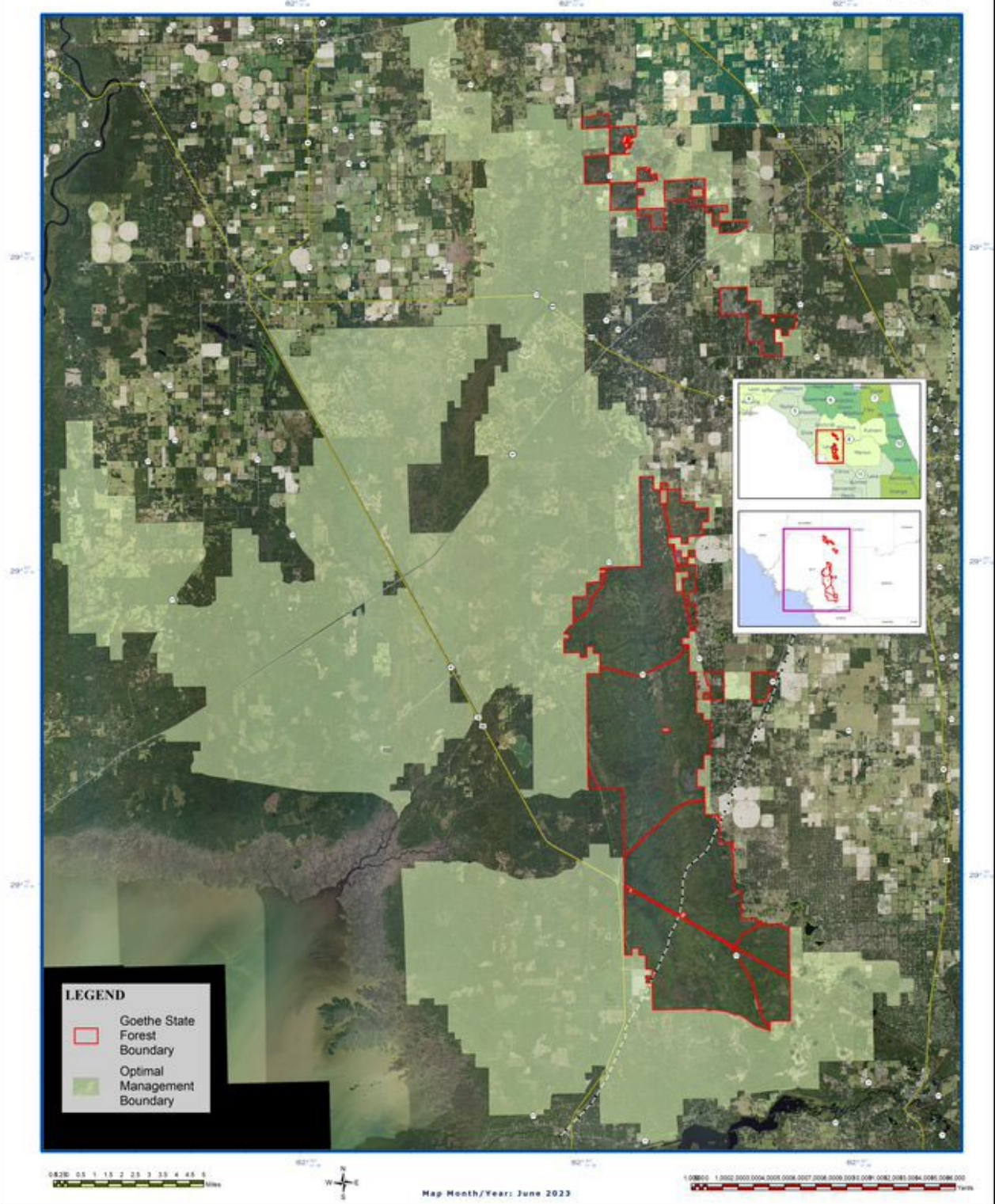
Goethe State Forest

Optimal Management Boundary Map

Coordinate System: Florida State
High Accuracy Reference Network (FARS) Datum

NOTES:
This map was prepared using data from the Florida Department of Transportation (FDOT) and the Florida Forest Service (FFS). The data was collected from the FDOT's Florida State High Accuracy Reference Network (FARS) and the FFS's Florida State Forest Inventory (FSFI). The data was processed using the Florida State High Accuracy Reference Network (FARS) Datum and the Florida State Forest Inventory (FSFI) data. The data was then used to create this map. The data was collected from the FDOT's Florida State High Accuracy Reference Network (FARS) and the FFS's Florida State Forest Inventory (FSFI). The data was processed using the Florida State High Accuracy Reference Network (FARS) Datum and the Florida State Forest Inventory (FSFI) data. The data was then used to create this map.

Manager: Mike Ruppel
Date: 6/1/2023
Scale: 1:50,000
Projection: NAD83
Datum: FARS
Units: Feet
Color: True Color
Format: PDF
Author: Mike Ruppel
Contact: 904.203.1234
Email: mruppel@floridastateforest.com



LEGEND

- Goethe State Forest Boundary
- Optimal Management Boundary

0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 Miles



Map Month/Year: June 2023

1 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 Miles

Exhibit D

Facilities, Recreation, and Improvements Map



Facilities, Recreation and Improvements Map

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

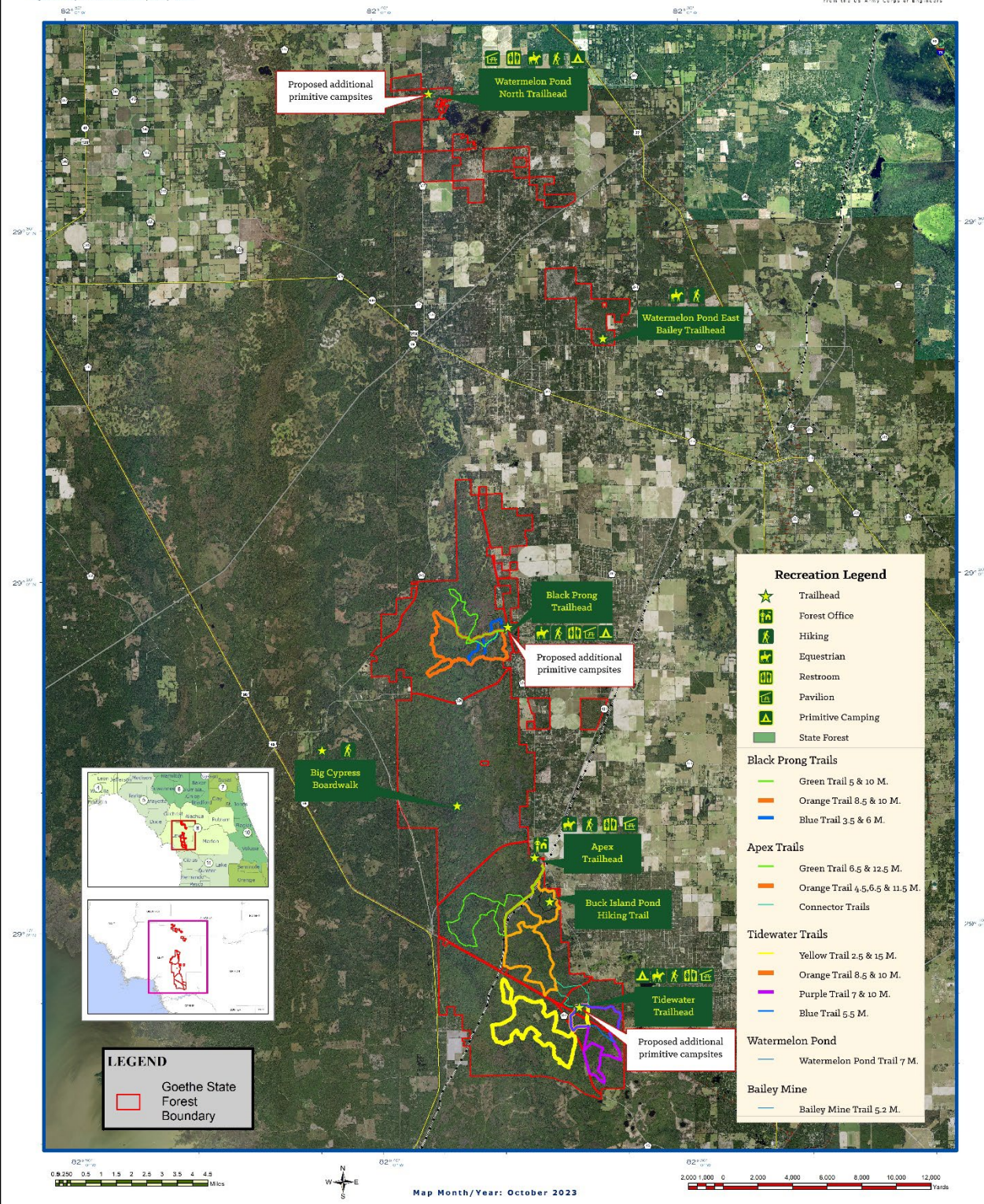
[illegible]

Exhibit E

Tract and Acreage Map



Florida Forest Service

Goethe State Forest Tract & Acreage 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 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 arising from the use of this map. The Florida Forest Service is not responsible for any claims or liabilities arising from the use of this map.

Revised Acreage boundaries courtesy of
the U.S. Fish and Wildlife Service (USFWS)
from the US Army Corps of Engineers

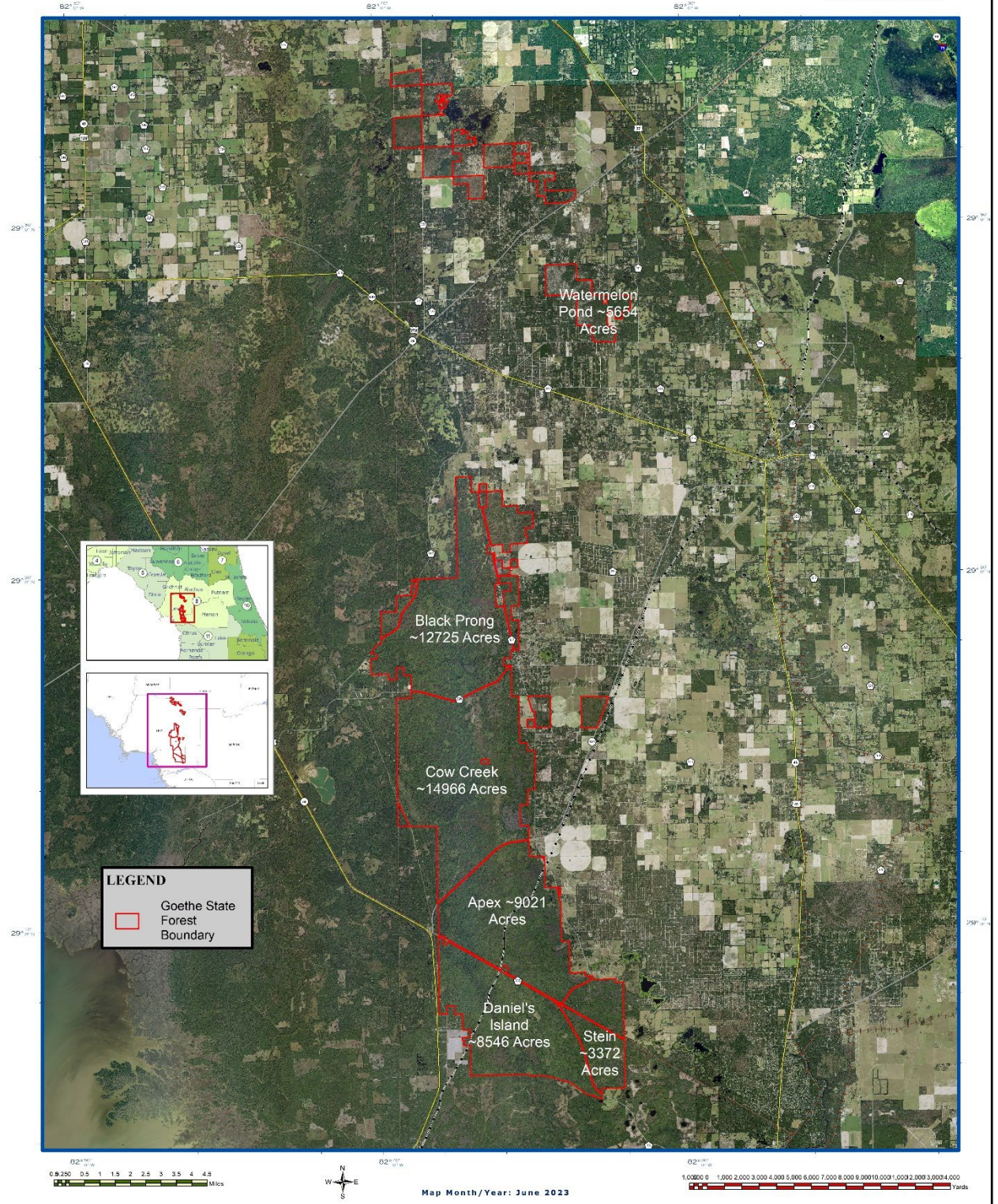


Exhibit F

Proximity
to
Significant Managed Lands



Florida Forest Service

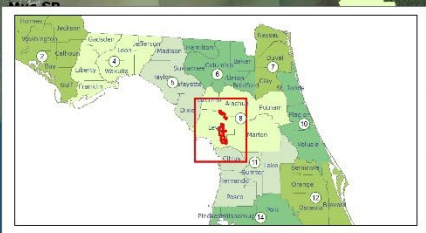
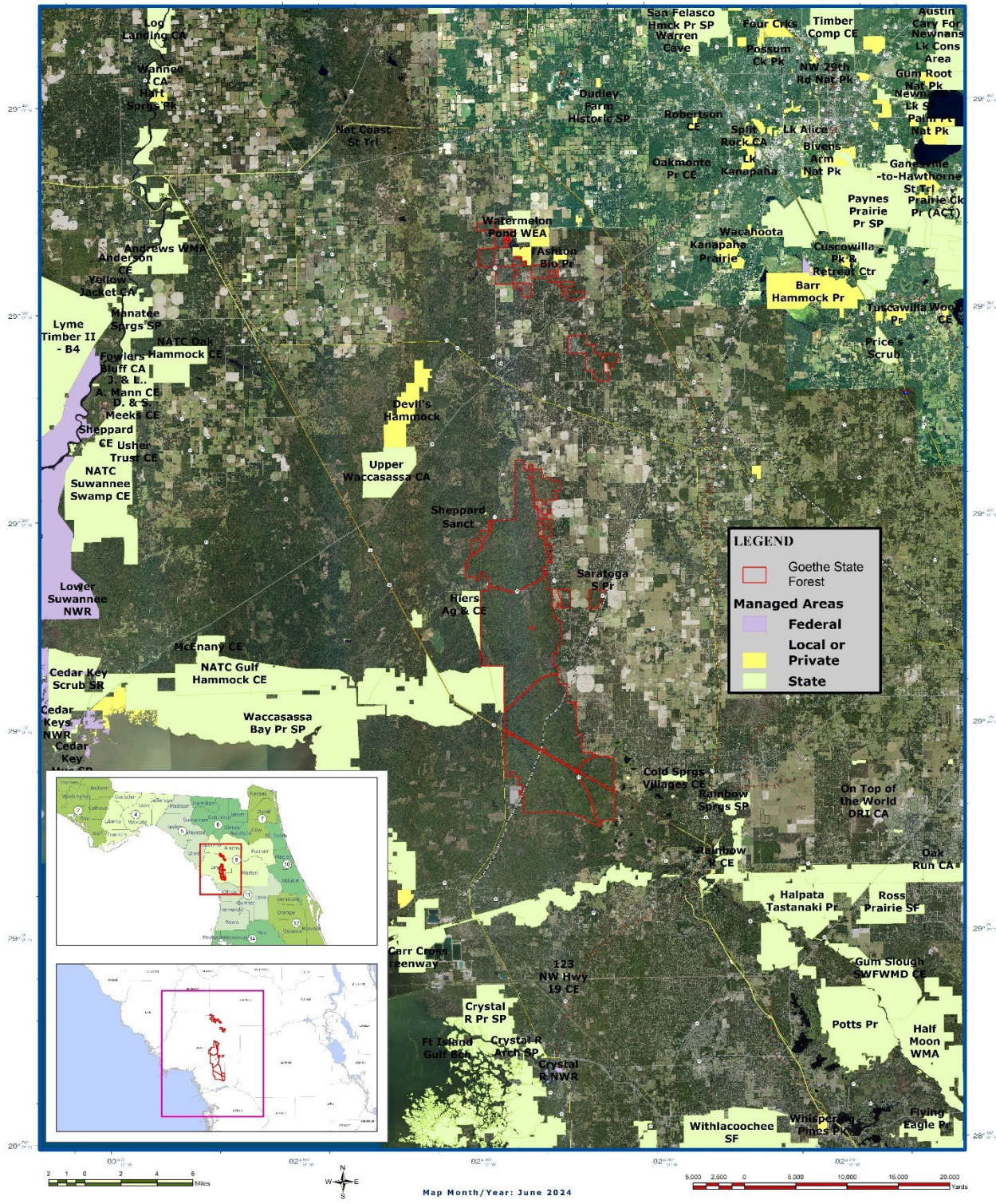
Goethe State Forest

Proximity to Significant Managed Lands Map

Coordinate System: Florida Albers
High Accuracy Reference Network (HARN) Datum
83° 10' 00" W 29° 10' 00" N

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 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 liabilities arising from the use of this map. The Florida Forest Service is not responsible for any claims or lawsuits arising from the use of this map. The Florida Forest Service is not responsible for any claims or lawsuits arising from the use of this map.

Revised Area: 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 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 liabilities arising from the use of this map. The Florida Forest Service is not responsible for any claims or lawsuits arising from the use of this map.



Map Month/Year: June 2024

Exhibit G

Department of State Report on Archaeological Sites and Cultural 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 15, 2023

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

In response to your request on June 15, 2023, the Florida Master Site File lists 105 archeological sites, five resource groups and a historic cemetery recorded for the Goethe 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

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
AL04854	AR	WAKELAND	NA			
AL04920	RG	Watermelon Tram				
AL04921	AR	PJ I	NA	Linear Resource	Insufficient Info	
AL04922	AR	PJ II	NA			
AL04923	AR	PJ South	NA			
AL04924	AR	PJ Southeast	NA			
AL04925	AR	Fox Squirrel Hollow	NA			
AL04926	AR	Pop Top Gap	NA			
AL04927	AR	Flakeout	NA			
AL04929	AR	Edge Hammock	NA			
AL04930	AR	Watermelon Point	NA			
AL04931	AR	Nearside	NA			
AL04932	AR	Farside	NA			
AL04941	AR	Fire Ring	NA			
AL05832	AR	Sad Iron				
LV00245	AR	NORTH PRONG	LEBANON STATION GV			
LV00246	AR	LEBANON LOOKOUT TOWER	LEBANON STATION GV			
LV00247	AR	SAPLING BRANCH				
LV00248	AR	ATLANTIC RAILROAD SECTION HOUSES				
LV00249	AR	LITTLE SAPLING BRANCH				
LV00250	AR	SAND SLOUGH BURIAL MOUND		Human Remains May Be Present		
LV00251	AR	BOTTLE DUMP				
LV00253	AR	TIDEWATER	Nonr			
LV00254	AR	SAND SLOUGH 1	TIDEWATER GV			
LV00255	AR	SAND SLOUGH 2				
LV00256	AR	BENCH MARK 67	TIDEWATER GV			
LV00257	AR	LITTLE POND	TIDEWATER GV			
LV00258	AR	PIPELINE				
LV00259	AR	GOETHE				
LV00261	AR	LANIER				
LV00262	AR	SAND SLOUGH 3				
LV00423	AR	DOCTOR THUNDER				
LV00424	AR	GOETHE ROAD BRICK PILE				
LV00425	AR	DOYLE'S TURPENTINE STILL				
LV00429	AR	WOLF ARBOR 3				
LV00430	AR	WOLF ARBOR 4				
LV00431	AR	BLACK PRONG 1				
LV00433	AR	BLACK PRONG 3				
LV00507	AR	GOETHE YOUTH CENTER			Not Eligible	
LV00523	AR	HOG POND				
LV00525	AR	GATOR NEST				
LV00526	AR	BUCK ISLAND CANOE LAUNCH				
LV00530	AR	HOG POND BLOCK	BRONSON			
LV00547	AR	APEX OFFICE	None			

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
LV00549	AR	BEE TREE FORD				
LV00550	AR	HORSE HOLE CREEK				
LV00551	CM	ABE MIDDLETON GRAVE	Inglis	Graves = 3		
LV00552	AR	BLACK PRONG				
LV00553	AR	HOSPITAL ROAD CAMP 8				
LV00554	AR	BLACK PRONG TRAIL				
LV00555	AR	WATSON'S BRICK PILE				
LV00556	AR	ROBIN'S WISHING WELL				
LV00557	AR	STEEN	None			
LV00558	AR	RCW CLUSTER 44				
LV00559	AR	COW CREEK #1				
LV00560	AR	SAND SPUR RIDGE				
LV00561	AR	SAND RIDGE BURNOUT				
LV00562	AR	SAND RIDGE #1				
LV00563	AR	SAND RIDGE ROAD #2				
LV00564	AR	HILLTOP HAMMOCK				
LV00565	AR	HERTY SHERDS				
LV00566	AR	SAND RIDGE ROAD #3				
LV00567	AR	EIGHT TRAILER HILL				
LV00568	AR	GEORGE				
LV00569	AR	TORT SCAT				
LV00570	AR	BIG FLOW				
LV00571	AR	RACE POND SOUTH				
LV00572	AR	RACE POND NORTH				
LV00573	AR	DEBITAGE				
LV00574	AR	TOP OF THE ARBOR				
LV00575	RG	WATERMELON OUTCROP	BETWEEN BRONSON AND ARCHER	Archaeological District - 5 Contrib Resources		
LV00576	AR	NO NAME POND	NA			
LV00577	AR	HILLTOP	NA			
LV00578	AR	Double Bridge I				
LV00579	AR	Double Bridge II				
LV00580	AR	Deer Sent Ridge				
LV00581	AR	Old Camp Hammock				
LV00582	AR	Site X				
LV00583	AR	Griffs Road I				
LV00584	AR	WAG I				
LV00585	AR	WAG II				
LV00586	AR	WAG III				
LV00587	AR	WAG IV				
LV00588	AR	Borrow Top				
LV00589	AR	Griffs Road II				
LV00590	AR	Saddle Pen Hill				
LV00591	AR	Hound Howler Hill				
LV00592	AR	Eyes of Blue				
LV00593	AR	Lthic University				
LV00594	AR	Arm Rest Hammock				
LV00595	AR	Ain't No Reason				
LV00596	AR	Herman's Ford				
LV00597	AR	Old Trail Hill				
LV00598	AR	Bobby's Luncheon Hammock				

siteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
LV00599	AR	Lewis Homestead				
LV00605	AR	Blown Fuse	NA			
LV00606	AR	Hilltop TA	NA			
LV00607	AR	Tiny TA	NA			
LV00608	AR	Old Dock	NA			
LV00609	AR	Section 17 Mine	NA			
LV00610	AR	Mine-house ruins I	NA			
LV00611	AR	Mine-house ruins II	NA			
LV00612	RG	Watermelon Tram		Linear Resource	Insufficient Info	
LV00613	AR	Section 18 Mine	NA			
LV00614	RG	Bailey's Mine Tram	NA	Linear Resource		
LV00615	AR	Section 7 Mine	NA			
LV00616	AR	Section 8 Mine and Tram	NA			
LV00617	AR	Bailey's Mine	NA			
LV00637	RG	ACL's Perry Cutoff Resource Group	Lebanon Station	Linear Resource -- 1 Contrib Resources	Not Eligible	
LV00768	AR	8LV768	Unspecified		Not Eligible	
LV00769	AR	8LV769	Unspecified		Not Eligible	

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

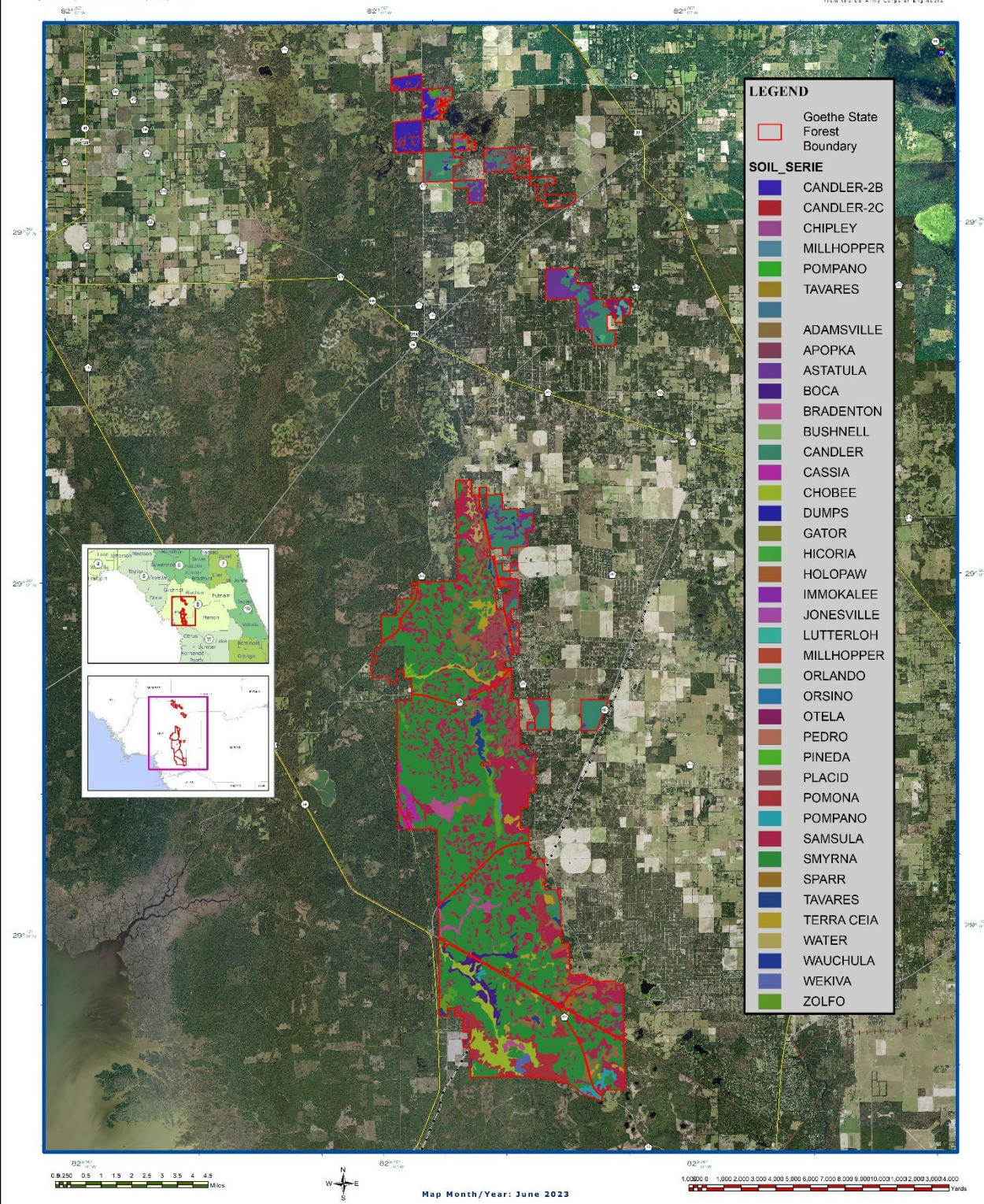
Soil Survey Map and Descriptions



Soils Map

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

DISCUSSION:
This is a new concept for the Florida Forest Service. The Florida Department of Natural Resources (DNR) is now taking into account biological resources. NRE has been at the forefront of the effort and has been successful in getting the Florida Department of Natural Resources to take the lead in the effort. The Florida Forest Service is now the primary agency for the Florida Department of Natural Resources. The Florida Forest Service is now the primary agency for the Florida Department of Natural Resources. The Florida Forest Service is now the primary agency for the Florida Department of Natural Resources.



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)

Alachua County, Florida

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

Component: Candler (85%)

The Candler component makes up 85 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 marine deposits and/or sandy eolian 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 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 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: Astatula (4%)

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

Component: Apopka (3%)

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

Component: Adamsville (3%)

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

Component: Tavares (2%)

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

Component: Arredondo (2%)

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

Component: Millhopper (1%)

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

Map Unit: 8—Millhopper sand, 0 to 5 percent slopes

Component: Millhopper (85%)

The Millhopper component makes up 85 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 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 57 inches during June, July, August, September. 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: Candler (5%)

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

Component: Tavares (4%)

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

Component: Arredondo (3%)

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

Component: Gainesville (1%)

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

Component: Sumterville, bouldery subsurface (1%)

Generated brief soil descriptions are created for major soil components. The Sumterville, bouldery subsurface soil is a minor component.

Component: Kanapaha (1%)

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

Map Unit: 15—Pompano sand

Component: Pompano (85%)

The Pompano component makes up 85 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 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 3 inches during 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: Myakka, non-hydric (4%)

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

Component: Chipley (4%)

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

Component: Placid (4%)

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

Component: Plummer, non-hydric (3%)

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

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

Component: Tavares (85%)

The Tavares component makes up 85 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 57 inches during June, July, August, September, October, November, December. 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 0 within 30 inches of the soil surface.

Component: Apopka (6%)

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

Component: Candler (4%)

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

Component: Adamsville (3%)

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

Component: Zolfo (2%)

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

Map Unit: 28—Chipley sand

Component: Chipley (85%)

The Chipley component makes up 85 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 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 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: Pompano (4%)

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

Component: Myakka, non-hydric (4%)

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

Component: Tavares (4%)

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

Component: Zolfo (3%)

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

Map Unit: 68—Candler fine sand, 5 to 8 percent slopes

Component: Candler (90%)

The Candler component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian and 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 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 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tavares (5%)

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

Component: Apopka (3%)

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

Component: Placid (2%)

Generated brief soil descriptions are created for major soil components. The Placid 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.

Levy County, Florida

Map Unit: 2—Tavares fine sand, 1 to 5 percent slopes

Component: Tavares (85%)

The Tavares component makes up 85 percent of the map unit. Slopes are 1 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 57 inches during 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: Placid, depressional (4%)

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

Component: Millhopper (4%)

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

Component: Apopka (4%)

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

Component: Sparr (3%)

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

Map Unit: 3—Orsino fine sand, 0 to 8 percent slopes

Component: Orsino (88%)

The Orsino component makes up 88 percent of the map unit. Slopes are 0 to 8 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 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 54 inches during 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: Placid, depressional (2%)

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

Component: Myakka (2%)

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

Component: Otela (2%)

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

Component: Immokalee (2%)

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

Component: Popash (1%)

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

Component: Pompano (1%)

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

Component: Samsula (1%)

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

Component: Sparr (1%)

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

Map Unit: 4—Millhopper fine sand, 1 to 5 percent slopes

Component: Millhopper (85%)

The Millhopper component makes up 85 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises 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 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 57 inches during June, July, August, September. 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: Popash (2%)

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

Component: Placid, depressional (2%)

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

Component: Astatula (2%)

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

Component: Adamsville (2%)

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

Component: Orlando (2%)

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

Component: Lochloosa (2%)

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

Component: Candler (2%)

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

Component: Tavares (1%)

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

Map Unit: 5—Immokalee fine sand

Component: Immokalee (91%)

The Immokalee 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 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 June, July, August, September. 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: Pomello (1%)

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

Component: Janney (1%)

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

Component: Pineda (1%)

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

Component: Cassia (1%)

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

Component: Adamsville (1%)

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

Component: Zolfo (1%)

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

Component: Hicoria, depressional (1%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Map Unit: 6—Candler fine sand, 1 to 5 percent slopes

Component: Candler (85%)

The Candler component makes up 85 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits and/or sandy and loamy 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 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: Apopka (3%)

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

Component: Millhopper (3%)

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

Component: Adamsville (3%)

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

Component: Placid, depressional (2%)

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

Component: Sparr (2%)

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

Component: Popash (2%)

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

Map Unit: 7—Candler-Apopka complex, 1 to 5 percent slopes

Component: Candler (70%)

The Candler component makes up 70 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits and/or sandy and loamy 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 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: Apopka (23%)

The Apopka component makes up 23 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits and/or sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is 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. 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 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: Adamsville (2%)

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

Component: Lochloosa (1%)

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

Component: Sparr (1%)

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

Component: Bonneau (1%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Map Unit: 8—Smyrna fine sand, 0 to 2 percent slopes

Component: Smyrna (87%)

The Smyrna component makes up 87 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces, 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 June, July, August, September. 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: Adamsville (6%)

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

Component: Cypress Lake (4%)

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

Component: Cassia (3%)

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

Map Unit: 9—Pomona fine sand

Component: Pomona (89%)

The Pomona component makes up 89 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 June, July, August, September. 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: Bradenton (1%)

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

Component: Sparr (1%)

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

Component: Boca (1%)

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

Component: Wauchula (1%)

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

Component: Pineda (1%)

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

Component: Ft. Green (1%)

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

Component: Bivans (1%)

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

Component: Adamsville (1%)

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

Component: Popash (1%)

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

Component: Placid, depressional (1%)

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

Component: Hickoria, depressional (1%)

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

Map Unit: 10—Placid fine sand

Component: Placid (90%)

The Placid component makes up 90 percent of the map unit. Slopes are 0 to 1 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 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 July, August, September. 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: Popash (2%)

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

Component: Samsula (2%)

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

Component: Adamsville (2%)

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

Component: Zolfo (2%)

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

Component: Pineda (2%)

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

Map Unit: 11—Placid and Samsula soils, depressional

Component: Placid (50%)

The Placid component makes up 50 percent of the map unit. Slopes are 0 to 1 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 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 3 inches (depth from the mineral surface is 0 inches) during June, July, August, September, October, November. Organic matter content in the surface horizon is about 60 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: Samsula (38%)

The Samsula component makes up 38 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 60 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: Chobee (2%)

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

Component: Pomona (2%)

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

Component: Pineda (2%)

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

Component: Holopaw (2%)

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

Component: Myakka (2%)

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

Component: Pompano (1%)

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

Component: Smyrna (1%)

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

Map Unit: 12—Otela-Candler complex, 1 to 5 percent slopes

Component: Otela (59%)

The Otela component makes up 59 percent of the map unit. Slopes are 1 to 5 percent. This component is on karstic marine terraces, 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 moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 50 inches during June, July, August, September. 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: Candler (35%)

The Candler component makes up 35 percent of the map unit. Slopes are 1 to 5 percent. This component is on karstic marine terraces, coastal plains. The parent material consists of sandy marine deposits marine deposits derived from limestone. 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 moderate. 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 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: Adamsville (3%)

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

Component: Bonneau (3%)

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

Map Unit: 13—Wekiva fine sand, 0 to 2 percent slopes

Component: Wekiva (88%)

The Wekiva component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, coastal plains. The parent material consists of thin layers of sandy and loamy fluviomarine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 12 to 25 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 very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 4 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 4 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: Holopaw (6%)

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

Component: Pineda (4%)

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

Component: Matmon (2%)

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

Map Unit: 14—Shadeville-Otela complex, 1 to 5 percent slopes

Component: Shadeville (50%)

The Shadeville component makes up 50 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 72 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 moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. 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: Otela (31%)

The Otela component makes up 31 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises on karstic 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 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 57 inches during June, July, August, September. 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: Levyville (3%)

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

Component: Micanopy (3%)

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

Component: Bushnell (3%)

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

Component: Mabel (3%)

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

Component: Adamsville (3%)

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

Component: Pedro (2%)

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

Component: Seaboard (2%)

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

Map Unit: 16—Chobee-Gator complex, frequently flooded

Component: Chobee (45%)

The Chobee component makes up 45 percent of the map unit. Slopes are 0 to 1
percent. This component is on flood plains on marine terraces on coastal plains.
The parent material consists of loamy alluvium. 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 frequently flooded. It is not ponded. A seasonal zone of water
saturation is at 0 inches during June, July, August, September, October,
November. Organic matter content in the surface horizon is about 68 percent.
Nonirrigated land capability classification is 5w. 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: Gator (43%)

The Gator component makes up 43 percent of the map unit. Slopes are 0 to 1
percent. This component is on flood plains on marine terraces, coastal plains.
The parent material consists of herbaceous organic material over loamy and
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 frequently
flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches
during June, July, August, September, October, November. Organic matter
content in the surface horizon is about 68 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: Myakka, occasionally flooded (2%)

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

Component: Holopaw, frequently flooded (2%)

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

Component: Bradenton (2%)

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

Component: Hickoria, depressional (2%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Component: Pompano (1%)

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

Component: Pineda, frequently flooded (1%)

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

Map Unit: 17—Adamsville fine sand, 0 to 5 percent slopes

Component: Adamsville (85%)

The Adamsville component makes up 85 percent of the map unit. Slopes are 0 to 5 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 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 33 inches during June, July, August, September, October, November. 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: Hicoria, depressional (2%)

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

Component: Millhopper (2%)

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

Component: Immokalee (2%)

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

Component: Popash (1%)

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

Component: Placid, depressional (1%)

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

Component: Orsino (1%)

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

Component: Wauchula (1%)

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

Component: Pomona (1%)

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

Component: Tavares (1%)

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

Component: Myakka (1%)

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

Component: Pompano (1%)

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

Component: Smyrna (1%)

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

Map Unit: 18—Wauchula fine sand

Component: Wauchula (85%)

The Wauchula component makes up 85 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 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. 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: Adamsville (2%)

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

Component: Boca (1%)

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

Component: Pompano (1%)

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

Component: Immokalee (1%)

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

Component: Smyrna (1%)

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

Component: Cassia (1%)

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

Component: Myakka (1%)

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

Component: Zolfo (1%)

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

Component: Janney (1%)

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

Component: Hickoria, depressional (1%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Component: Sparr (1%)

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

Component: Pomello (1%)

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

Map Unit: 19—Sparr fine sand

Component: Sparr (85%)

The Sparr component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises 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 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 23 inches during 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: Hicoria, depressional (2%)

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

Component: Immokalee (2%)

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

Component: Lochloosa (2%)

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

Component: Holopaw (2%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Component: Tavares (1%)

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

Component: Orsino (1%)

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

Component: Millhopper (1%)

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

Component: Myakka (1%)

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

Component: Pompano (1%)

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

Map Unit: 21—Pompano fine sand

Component: Pompano (85%)

The Pompano component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains, 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 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 3 inches during 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: Popash (2%)

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

Component: Placid, depressional (2%)

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

Component: Pineda (2%)

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

Component: Sparr (2%)

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

Component: Wauchula (2%)

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

Component: Boca (2%)

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

Component: Adamsville (2%)

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

Component: Zolfo (1%)

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

Map Unit: 22—Holopaw fine sand

Component: Holopaw (85%)

The Holopaw component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on marine terraces on coastal plains, flats on coastal plains, drainageways 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 3 inches during July, August, September. 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: Adamsville (2%)

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

Component: Ft. Green (2%)

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

Component: Bivans (2%)

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

Component: Hicoria (2%)

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

Component: Popash (1%)

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

Component: Placid, depressional (1%)

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

Component: Wauchula (1%)

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

Component: Pineda (1%)

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

Component: Lutterloh (1%)

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

Component: Lochloosa (1%)

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

Component: Sparr (1%)

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

Map Unit: 23—Zolfo sand

Component: Zolfo (85%)

The Zolfo component makes up 85 percent of the map unit. Slopes are 0 to 2 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 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 33 inches during June, July, August, September, October, November. 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: Pomona (2%)

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

Component: Immokalee (2%)

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

Component: Placid, depressional (2%)

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

Component: Myakka (2%)

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

Component: Orsino (2%)

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

Component: Holopaw (2%)

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

Component: Pompano (1%)

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

Component: Popash (1%)

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

Component: Smyrna (1%)

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

Map Unit: 24—Terra Ceia muck, depressional

Component: Terra Ceia, depressional (81%)

The Terra Ceia, depressional component makes up 81 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material. 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 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 June, July, August, September, October, November. 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: Hicoria, depressional (3%)

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

Component: Holopaw (3%)

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

Component: Chobee (3%)

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

Component: Placid, depressional (2%)

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

Component: Popash (2%)

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

Component: Pompano (2%)

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

Component: Myakka (2%)

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

Component: Immokalee (2%)

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

Map Unit: 25—Pits and Dumps

Component: Pits (50%)

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

Component: Dumps (35%)

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

Component: Aquents (15%)

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

Map Unit: 26—Gator and Terra Ceia soils, frequently flooded

Component: Gator, frequently flooded (50%)

The Gator, frequently flooded component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces, coastal plains. The parent material consists of herbaceous organic material over loamy and 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 frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 68 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: Terra Ceia (30%)

The Terra Ceia component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material. 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 very 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 June, July, August, September, October, November. Organic matter content in the surface horizon is about 80 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: Bradenton (3%)

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

Component: Chobee (3%)

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

Component: Pineda, frequently flooded (3%)

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

Component: Holopaw, frequently flooded (3%)

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

Component: Hickory (3%)

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

Component: Placid, depressional (3%)

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

Component: Popash (2%)

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

Map Unit: 27—Placid and Popash soils, depressional

Component: Placid, depressional (50%)

The Placid, depressional component makes up 50 percent of the map unit. Slopes are 0 to 1 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 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 June, July, August, September, October, November. 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: Popash (40%)

The Popash component makes up 40 percent of the map unit. Slopes are 0 to 1 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 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 June, July, August, September, October, November. Organic matter content in the surface horizon is about 9 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: Holopaw (2%)

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

Component: Gator, frequently flooded (2%)

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

Component: Pomona (1%)

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

Component: Immokalee (1%)

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

Component: Terra Ceia (1%)

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

Component: Myakka (1%)

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

Component: Samsula (1%)

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

Component: Pompano (1%)

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

Map Unit: 29—Chobee-Bradenton complex, frequently flooded

Component: Chobee (53%)

The Chobee component makes up 53 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. 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 moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 5w. 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: Bradenton (38%)

The Bradenton component makes up 38 percent of the map unit. Slopes are 0 to 1 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 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 frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 5w. 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: Gator, frequently flooded (1%)

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

Component: Samsula (1%)

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

Component: Hickoria, depressional (1%)

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

Component: Holopaw, frequently flooded (1%)

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

Component: Waccasassa (1%)

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

Component: Albany (1%)

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

Component: Wekiva (1%)

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

Component: Myakka, occasionally flooded (1%)

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

Component: Boca (1%)

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

Map Unit: 31—Jonesville-Otela-Seaboard complex, 1 to 5 percent slopes

Component: Jonesville (48%)

The Jonesville component makes up 48 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 inches. The natural drainage class is well 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. There is no zone of water saturation within a depth of 72 inches. 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: Otela (25%)

The Otela component makes up 25 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer, bedrock, lithic, is 60 to 80 inches. The natural drainage class is moderately well 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 57 inches during June, July, August, September. 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: Seaboard (16%)

The Seaboard component makes up 16 percent of the map unit. Slopes are 1 to 3 percent. This component is on flats on karstic marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer, bedrock, lithic, is 4 to 20 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 June, July, August, September. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Candler (2%)

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

Component: Levyville (2%)

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

Component: Bushnell (2%)

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

Component: Lutterloh, limestone substratum (1%)

Generated brief soil descriptions are created for major soil components. The Lutterloh, limestone substratum soil is a minor component.

Component: Mabel (1%)

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

Component: Rock outcrop (1%)

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

Component: Tavares (1%)

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

Component: Moriah (1%)

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

Map Unit: 32—Otela-Tavares complex, 1 to 5 percent slopes

Component: Otela (50%)

The Otela component makes up 50 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises on karstic 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 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 57 inches during June, July, August, September. 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: Tavares (39%)

The Tavares component makes up 39 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on karstic 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 60 inches during 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: Pedro (1%)

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

Component: Mabel (1%)

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

Component: Bushnell (1%)

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

Component: Bonneau (1%)

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

Component: Lutterloh, limestone substratum (1%)

Generated brief soil descriptions are created for major soil components. The Lutterloh, limestone substratum soil is a minor component.

Component: Hague (1%)

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

Component: Moriah (1%)

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

Component: Shadeville (1%)

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

Component: Jonesville (1%)

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

Component: Levyville (1%)

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

Component: Seaboard (1%)

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

Map Unit: 34—Cassia-Pomello complex

Component: Cassia (55%)

The Cassia component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on marine terraces on coastal plains, rises 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 23 inches during July, August, September, October. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pomello (35%)

The Pomello component makes up 35 percent of the map unit. Slopes are 0 to 2 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 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 23 inches during July, August, September, October, November. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (2%)

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

Component: Orsino (2%)

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

Component: Immokalee (2%)

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

Component: Placid, depressional (1%)

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

Component: Pompano (1%)

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

Component: Tavares (1%)

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

Component: Smyrna (1%)

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

Map Unit: 35—Pineda fine sand, limestone substratum

Component: Pineda, limestone substratum (85%)

The Pineda, limestone substratum component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 80 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 3 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 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: Bradenton (3%)

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

Component: Gator, frequently flooded (2%)

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

Component: Wekiva (2%)

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

Component: Chobee, limestone substratum, freq. flooded (2%)

Generated brief soil descriptions are created for major soil components. The Chobee, limestone substratum, freq. flooded soil is a minor component.

Component: Hicoria, depressional (2%)

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

Component: Pompano (2%)

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

Component: Popash (2%)

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

Map Unit: 40—Pineda fine sand

Component: Pineda (85%)

The Pineda component makes up 85 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 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 3 inches during 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: Chobee (3%)

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

Component: Placid, depressional (2%)

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

Component: Hickory, depressional (2%)

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

Component: Pompano (2%)

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

Component: Popash (2%)

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

Component: Smyrna (2%)

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

Component: Myakka (2%)

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

Map Unit: 46—Chobee muck, limestone substratum, frequently flooded

Component: Chobee, limestone substratum, freq. flooded (85%)

The Chobee, limestone substratum, freq. flooded component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer, bedrock, lithic, is 40 to 79 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 high. Shrink-swell potential is moderate. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 68 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: Hickory (2%)

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

Component: Gator, frequently flooded (2%)

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

Component: Demory (2%)

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

Component: Bradenton (2%)

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

Component: Boca (2%)

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

Component: Popash (1%)

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

Component: Placid, depressional (1%)

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

Component: Pineda, frequently flooded (1%)

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

Component: Waccasassa (1%)

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

Component: Wekiva (1%)

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

Map Unit: 48—Lutterloh-Moriah complex, 0 to 5 percent slopes

Component: Lutterloh (53%)

The Lutterloh component makes up 53 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic 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 24 inches during 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: Moriah (37%)

The Moriah component makes up 37 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy, loamy, and clayey marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 72 inches. The natural drainage class is somewhat 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 23 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 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: Bushnell (2%)

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

Component: Jonesville (1%)

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

Component: Holopaw (1%)

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

Component: Seaboard (1%)

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

Component: Levyville (1%)

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

Component: Mabel (1%)

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

Component: Micanopy (1%)

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

Component: Pedro (1%)

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

Component: Hickoria (1%)

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

Map Unit: 50—Hickoria fine sandy loam, depressional

Component: Hickoria, depressional (90%)

The Hickory, 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 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 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 June, July, August, September, October, November. 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: Placid, depressional (5%)

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

Component: Chobee (5%)

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

Map Unit: 55—Pedro-Jonesville-Shadeville complex, 0 to 5 percent slopes

Component: Pedro (60%)

The Pedro component makes up 60 percent of the map unit. Slopes are 1 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 6 to 20 inches. The natural drainage class is 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. There is no zone of water saturation within a depth of 72 inches. 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: Jonesville (18%)

The Jonesville component makes up 18 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 inches. The natural drainage class is well 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. There is no zone of water saturation within a depth of 72 inches. 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: Shadeville (16%)

The Shadeville component makes up 16 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 72 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 60 inches during July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. 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: Hicoria, depressional (1%)

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

Component: Rock outcrop (1%)

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

Component: Otela (1%)

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

Component: Tavares (1%)

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

Component: Lutterloh, limestone substratum (1%)

Generated brief soil descriptions are created for major soil components. The Lutterloh, limestone substratum soil is a minor component.

Component: Candler (1%)

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

Map Unit: 56—Moriah-Bushnell-Mabel, limestone substratum, complex, 0 to 5 percent slopes

Component: Moriah (34%)

The Moriah component makes up 34 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy, loamy, and clayey marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 72 inches. The natural drainage class is somewhat 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 23 inches during 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: Bushnell (29%)

The Bushnell component makes up 29 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and clayey marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is somewhat 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 high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during July, August, September. 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: Mabel (23%)

The Mabel component makes up 23 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy, loamy, and clayey marine deposits over limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 72 inches. The natural drainage class is somewhat 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 high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during July, August, September. 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.

Component: Tavares (2%)

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

Component: Otela (2%)

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

Component: Adamsville (2%)

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

Component: Ft. Green (2%)

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

Component: Lutterloh, limestone substratum (2%)

Generated brief soil descriptions are created for major soil components. The Lutterloh, limestone substratum soil is a minor component.

Component: Bivans (2%)

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

Component: Hickoria, depressional (2%)

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

Map Unit: 58—Cypress Lake-Holopaw, limestone substratum, complex

Component: Cypress Lake (69%)

The Cypress Lake component makes up 69 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 over limestone. Depth to a root restrictive layer, bedrock, lithic, is 13 to 64 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 frequently ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 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: Holopaw, limestone substratum (22%)

The Holopaw, limestone substratum component makes up 22 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 over limestone. Depth to a root restrictive layer, bedrock, lithic, is 34 to 79 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 6 inches during 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: Matmon (1%)

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

Component: Bradenton (1%)

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

Component: Aripeka (1%)

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

Component: Placid, depressional (1%)

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

Component: Popash (1%)

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

Component: Waccasassa (1%)

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

Component: Hickoria, depressional (1%)

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

Component: Brynwood, 075078 minor comp (1%)

Generated brief soil descriptions are created for major soil components. The Brynwood, 075078 minor comp soil is a minor component.

Component: Chobee (1%)

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

Map Unit: 60—EauGallie-Holopaw complex, limestone substratum

Component: EauGallie (61%)

The EauGallie component makes up 61 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, bedrock, lithic, is 50 to 80 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 very 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 July, August, September. Organic matter content in the surface horizon is about 4 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: Holopaw, limestone substratum (23%)

The Holopaw, limestone substratum component makes up 23 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, bedrock, lithic, is 45 to 80 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 July, August, September. 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: Janney (2%)

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

Component: Pineda, limestone substratum (2%)

Generated brief soil descriptions are created for major soil components. The Pineda, limestone substratum soil is a minor component.

Component: Boca (2%)

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

Component: Chobee, limestone substratum, freq. flooded (2%)

Generated brief soil descriptions are created for major soil components. The Chobee, limestone substratum, freq. flooded soil is a minor component.

Component: Hallandale (2%)

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

Component: Hicoria, depressional (2%)

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

Component: Placid, depressional (2%)

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

Component: Popash (2%)

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

Map Unit: 73—Orlando fine sand, 1 to 5 percent slopes

Component: Orlando (92%)

The Orlando component makes up 92 percent of the map unit. Slopes are 1 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits over fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well 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. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 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: Tavares (1%)

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

Component: Adamsville (1%)

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

Component: Popash (1%)

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

Component: Placid, depressional (1%)

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

Component: Bonneau (1%)

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

Component: Millhopper (1%)

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

Component: Apopka (1%)

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

Component: Sparr (1%)

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

Map Unit: 76—Astatula fine sand, 1 to 8 percent slopes

Component: Astatula (96%)

The Astatula component makes up 96 percent of the map unit. Slopes are 1 to 8 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 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. There is no zone of water saturation within a depth of 72 inches. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Placid, depressional (1%)

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

Component: Millhopper (1%)

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

Component: Apopka (1%)

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

Component: Sparr (1%)

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

Map Unit: 77—Candler fine sand, 5 to 8 percent slopes

Component: Candler (90%)

The Candler component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian and 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 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 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tavares (5%)

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

Component: Apopka (3%)

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

Component: Placid (2%)

Generated brief soil descriptions are created for major soil components. The Placid 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.

Marion County Area, Florida

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

Component: Adamsville (85%)

The Adamsville component makes up 85 percent of the map unit. Slopes are 0 to 5 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 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 June, July, August, September, October, November. 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: Pomona, non-hydric (4%)

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

Component: Pompano (4%)

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

Component: Candler (4%)

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

Component: Tavares (3%)

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

Map Unit: 22—Candler sand, 0 to 5 percent slopes

Component: Candler (90%)

The Candler 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, knolls on marine terraces on coastal plains. The parent material consists of eolian deposits and/or sandy and loamy 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 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: Tavares (5%)

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

Component: Millhopper (5%)

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

Map Unit: 58—Placid sand, depressional

Component: Placid, depressional (80%)

The Placid, depressional component makes up 80 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 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 3 inches during January, February, March, 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 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: Pomona, hydric (7%)

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

Component: Adamsville (7%)

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

Component: Pompano, depressional (6%)

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

Map Unit: 59—Placid-Pompano-Pomona complex

Component: Placid (37%)

The Placid component makes up 37 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 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 January, February, March, 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: Pompano (31%)

The Pompano component makes up 31 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November. 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: Pomona (26%)

The Pomona component makes up 26 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 May, June, July, August, September, October, November. 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: Lynne, non-hydric (6%)

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

Map Unit: 61—Pomona sand

Component: Pomona, non-hydric (60%)

The Pomona, non-hydric component makes up 60 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, September, October, November. 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: Pomona, hydric (20%)

The Pomona, hydric component makes up 20 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 6 inches during May, June, July, August, September, October, November. 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: Lynne, non-hydric (5%)

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

Component: Electra (5%)

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

Component: Placid (5%)

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

Component: Pompano (5%)

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

Map Unit: 70—Terra Ceia muck, frequently ponded, 0 to 1 percent slopes

Component: Terra Ceia (80%)

The Terra Ceia component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material. 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 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, 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: Okeelanta (6%)

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

Component: Gator (5%)

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

Component: Tomoka (3%)

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

Component: Okeechobee (2%)

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

Component: Anclothe (1%)

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

Component: Pompano (1%)

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

Component: Placid (1%)

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

Component: Chobee (1%)

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

Data Source Information

Soil Survey Area: Alachua County, Florida
Survey Area Data: Version 23, Sep 1, 2022

Soil Survey Area: Levy County, Florida
Survey Area Data: Version 19, Sep 1, 2022

Soil Survey Area: Marion County Area, Florida
Survey Area Data: Version 20, Sep 1, 2022

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

October 19th, 2022

Ms. Patti Anderson
Land Management Planner, Florida Forest Service
Florida Department of Agriculture and Consumer Services
3125 Conner Boulevard, Suite I-258, Mail Stop C-25
Tallahassee, FL 32399-1650

RE: Goethe State Forest

Dear Ms. Anderson:

Thank you for your inquiry regarding the surface water quality classifications and Outstanding Florida Waters (OFW) for Goethe State Forest in Levy and Alachua counties. All of the surface waters within, adjacent to, or within 4 miles of the state forest are classified as Class III waters according to Rule 62-302.400, Florida Administrative Code (F.A.C.). The closest Class II waters are more than 4 miles away in Waccasassa Bay.

According to subsection 62-302.700(9), F.A.C., the Levy County Forest/Sandhills OFW boundary overlaps a portion of the Goethe State Forest (see attached maps). There are also additional OFWs that are close by, to the west and south of the state forest. OFWs located to the west are Waccasassa Bay State Preserve (~5 miles), and the Big Bend Seagrasses Aquatic Preserve (~4 miles). OFWs located to the south are the Lake Rousseau State Recreation Area (~2 miles), the Withlacoochee River System (~4 miles), the Rainbow River OFW (~5 miles), the Rainbow Springs Aquatic Preserve (~5.5 miles), and the Rainbow River State Park (~5 miles).

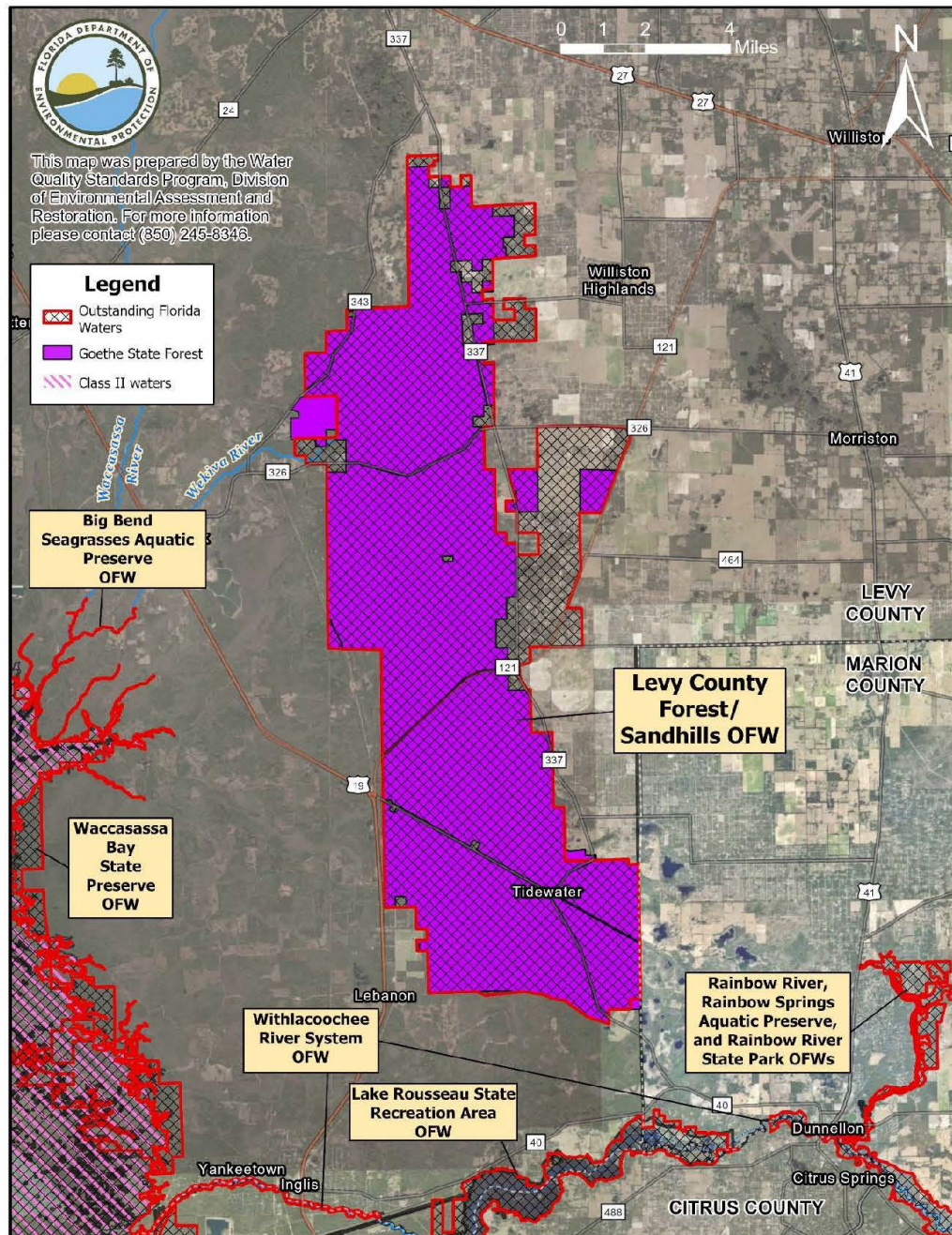
According to the Florida Natural Areas Inventory Managed Areas data layer, there is one parcel that is adjacent to the state forest, the NATC Gulf Hammock Conservation Easement, as well as other parcels close by that are considered conservation areas. However, these have not been designated as OFWs other than as described above and are not displayed on the map.

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
Water Quality Standards Program
Florida Department of Environmental Protection

Goethe State Forest Maps:
Map 1: Southern parcels for Goethe State Forest



Map 2: Northern parcels for Goethe State Forest

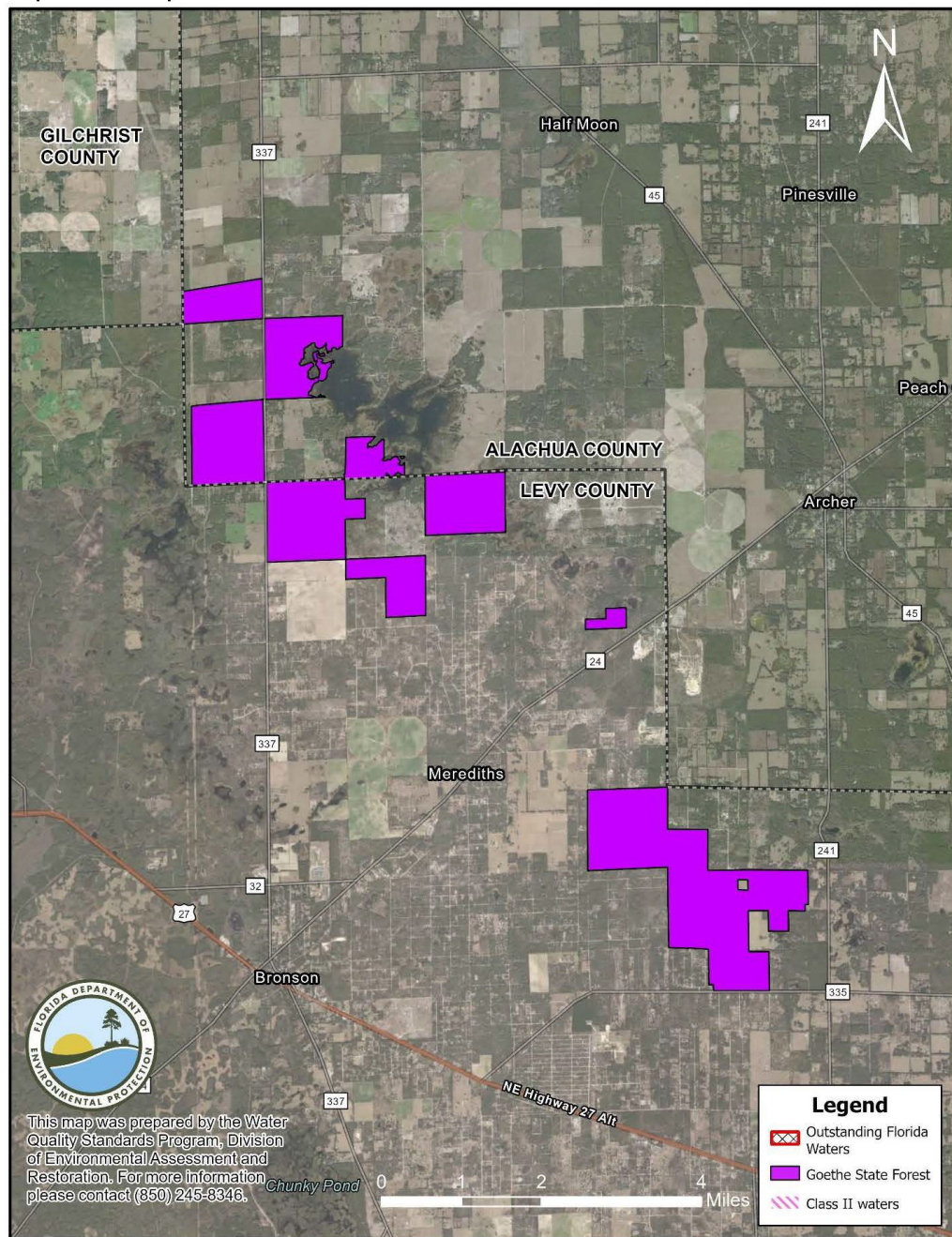


Exhibit K

Water Resources and BMAP Maps



Water Resources and BMAP Map

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

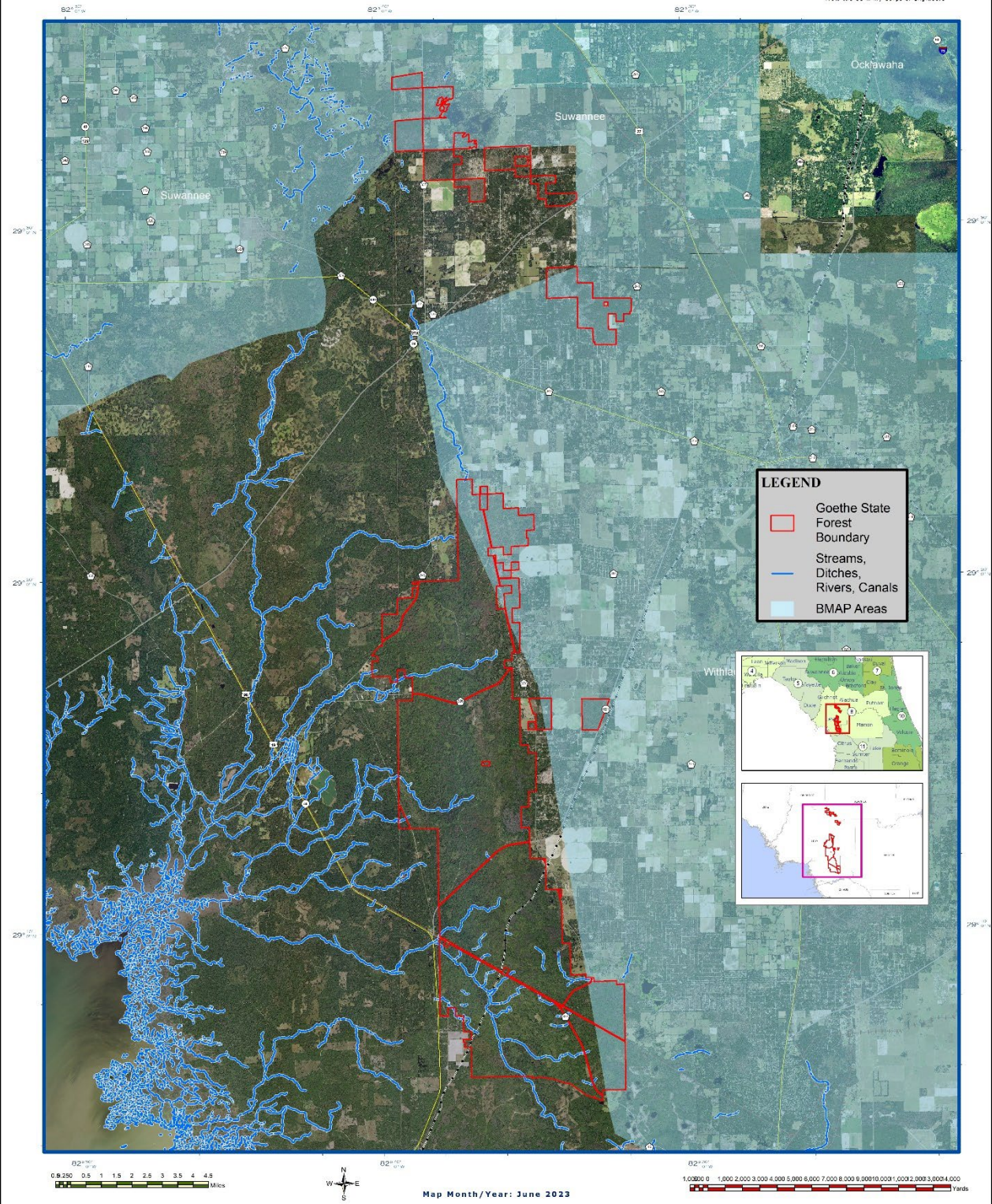
[illegible]

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

October 19, 2022

Patti Anderson
Florida Forest Service
Florida Department of Agriculture and 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: Goethe State Forest
Date Received: 10/13/2022
Location: Levy & Alachua Counties

Based on the information available, this site appears to be located on or very near a significant region of scrub habitat, a natural community in decline that provides important habitat for several rare species within a small area.

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 present on or very near this site, specifically Eastern Indigo Snake (*Drymarchon couperi*) and Red-cockaded Woodpecker (*Dryobates borealis*) (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

*Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.*

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 Goethe 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 Watermelon Pond 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 or visit <https://floridadep.gov/lands/environmental-services/content/florida-forever>.

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



Florida
Natural Areas
Inventory

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Tallahassee, FL 32303
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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

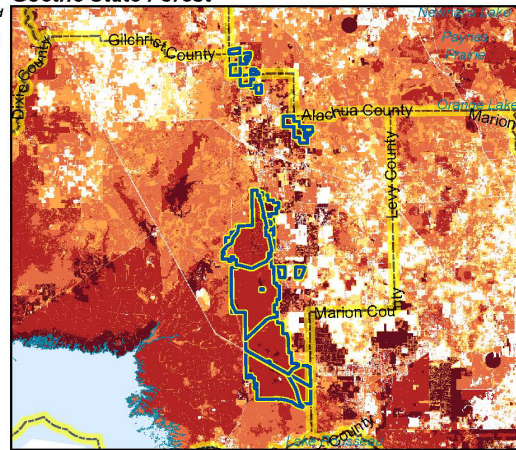
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Site Boundary

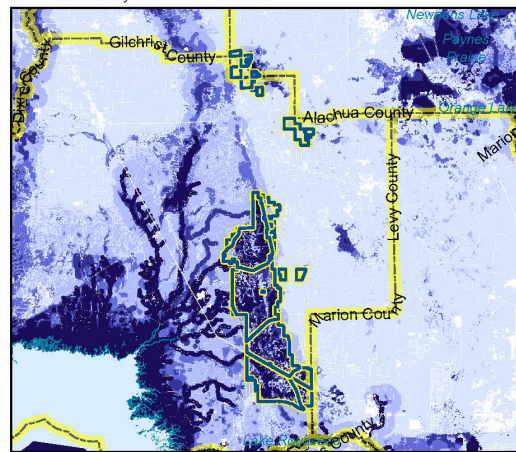
Map should not be interpreted without
accompanying documents.

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
funding from FL Dept of Environmental Protection
and US Fish & Wildlife Service.

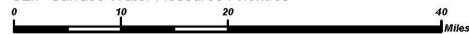
Goethe State Forest



CLIP Biodiversity Resource Priorities

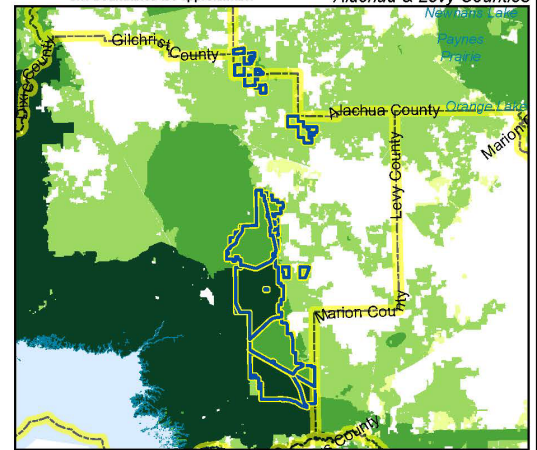


CLIP Surface Water Resource Priorities

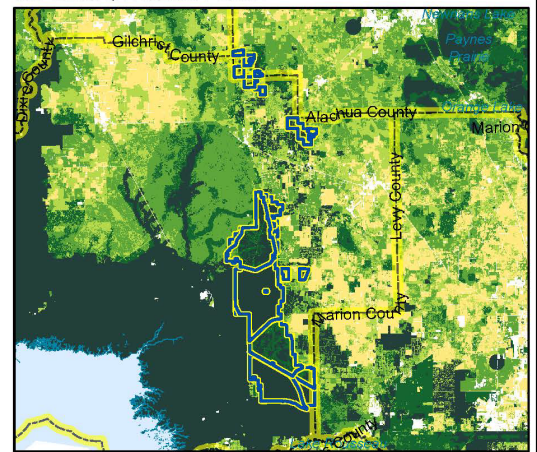


Site boundaries are approximate.

Alachua & Levy Counties



CLIP Landscape Resource Priorities



CLIP Aggregated Resource Priorities

Map produced by KAB
10/19/2022



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FNAI ELEMENT OCCURRENCE REPORT on or near Goethe State Forest



Global State Federal State Observation									
Map Label	Scientific Name	Common Name	Rank	Rank	Status	Listing	Date	Description	EO Comments
AGRIINCI*32	<i>Agrimonhia incisa</i>	incised groove-bur	G3	S2	N	T	2017-07-24	On the edge of a slash pine plantation and forest road near xeric hammock and sandhill. Area used to be a phosphate mine in the late 1800's-early 1900's with borrow pits and mine tailing still present.	6 individuals observed in the area in 2016. A sample was collected for verification in 2017.
ALLMISS*195	<i>Alligator mississippiensis</i>	American Alligator	G5	S4	SAT	FT(S/A)	2007-03-26	Floodplain swamp	1 individual, 6-8 ft in length
ANTIIPRAT*15	<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST	1985	SMALL PONDS IN GRAZED PASTURE.	1-3 PAIRS IN 1984-85.
ANTIIPRAT*21	<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST	1985	MAIDENCANE-PICKERELWEED INTERFACE OF MARSH.	3-4 PAIRS NESTING FROM 1983 TO 1985.
ANTIIPRAT*66	<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST	2011-09-09	2011-09-09: xeric uplands with scattered depressions and some remnant sandhill in a mosaic of pasture, plantation and rural home sites (U11HET06FLUS).	2011-09-09: Drummond and Hetrick observed 2 pairs ca. 830 m apart (U11HET06FLUS)
ARNODIVE*14	<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T	1958-08-10	1958-08-10: Alluvium of stream bank in hardwood hammock (S58KRASFFLUS, S58KRAFSLUS).	1958-08-10: Frequent on alluvium of stream bank; plants up to 3 m tall with pale lavender corollas; specimen taken [flowering] (S58KRASFFLUS, S58KRAFSLUS).
ARNODIVE*33	<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T	2007-03-26	Hydric hammock; in area of boardwalk.	Over 1000 vegetative plants seen; some plants still have fruits from last season.
ARNODIVE*34	<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T	2007-04-11	Hydric hammock	Over 1000 vegetative plants seen.
ARNODIVE*35	<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T	2007-04-25	Hydric hammock	45 plants in flower/bud; widely scattered.
ARNODIVE*36	<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T	2007-04-26	Mainly in hydric hammock. Some in basin swamp or along roadsides through wetlands.	At least 7500 plants seen in multiple locations; most vegetative, but some bolting or in flower.
ATHEFLOR*10	<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST	1987-01-31	IMPROVED PASTURE (IRRIGATED)	PAIR WITH AT LEAST ONE YOUNG, WITH SIGHTINGS 16 APRIL, 14 AND 27 MAY AND 22 JULY 1982 BY PETRA WOOD; 1 INDIV. SEEN S. OF ROAD 31 JAN 1987 BY REED NOSS
ATHEFLOR*112	<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST	1999-07-27	Rural residential. 1999: Urban, vacant lots. One occupied lot. (U99BOW01FLUS).	5 burrows with 10 adult and 2 young owls observed (U99BOW01FLUS).



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FNAI ELEMENT OCCURRENCE REPORT on or near Goethe State Forest



Map Label	Scientific Name	Common Name	Global State Federal State			Observation Date	Description	EO Comments
			Rank	Status	Listing			
COELTUBE*2	<i>Coelorrachis tuberculosa</i>	Piedmont Jointgrass	G3	S3	N	T	1977-06-17	SANDY FORMER BOTTOM OF POND
COLLULTR*1	<i>Colleites ultravalidus</i>	Sandhill Cellophane Bee	G2G3	S2?	N	N	2011-04-02	None given, but appears to be sandhill.
COPRGOPH*22	<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N	1988-06-20	none given
CROTADAMP*250	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	N	N	1995 pre	No general description given
CROTADAMP*63	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	N	N	1991-05-05	No general description given
DEPRMARS*167	Depression marsh		G4	S4	N	N	2006-09-26	2006-09-26: imbedded within small remnant sandhill in relatively good condition, although logging removed larger pines; however, some regeneration of longleaf pine is occurring; turkey oaks and native groundcover, including wiregrass, surrounded by pine p
DRYMCOUP*347	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT	1973-10	No general description given
DRYMCOUP*474	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT	2016-01-05	Areas of fair to good quality sandhill with depression marshes. Much of surrounding former sandhill has been converted to agriculture.
DRYMCOUP*91	<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT	1981	No general description given
DRYBORE* (X)179	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE	1978	PINE.
DRYBORE*233	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE	2021	2006: large area of pineland with mature slash and longleaf pine, plantation, sandhill, and interspersed wetlands; sandhill is restricted to the Brooksville Ridge on the eastern boundary of the forest.



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FNAI ELEMENT OCCURRENCE REPORT on or near Goethe State Forest

Map Label	Scientific Name	Common Name	Global State Federal State Observation				EO Comments
			Rank	Status	Listing	Date Description	
DS*32749	Data Sensitive Element	Data Sensitive	G5T2	S2	N	N 2007-07-28 Data Sensitive	Data Sensitive
DS*32750	Data Sensitive Element	Data Sensitive	G5	S2S3	N	N 2007-07-28 Data Sensitive	Data Sensitive
DS*33347	Data Sensitive Element	Data Sensitive	G3G4T3	S3	N	N 2010-04-10 Data Sensitive	Data Sensitive
DS*33349	Data Sensitive Element	Data Sensitive	G3G4T3	S3	N	N 2007-10-20 Data Sensitive	Data Sensitive
DS*33368	Data Sensitive Element	Data Sensitive	G3G4T3	S2S3	N	N 2007-10-20 Data Sensitive	Data Sensitive
DS*33936	Data Sensitive Element	Data Sensitive	G3G4T3	S3	N	N 2008-04-05 Data Sensitive	Data Sensitive
DS*34225	Data Sensitive Element	Data Sensitive	G4	S2S3	N	N 2009-03-21 Data Sensitive	Data Sensitive
DS*34226	Data Sensitive Element	Data Sensitive	G5T3T4	S2S3	N	N 2009-03-21 Data Sensitive	Data Sensitive
DS*34563	Data Sensitive Element	Data Sensitive	G3	S3	N	N 1982 pre Data Sensitive	Data Sensitive
DS*34565	Data Sensitive Element	Data Sensitive	G2G3	S2S3	N	N 1994 pre Data Sensitive	Data Sensitive
DS*34566	Data Sensitive Element	Data Sensitive	G2G3	S2S3	N	N 1982 pre Data Sensitive	Data Sensitive
DS*34878	Data Sensitive Element	Data Sensitive	G4	S2S3	N	N 2009-08-22 Data Sensitive	Data Sensitive
DS*34884	Data Sensitive Element	Data Sensitive	G5	S2	N	N 2009-03-27 Data Sensitive	Data Sensitive
DS*43039	Data Sensitive Element	Data Sensitive	G1G2	S1S2	N	N 2017-01-30 Data Sensitive	Data Sensitive
DS*43040	Data Sensitive Element	Data Sensitive	G3	S3	N	N 2017-01-30 Data Sensitive	Data Sensitive
EGRECAER*298	Egretta caerulea	Little Blue Heron	G5	S4	N	N 1988-06-02 Cypress and shrub pond in old cuts.	1988/06/02: D.E. Runde, GFC, observation. Large GREG young observed from air. Map lat and long from USGS topo. Unable to locate colony on ground; poor weather prevented thorough search. "Total" = C (includes GREG, LBHE, ANHI). 1989: Vacant.
FALCPAUL*102	Falco sparverius paulius	Southeastern American Kestrel	G5T4	S3	N	N 1999 SANDHILL	1999: nest observed (U99W0001FLUS).
FALCPAUL*103	Falco sparverius paulius	Southeastern American Kestrel	G5T4	S3	N	N 1999 No general description given	1999: nest observed (U99W0001FLUS).



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FNAI ELEMENT OCCURRENCE REPORT on or near Goethe State Forest



Inventory	Global State Federal State Observation									
	Map Label	Scientific Name	Common Name	Rank	Rank Status	State Listing	Observation Date	Description	EO Comments	
	FALCPAUL*111	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	2012-05-10	Nest cavity located in a large longleaf pine (<i>Pinus palustris</i>) snag. Sandhill in process of being restored. Site was a cattle-grazed pine plantation. The area received prescribed fire in April of 2011 reducing the density of planted longleaf pine (<i>Pinu</i>	Pair of adults observed feeding chicks begging from nest cavity.
	FALCPAUL*24	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	1999	IMPROVED PASTURE AND CLOSED TURKEY OAK-LONGLEAF PINE. DEGRADED LONGLEAF PINE-TURKEY OAK. WIREGRASS SANDHILLS.	1999: Nest observed (U99W0001FLUS). 1988: NUMEROUS PAIRS SIGHTED THROUGHOUT AREA. 1982-83 (WOOD) TO 1988 (NOSS). UNOBSERVED PAIRS AND INDIVIDUALS PROBABLE THROUGHOUT LOCAL SANDHILL COMMUNITY.
	FALCPAUL*35	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	1982-07-22	CLOSED TURKEY OAK-LONGLEAF PINE	PAIR WITH MALE AND/OR FEMALE OBSERVED 30 APRIL 1982, 24 JUNE 1982, AND 9 AND 22 JULY 1982 BY PETRA WOOD.
	FALCPAUL*36	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	1982-08-19	CLOSED TURKEY OAK	PAIR WITH MALE AND/OR FEMALE SEEN 9 JULY AND 19 AUG. 1982 BY PETRA WOOD.
	FALCPAUL*5	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	1987-08-30	SANDHILLS	ON 30 AUG. 1987 MACLAREN AND RUNDE OBSERVED ONE MALE KESTREL PERCHED ON A SNAG WITH AN UNIDENTIFIED PREY ITEM. THE KESTREL FLEW AWAY WITH PREY AND VOCALIZED.
	FOREGODF*11	<i>Forestiera godfreyi</i>	Godfrey's swampprivet	G2	S2	N	E	1937-07-09	1937-07-09: Hammock (Pasture Survey).	1937-07-09: Specimen taken (sterile) (Pasture Survey).
	GOMPANTH3	<i>Gomphaeschna antilope</i>	Taper-tailed Darner	G4	S4	N	N	2001-09-30	2001-09-30: No description given (U09DEP01FLUS).	2001-09-30: Staff from the Florida Department of Environmental Protection collected this species (U09DEP01FLUS).
	GOPHPOLY*1094	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1998-11-12	1998-11-12: xeric pine flatwoods with scattered cypress domes; longleaf pine 54%, slash pine 37%, turkey oak 9%, with tallest trees averaging 26 m; shrub cover 20%, mostly saw palmetto; ground cover approximately 80%, dominated by grasses (U99SUR02FLUS).	1998-11-12: Surdick observed one active burrow in 150 m of transects (U99SUR02FLUS).



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GOPHPOLY*1095	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	1998-11-16	Disturbed sandhill undergoing active management efforts that include prescribed fire. Mature longleaf pine abundant, groundcover disturbed. 1999-11-16: Canopy cover varies from 15-50%, shrub cover from 8-45%, ground cover from 40-75%; additional details i	1998-11-16: Surdick observed eight burrows north of pond and two south of pond in two 150-m transects (U99SUR02FLUS).
GOPHPOLY*1096	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	2019-11-14	General Description: This is a large area in the vicinity of Watermelon Pond and includes a mosaic of public and private lands. Most of the original uplands were sandhill, although substantial tracts have been severely degraded by agricultural and silviculture.	FNAI 2019 LTDS survey: 24,384 m of transect surveyed within sample frame of 176 ha; 154 burrows scoped, 104 occupied; estimated population size of 395 with density of 2.2 tortoises per ha (F19FNA21FLUS). This large population is known from multiple record
GOPHPOLY*1190	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	2006-09-26	2006-09-26: two small remnant sandhill tracts (may be some scrubby flatwoods characteristics in one) in relatively good condition, although logging removed larger pines; however, some regeneration of longleaf pine is occurring; turkey oaks and native grou	2006-09-26: During Florida Forever project assessment, D. Jackson and J. Surdick observed several active tortoise burrows (mostly adult) in remnant sandhills and viewed some with burrow camera (PNDJAC01FLUS; PNDSUR01FLUS).
GOPHPOLY*245	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	1987 pre	No general description given	1987-pre: Species occurrence noted here in Diemer's unpublished map set (U86DIE01FLUS).
GOPHPOLY*429	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	1988	LONGLEAF PINE-TURKEY OAK-WIREGRASS SANDHILLS, MUCH CONVERTED TO TURKEY OAK-ROSEMARY SCRUB.	MANY ACTIVE BURROWS NOTED; POPULATION DENSITY APPROX. 0.5-1.5/ACRE (TOTAL POP. > 1000 WITHIN AREA SURVEYED).
GOPHPOLY*430	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	1988-08-29	LONGLEAF PINE-TURKEY OAK-WIREGRASS SANDHILLS, VARYING GREATLY IN LOCAL QUALITY AND WITH SOME CLEARED AREAS, SLASH PINE PLANTATIONS AND DEVELOPMENT.	POPULATION DISTRIBUTED THROUGHOUT AREA SURVEYED, WITH DENSITIES VARYING GREATLY. FROM <0.5/ACRE TO APPROX. 1.5/ACRE; ACTIVE BURROWS SEEN 7,8,27 JULY AND 29 AUG 1988.



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GOPHPOLY*679	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1998-11-12: mesic pine flatwoods with scattered cypress domes; longleaf pine 89%, slash pine 11%, with tallest trees averaging 22 m; shrub cover 65%, mostly saw palmetto; ground cover approximately 83%, dominated by woody plants (U99SUR02FLUS).
GOPHPOLY*712	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1991-09-20 WET FLATWOODS.
GOPHPOLY*758	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST	1990 - 1999 No general description given
HALILEUC*1281	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2003 2005-07-12: Source does not provide a description.
HALILEUC*1699	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2003 2005-09-12: Source does not provide a description.
HALILEUC*936	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2002 Pasture edge.
HALILEUC*937	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2001 Hardwood swamp.
HAROSARA*7	<i>Haroldia taeniatus saramari</i>	Sand Pine Scrub Ataenius Beetle	G3G4	S3S4	N	N	2002-02-16: No description given (N05LAM01FLUS).
HASTROBE*10	<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E	2007-04-11: Plants occur slightly above hydrologic gradient that supports Arnoglossum diversifolium. Hydric hammock (F07FNA18FLUS).



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HASTROBE*7	<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E	2007-04-26	2007-04-26: Hydric hammock (F07FNA18FLUS).
HASTROBE*8	<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E	2007-04-25	2007-04-25: Hydric hammock. Associated species include Magnolia virginiana, Carpinus caroliniana, Sabal palmetto, Serenoa repens, Acer rubrum, Myrica cerifera, Tillandsia bartramii (F07FNA18FLUS).
HASTROBE*9	<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E	2007-04-25	2007-04-25: Edge of hydric hammock, four meters from creek. With Magnolia virginiana, Carpinus caroliniana, Serenoa repens, Sabal palmetto, Acer rubrum, Pinus elliotii, Quercus virginiana, Myrica cerifera, Mitchella repens, Hydrocotyle umbellata (F07FNA18FLUS).
HETESIMU*11	<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N	2000-04-02	2000-04-02: Peggy Young found adult male (identity confirmed by R. Ashton) crossing graded road in early afternoon; reportedly has seen a couple of other specimens in past year or two (PNDY0006FLUS, PNDASH01FLUS).
HETESIMU*5	<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N	2017-10-21	2012: Adult observed in xeric hammock in the spring, and a hatchling observed in sandhill during the fall. 1998-2004: Sandhill: longleaf pine (sparse)-turkey oak-wiregrass, with depression marsh, one house, prescribed fire to maintain habitat. Much o
LEITFLOR*3	<i>Leitneria floridana</i>	corkwood	G3	S3	N	T	1979-08-09	1979-08-09: 1-3 M TALL, STERILE (S79DUNFSFLUS).



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LITHCAP144	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N	2019-11-12	2012-08-22: Adults heard from recently flooded basin marsh and a juvenile (38mm) was captured in sandhill five weeks later. />1999: Sandhill: longleaf pine-turkey oak, with depression marshes, one house, prescribed fire to maintain habitat. Much of sur	12 observation during a 2019 gopher tortoise survey (F19FNA19FLUS). />2012-08-28: Juvenile captured in bucket trap. 2012-08-22: Adults heard calling from recently flooded Watermelon Pond basin after years of drought. />2002-1996: R. Ashton monitors
LITHCAP190	<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N	2006-09-26	2006-09-26: small remnant sandhill in relatively good condition, although logging removed larger pines; however, some regeneration of longleaf pine is occurring; turkey oaks and native groundcover; surrounded by pine plantation, much of which is on former	2006-09-26: During Florida Forever project assessment, D. Jackson and J. Surdick observed adult frog in one of ca. 6 tortoise burrows viewed with burrow camera; burrow was ca. 50 m from depression marsh, undoubtedly the breeding site for this population (
MYCOGAI*2	<i>Mycotrupes galgei</i>	North Peninsular Mycotrupes Beetle	G2G3	S2S3	N	N	1967-03-31	2009: This area is mostly sandhill habitat (PNDALM01FLUS). 1967-03-31: No description given (B73WOO01FLUS)	1967-03-28 -- 1967-03-31: Woodruff collected two specimens in a malt-yeast-cat dung trap at the "Archer, 2mi. W." site (B73WOO01FLUS). 1959-02: Specimens were collected on various dates in late February at all three locations. Numbers collected ranged f
MYCTAMER*173	<i>Mycteria americana</i>	Wood Stork	G4	S2	T	FT	2012-03-03	2011-2012: large depression in a xeric landscape of remnant sandhill, pastures, pine plantations and rural home; many other depressions of varying size are in the vicinity (U11HET05FLUS, U12HET03FLUS).	2012-03-03: Drummond and Hetrick observed 2 individuals (U12HET03FLUS). 2011-09-09: Drummond and Hetrick observed ca. 325 wood storks foraging in large depression (U11HET05FLUS).
NASTNEAM*1	<i>Neamathia</i>	Neamathia Skipper	G4	S2S3	N	N	2007-09-21	2007-09-21: The site is pristine sandhill with lots of deer tongue and silver-leafed aster in bloom (F07MAL02FLUS).	2007-09-21: Two mating butterflies found and photographed (P09MAL01FLUS).
NOTOPERS*106	<i>Notopthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2006	No description recorded.	Species observed in 2006. Multiple subsequent surveys did not detect Striped Newts (A17FAR01FLUS).
NOTOPERS*107	<i>Notopthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2006	Depression marsh	Species observed (A17FAR01FLUS).



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NOTOPERS*115	<i>Notophtalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2010-01 -- 2010-06	Depression marsh Species observed (A17FAR01FLUS).
NOTOPERS*172	<i>Notophtalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	1991	Based on one observation from 1991 drift fence survey (A17FAR01FLUS).
NOTOPERS*60	<i>Notophtalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2005-02-03	2005-02-03: E. Zimmerman and A. Copeland captured and released adult specimen, said to be paedomorphic (photos provided; appears to be male based on enlarged hind legs; D. Jackson interpretation), during dipnet survey in littoral zone of Hog Pond (U05ZIM0
NOTOPERS*61	<i>Notophtalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2006-03-07	2006-03-07: J. Blush, C. Smith, and E. Zimmerman collected 1 metamorphosed and 2 paedomorphic adults by dipnetting; 2 specimens (UF-146015, 146033) deposited at UF/FLMNH as vouchers (A06SMI01FLUS, U06BLU01FLUS).
NOTOPERS*71	<i>Notophtalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C	2006-03-24	2006-03-16, 24: specimens collected, presumably by C. P. Smith, vouchered as UF-146012, 146020 (A06SMI01FLUS).
ONTHPOLY*6	<i>Onthophagus polyphemi</i>	Punctate Gopher Tortoise Onthophagus Beetle	32G3T2T?	S2	N	N	1960-03-28	1960-03-28: One specimen was collected by R.E. Woodruff in a gopher tortoise burrow (B73WOO01FLUS).
PELTPROF*9	<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N	1959-02-28	1959-02-28: A total of 342 specimens were collected from 1959-02-21 to 1959-02-28. All of the specimens were collected by R.E. Woodruff using a malt trap (B73WOO01FLUS).
PEUCAEST*100	<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	2012-04-27	Several singing males recorded over two dates. Birds heard singing from sandhill, ruderal area, and dry basin marsh. Prescribed fire has recently been introduced to the entire WEA.



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PEUCAEST*2	<i>Peuceea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	1988	LONGLEAF PINE-TURKEY OAK-WIREGRASS PATCHES IN DEGRADED TURKEY OAK-ROSEMARY SCRUB.
PEUCAEST*3	<i>Peuceea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	1999	SANDHILL 1999: REPORTED; NO NUMBERS PROVIDED (U99W0001FLUS) 1988-07-07: TERRITORIAL SINGING MALES THROUGHOUT AREA SURVEYED, BUT DENSEST WHERE SANDHILL VEGETATION WAS OF HIGHEST QUALITY (I.E., WELL-BURNED, GOOD WIREGRASS GROUNDCOVER, LONGLEAF PINES).
PEUCAEST*59	<i>Peuceea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	1999	No general description given 1999: Reported on site (U99W0001FLUS).
PEUCAEST*60	<i>Peuceea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N	1999	No general description given 1999: Reported on site (U99W0001FLUS).
PHIDWORK*5	<i>Phidippus workmani</i>	Workman's Jumping Spider	G2G3	S2S3	N	N	1994-06-04	1994-06-04: P. E. Skelley collected an immature and reared it to become and adult male (B04EDW01FLUS). 1994-04-04: One female was collected as an immature and was reared to become an adult female (spider died 1994-01-11) by P. E. Skelley (U08ALM01FLUS). 1
PHYLPLAT*34	<i>Phyllanthus liebmannianus</i> ssp. <i>platylepis</i>	pinewoods danties	G4T2	S2	N	E	2007-04-26	In hydric hammock along road locations along road; plants flowering
PITUMELA*17	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST	1981	No general description given
PITUMELA*189	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST	1995-05-27	Pine woodland.
PITUMELA*202	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST	2016-04-05	Large area near Watermelon Pond and includes mosaic of public and private lands. Original uplands mostly sandhill; substantial tracts were severely degraded for agriculture and silviculture. Some xeric hammock, isolated wetlands, hardwoods. Additional



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PITUMELA*88	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST 1957-05-30 No general description given
PODOFLOR*72	<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	1999-02-04 Disturbed sandhill
PODOFLOR*75	<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	2012-11-08 Sandhill, scrub, xeric hammock
PODOFLOR*76	<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	1999-04-06 Primarily sandhill and scrub habitat
PTERECRI*147	<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T 2012-09-24 Sandhill that had young planted longleaf pines among relic longleaf. The habitat is periodically burned. Common plant associates include Pinus palustris/Quercus laevis/Rubus cuneifolius/Aristida stricta. Paspalum notatum, Eremochloa ophiuroides, Eupato
PTERECRI*83	<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T 2002-08-10 2002-08-10: Plant on edge of a disked fire line, in a sandhill. Ground cover includes wiregrass, Sorghastrum secundum, Andropogon spp., Cassia fasciculata. Longleaf pine, turkey oak, Vaccinium arboreum, and rosemary present. Area has been burned in rece
SANDHILL*242	Sandhill		G3	S2	N	2006-09-26 2006-09-26: small remnant sandhill in relatively good condition, although logging removed larger pines; however, some regeneration of longleaf pine is occurring, turkey oaks and native groundcover, including wiregrass, surrounded by pine plantation, much



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SANDHILL*243	Sandhill		G3	S2	N	N	2006-09-26: During Florida Forever project assessment, D. Jackson and J. Surdick observed site as well as active tortoise burrows (PNDJAC01FLUS); PNDSUR01FLUS).
SANDHILL*43	Sandhill		G3	S2	N	N	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1993-02-08) (J05FNA02FLUS). LONGLEAF PINE-TURKEY OAK-WIREGRASS COMMUNITY WITH EXCELLENT GROUND COVER DIVERSITY; SOME PATCHES OF MATURE PINE, OTHERWISE TURK
SANDHILL*44	Sandhill		G3	S2	N	N	2004: Update to last obs date was based on interpretation of aerial photography (previous value was 1988) (J05FNA02FLUS). HIGH QUALITY PATCHES ARE FAIRLY WELL-BURNED, OPEN LONGLEAF PINE-TURKEY OAK-WIREGRASS WITH DIVERSE GROUND COVER; LONGLEAFS MEASURED UP
SANDHILL*45	Sandhill		G3	S2	N	N	LONGLEAF PINE-TURKEY OAK-WIREGRASS COMMUNITY, VARYING GREATLY IN LOCAL QUALITY; SOME AREAS DEVOID OF MATURE LONGLEAF PINE AND/OR INVADED BY HARDWOODS; BEST PATCHES WITH DIVERSE, WIREGRASS-DOMINATED GROUND COVER AND MATURE PINES.
SCIUNGE*19	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	1999: 111 nests observed in sandhills of Goethe State Forest; 82 fox squirrels estimated based on assumption of 1/33 acres (U99WOO02FLUS). 1987-01-31: individual observed in turkey oak.



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SCIUNIGE*221	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2009-04-01-pre	No information provided. 2009: sandhill with an adjacent cleared area that might be an agricultural field (PNDDAV04FLUS).	One or two squirrels observed (PNDPED01FLUS); observations fairly close to each other but unknown whether made at same time.
SCIUNIGE*270	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2007-04-26	wet flatwoods	One individual commuting
SCIUNIGE*271	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2007-04-12	Mesic flatwoods to the west, pasture to the east.	Two individuals commuting
SCIUNIGE*56	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2007-04-09	Sandhill	1988-08-08: one nest (fairly recent) found in turkey oak, no squirrels seen (F88NOS02FLUS). 2007-04-09: One individual foraging
SPIRBREV*1	<i>Spiranthes brevibris</i>	small ladies-tresses	G1G2	S1	N	E	2003-03	1998-03-31: COUNTY-MAINTAINED ROADSIDE DITCH WITH PINGUICULA AND ALETRIS LUTEA; NEXT TO A LOGGING RAMP (F98WOO01FLUS).	This population was discovered in 1998 and has been visited yearly by Paul Martin Brown (PNDBRP11FLUS). Carol Wooley submitted two locations to FNAI where she counted 63 total plants. One of these locations was visited briefly in 2007, and 1-10 plants w
STYLABD*53	<i>Stylisma abdita</i>	scrub stylisma	G3	S3	N	E	2020-09-08	Sandhill and white sand rosemary bald.	2020-09-08: Species observed during OBVM field work. 2012-05-22: Three separate populations were documented after a year long survey of the Watermelon Pond WEA. Approximately 200 plants were counted from a total estimated population of 2500 individuals. 2



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Aggregated Biodiversity Matrix Report



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<i>Agrimonia incisa</i>	incised groove-bur	G3	S2	N	T
<i>Alligator mississippiensis</i>	American Alligator	G5	S4	SAT	FT(S/A)
<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S2	N	T
<i>Colletes ultravalidus</i>	Sandhill Cellophane Bee	G2G3	S2?	N	N
<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	N	N
Depression marsh		G4	S4	N	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Gomphaeschna antilope</i>	Taper-tailed Darner	G4	S4	N	N
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Hasteola robertorum</i>	Florida hasteola	G1	S1	N	E
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N
<i>Nastra neamathla</i>	Neamathla Skipper	G4	S2S3	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Phyllanthus liebmannianus</i> ssp. <i>platylepis</i>	pinewoods dainties	G4T2	S2	N	E
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T
Sandhill		G3	S2	N	N
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Spiranthes brevilabris</i>	small ladies'-tresses	G1G2	S1	N	E
<i>Stylisma abdita</i>	scrub stylisma	G3	S3	N	E
Likely					
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Forestiera godfreyi</i>	Godfrey's swampprivet	G2	S2	N	E
<i>Haroldiataenius saramari</i>	Sand Pine Scrub Ataenius Beetle	G3G4	S3S4	N	N
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork		S2	T	FT
Sandhill upland lake		G3	S2	N	N
Scrub		G2	S2	N	N
Upland hardwood forest		G5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
Potential					
<i>Amphiuma pholeter</i>	One-toed Amphiuma	G3	S3	N	N
<i>Anthanassa texana seminole</i>	Seminole Crescent	G5T3T4	S2S3	N	N
Aquatic cave		G3	S3	N	N
<i>Asplenium x curtissii</i>	Curtiss' spleenwort	GNA	S1	N	N
<i>Asplenium x heteroresiliens</i>	Morzent's spleenwort	G2	S1	N	N
<i>Asplenium x plenum</i>	ruffled spleenwort	G1Q	S1	N	N
<i>Athene cucularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Callophrys gryneus sweadneri</i>	Florida Olive Hairstreak	G5T2	S2	N	N
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Carex chapmannii</i>	Chapman's sedge	G3	S3	N	T
<i>Coelorachis tuberculosa</i>	Piedmont jointgrass		S3	N	T

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.



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Florida Natural Areas Inventory

Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S1	N	N
<i>Crangonyx grandimanus</i>	Florida Cave Amphipod	G2G3	S2S3	N	N
<i>Euphyes dion</i>	Dion Skipper	G5	S2S3	N	N
<i>Hesperia attalus slossonae</i>	Seminole Skipper	G3G4T3	S3	N	N
<i>Hesperia meskei straton</i>	Eastern Meske's Skipper		S2S3	N	N
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	N	ST
<i>Leitneria floridana</i>	corkwood		S3	N	T
<i>Litsea aestivalis</i>	pondspice	G3?	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Mustela frenata peninsulæ</i>	Florida Long-tailed Weasel	G5T3?	S3?	N	N
<i>Mycotrupes gaigei</i>	North Peninsular Mycotrupes Beetle	G2G3	S2S3	N	N
<i>Myotis austroriparius</i>	Southeastern Myotis	G4	S3	N	N
<i>Nemastylis floridana</i>	celestial lily	G2	S2	N	E
<i>Neofiber alleni</i>	Round-tailed Muskrat		S2	N	N
<i>Neovison vison halimnetes</i>	Gulf Salt Marsh Mink	G5T2	S2	N	N
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagi	G2G3T2T3	S2	N	N
<i>Platanthera integra</i>	yellow fringeless orchid	G3G4	S3	N	E
<i>Procambarus pallidus</i>	Pallid Cave Crayfish	G2G3	S2S3	N	N
<i>Pseudemys concinna suwanniensis</i>	Suwannee Cooter	G5T3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
<i>Spigelia loganioides</i>	pinkroot	G2Q	S2	N	E
<i>Staphylus hayhurstii</i>	Scalloped Sooty Wing	G5	S2	N	N

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.



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Florida Natural Areas Inventory

Managed Area Element Summary

Goethe State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS					
<i>Agrimonia incisa</i>	incised groove-bur	G3	S2	N	T
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T
<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E
<i>Phyllanthus liebmannianus</i> ssp. <i>platylepis</i>	pinewoods dainties	G4T2	S2	N	E
<i>Pteroglossaspis ecristata</i>	giant orchid	G2G3	S2	N	T
<i>Spiranthes brevilabris</i>	small ladies'-tresses	G1G2	S1	N	E
AMPHIBIANS					
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	C
REPTILES					
<i>Alligator mississippiensis</i>	American Alligator	G5	S4	SAT	FT(S/A)
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	NR	ST
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	ST
BIRDS					
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	E, PT	FE
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
MAMMALS					
<i>Peromyscus floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
INVERTEBRATES					
<i>Anthanassa texana seminole</i>	Seminole Crescent	G5T3T4	S2S3	N	N
<i>Callophrys gryneus swadlowi</i>	Florida Olive Hairstreak	G5T2	S2	N	N
<i>Colletes ultravalidus</i>	Sandhill Cellophane Bee	G2G3	S2?	N	N
<i>Gomphaeschna antilope</i>	Taper-tailed Darner	G4	S4	N	N
<i>Hesperia attalus slossonae</i>	Seminole Skipper	G3G4T3	S3	N	N
<i>Hesperia meskei straton</i>	Eastern Meske's Skipper	G3G4T3	S2S3	N	N
<i>Neomathia neomathia</i>	Neomathia Skipper	G4	S2S3	N	N
<i>Staphylus hayhurstii</i>	Scalloped Sooty Wing	G5	S2	N	N

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



Florida
Natural Areas
Inventory

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Florida Natural Areas Inventory

Managed Area Element Summary Lower Waccasassa Conservation Area



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS					
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G2	S3	N	T
<i>Euphorbia commutata</i>	wood spurge	G5	S2	N	E
<i>Hasteola robertiorum</i>	Florida hasteola	G1	S1	N	E
<i>Spigelia loganioides</i>	pinkroot	G2	S2	N	E
AMPHIBIANS					
<i>Amphiuma pholeter</i>	One-toed Amphiuma	G3	S3	N	N
MAMMALS					
<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**

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Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com/Research

October 14, 2022

Patti Anderson
Florida Forest Service
3125 Conner Boulevard
Suite I-258, Mail Stop C-25
Tallahassee, FL 32399-1650

Dear Patti:

This letter is in response to your request for listed species occurrence records and critical habitats for your project (Goethe State Forest) located in Levy and Alachua 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 Striped newt, Florida burrowing owl, American bald eagle, Florida black bear, Eastern indigo snake, Red-headed woodpecker, Common nighthawk, Gopher frog, Gopher tortoise, Florida scrub jay, Florida worm lizard, Swallow-tailed kite, Summer tanager, Eastern coach whip, Giant orchid, Florida Deepdigger scarab beetle, Incised groove-hur, Bachman's sparrow, Southeastern American Kestrel, Red-cockaded woodpecker, Taper-tailed darter, Small ladies' tresses, Southeastern fox squirrel, Florida hasteola, and American alligator were found on, or within a 1-mile distance of, the property. SHCAs were found for Florida mouse and Striped newt within a 1-mile distance of, the property. Enclosed are 8.5 x 11 maps prioritized SHCA's, 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

Patti Anderson
Page 2
October 14, 2022

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.

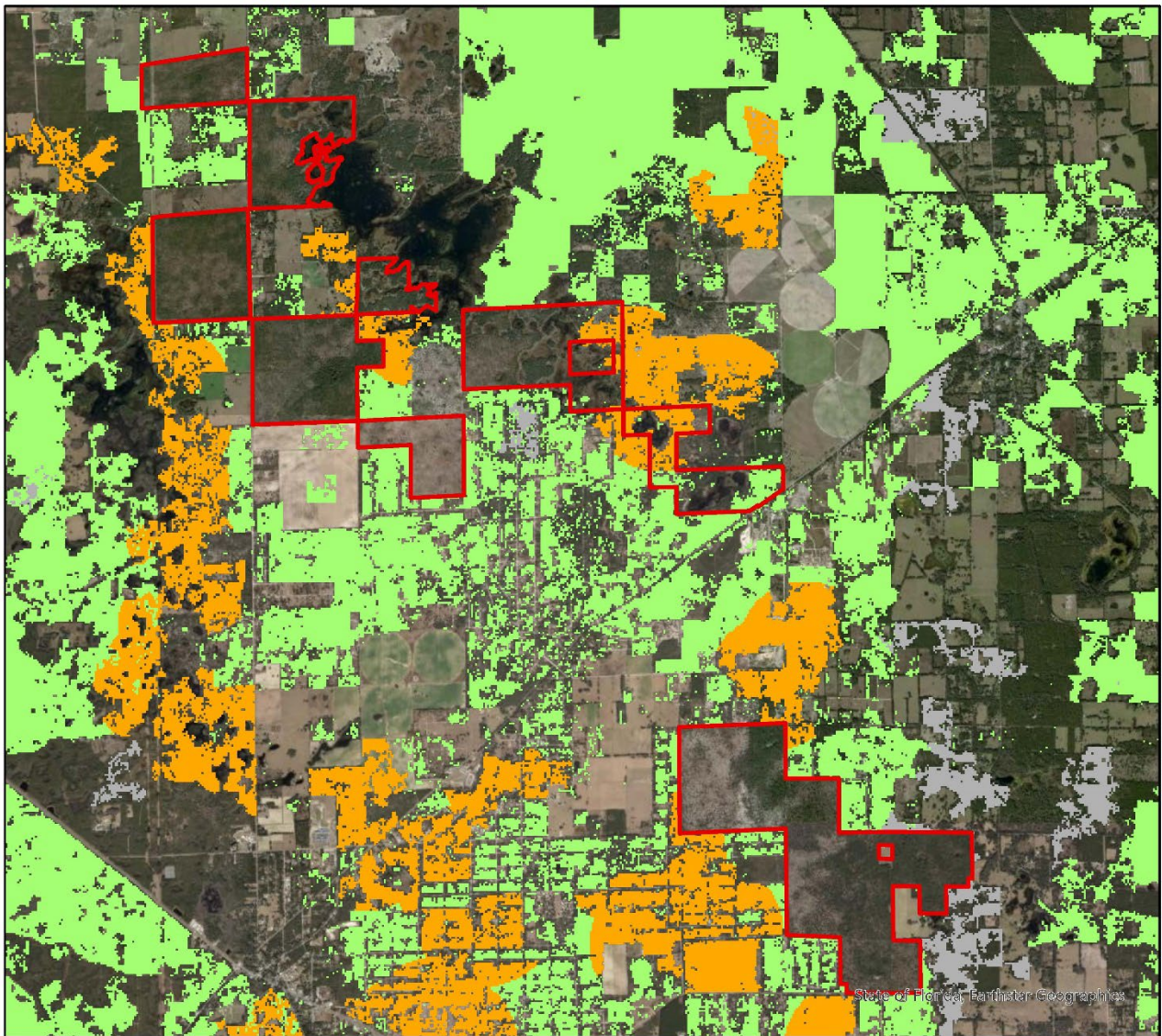
Because FNAI is funded to provide information to public agencies only, you may be required to pay a fee for this information. County-wide listed species information can be located at their website (<http://www.fnai.org>).

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 (727) 896-8626 or gisrequests@myfwc.com.

Sincerely,

A handwritten signature in cursive script that reads "Julia Davis".

Julia Davis
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) 896-8626



Prioritized SHCA's



 Approximate site boundary

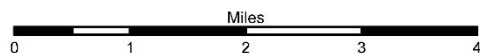


Goethe State Forest

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.

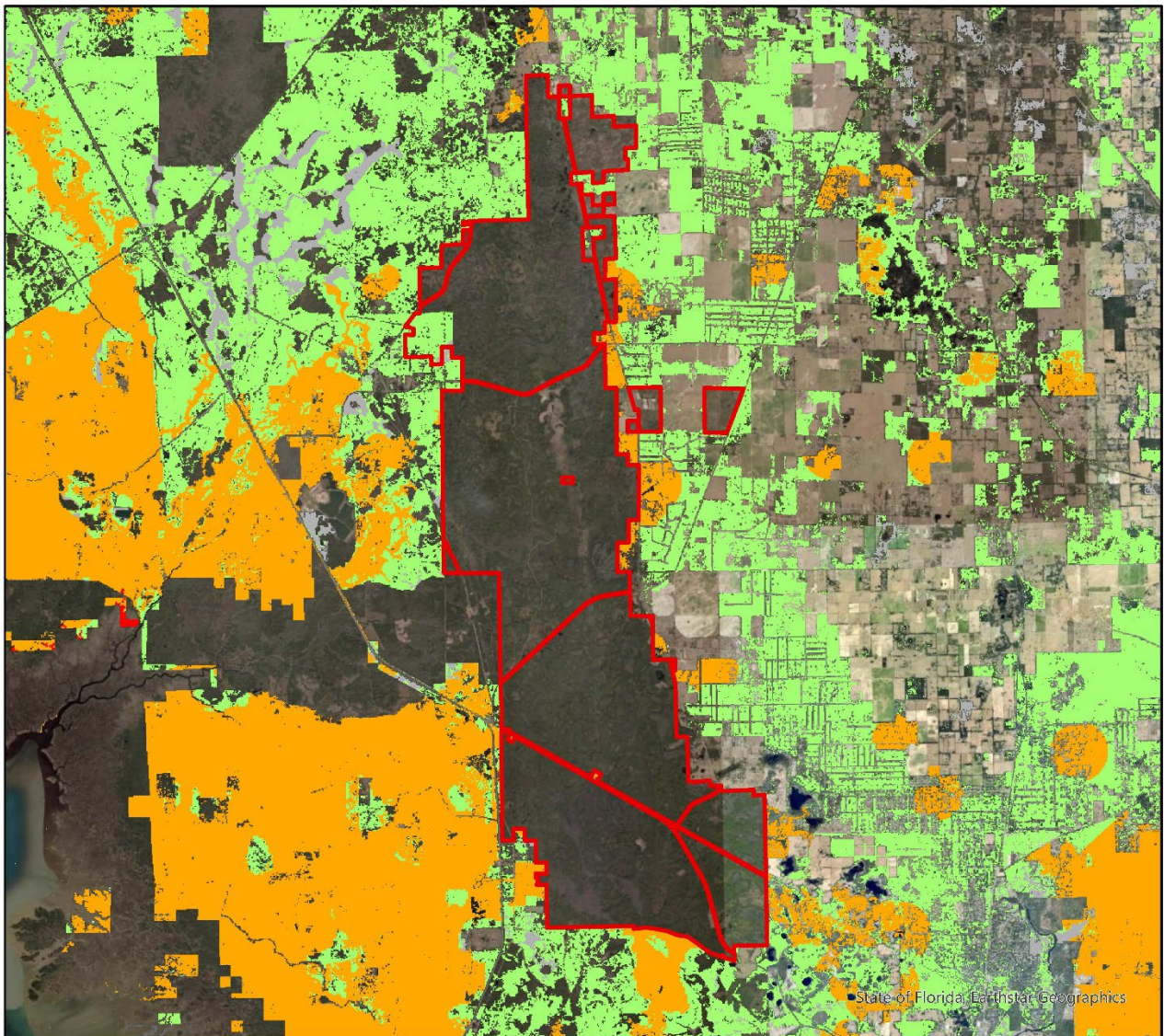


Florida Fish and Wildlife
Conservation Commission
MyFWC.com



FWC ID: 2022_6570

10/14/2022



Prioritized SHCA's



 Approximate site boundary

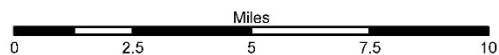


Goethe State Forest

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.

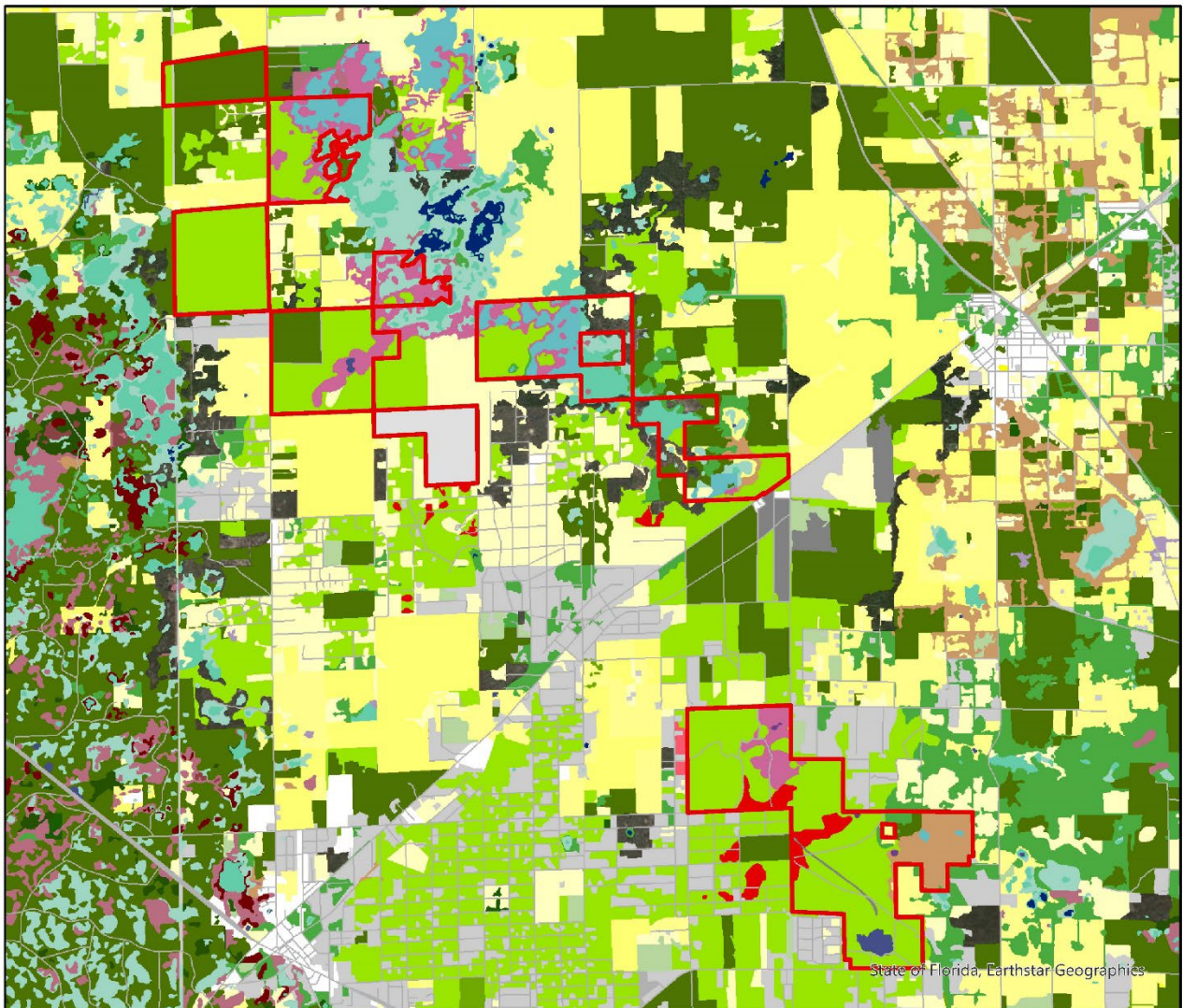


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Cooperative Land Cover -- State Classes



Goethe State Forest

 Approximate site boundary

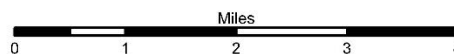
- 1110 - Hardwood Forested Uplands
- 1120 - Mesic Hammock
- 1150 - Xeric Hammock
- 1200 - High Pine and Scrub
- 1210 - Scrub
- 1240 - Sandhill
- 1311 - Mesic Flatwoods
- 1312 - Scrubby Flatwoods
- 1400 - Mixed Hardwood-Coniferous
- 1500 - Shrub and Brushland
- 1700 - Barren and Outcrop Communities
- 1800 - Cultural - Terrestrial
- 1821 - Low Intensity Urban
- 1822 - High Intensity Urban

- 1830 - Rural
- 18331 - Cropland/Pasture
- 183313 - Improved Pasture
- 18332 - Orchards/Groves
- 18333 - Tree Plantations
- 18334 - Vineyard and Nurseries
- 18335 - Other Agriculture
- 1840 - Transportation
- 1860 - Utilities
- 1870 - Extractive
- 1880 - Bare Soil/Clear Cut
- 2100 - Freshwater Non-Forested Wetlands
- 2110 - Prairies and Bogs
- 2120 - Marshes

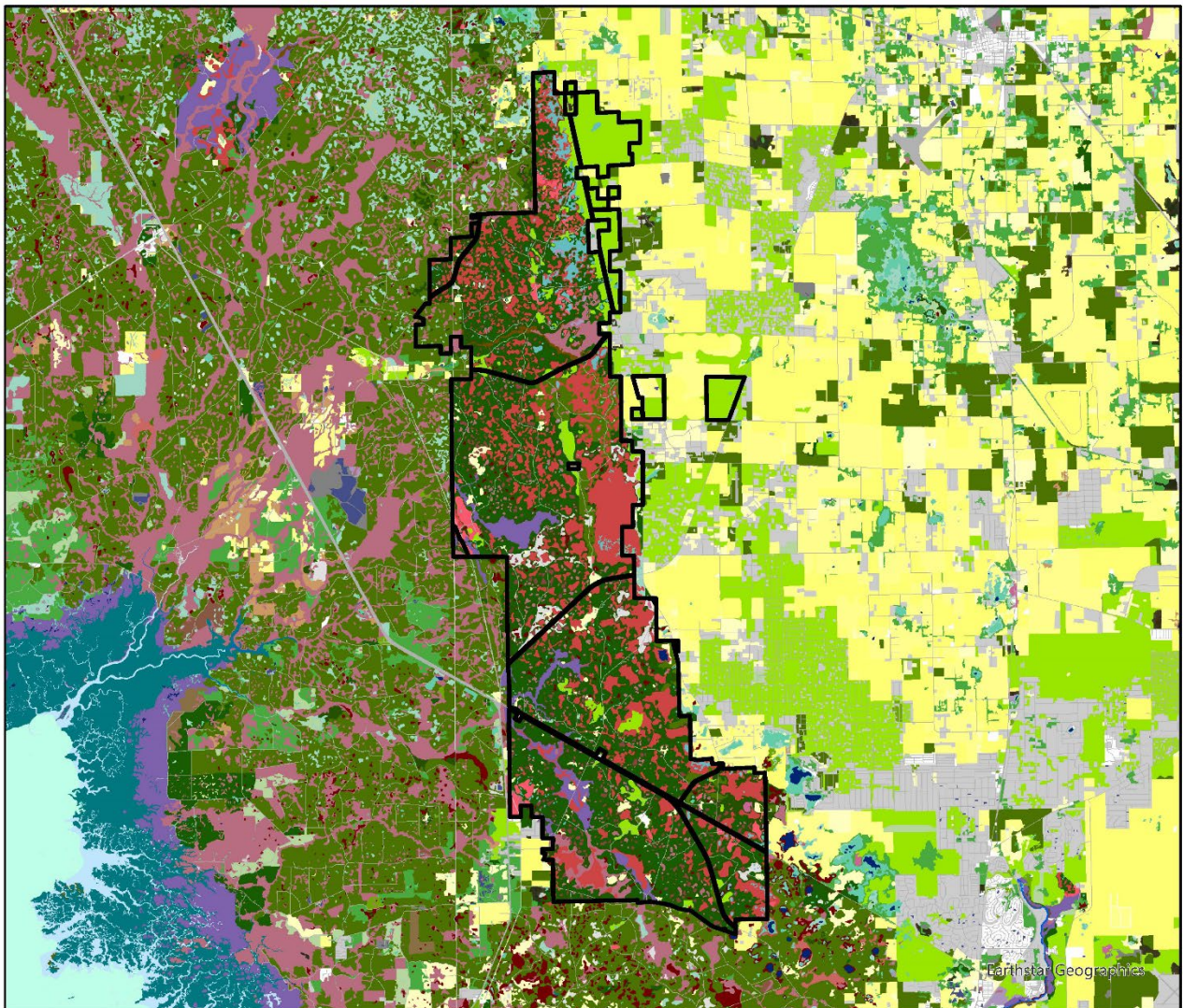
- 2121 - Isolated Freshwater Marsh
- 2200 - Freshwater Forested Wetlands
- 2211 - Cypress
- 22131 - Dome Swamp
- 2221 - Wet Flatwoods
- 3100 - Natural Lakes and Ponds
- 3200 - Cultural - Lacustrine



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Cooperative Land Cover -- State Classes

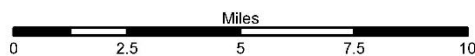


Goethe State Forest

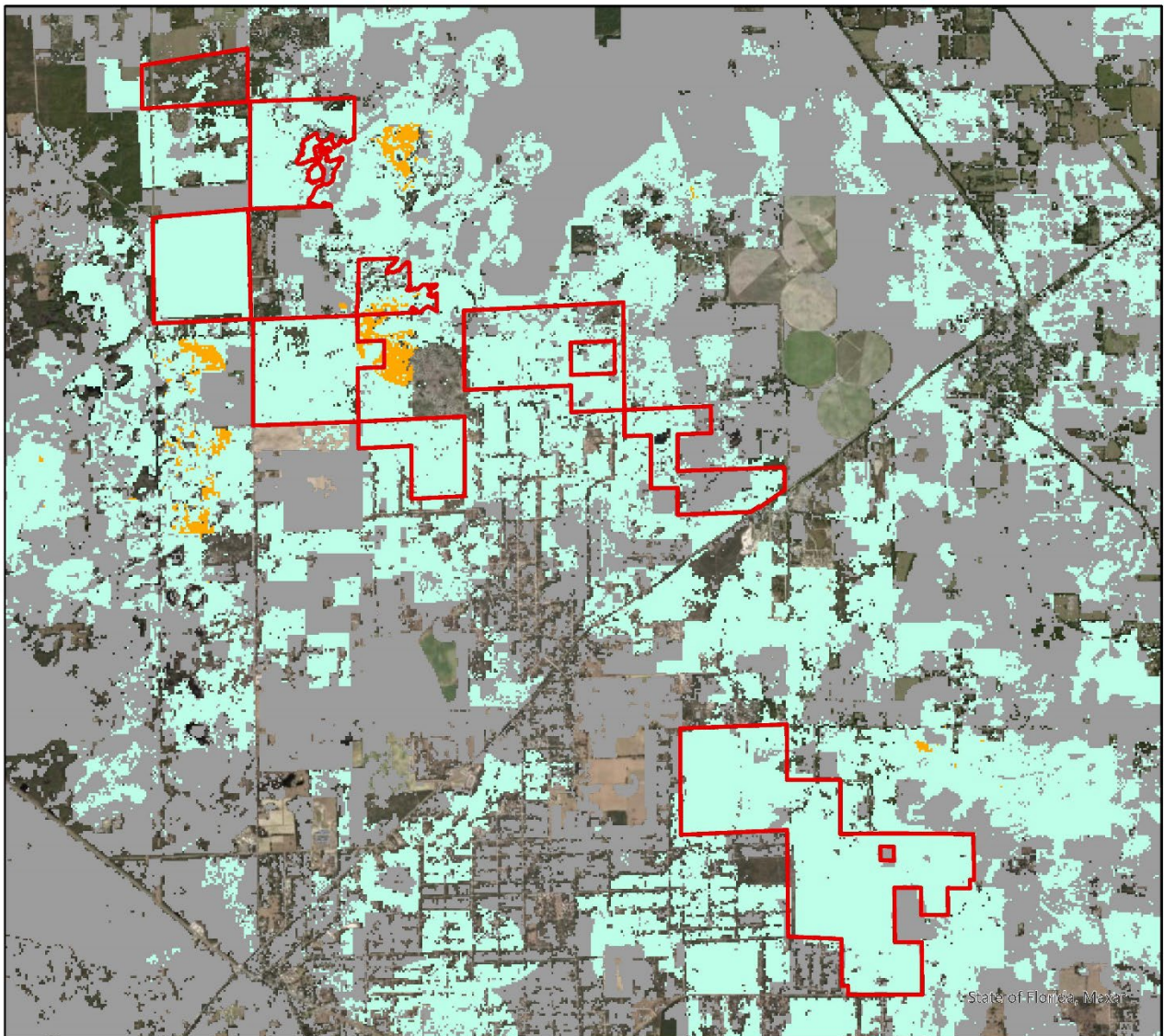
Approximate site boundary		
1110 - Hardwood Forested Uplands	183313 - Improved Pasture	2200 - Freshwater Forested Wetlands
1120 - Mesic Hammock	18332 - Orchards/Groves	2211 - Cypress
1150 - Xeric Hammock	18333 - Tree Plantations	22131 - Dome Swamp
1200 - High Pine and Scrub	18334 - Vineyard and Nurseries	22132 - Basin Swamp
1240 - Sandhill	18335 - Other Agriculture	2215 - Floodplain Swamp
1311 - Mesic Flatwoods	1840 - Transportation	2220 - Other Coniferous Wetlands
1312 - Scrubby Flatwoods	1850 - Communication	2221 - Wet Flatwoods
1400 - Mixed Hardwood-Coniferous	1860 - Utilities	2230 - Atlantic White Cedar
1500 - Shrub and Brushland	1870 - Extractive	2231 - Baygall
1800 - Cultural - Terrestrial	1880 - Bare Soil/Clear Cut	2232 - Hydric Hammock
1821 - Low Intensity Urban	2100 - Freshwater Non-Forested Wetlands	2300 - Non-vegetated Wetland
1822 - High Intensity Urban	2110 - Prairies and Bogs	3100 - Natural Lakes and Ponds
1830 - Rural	2120 - Marshes	3200 - Cultural - Lacustrine
18331 - Cropland/Pasture	2121 - Isolated Freshwater Marsh	4100 - Natural Rivers and Streams
		5000 - Estuarine
		5220 - Tidal Flat
		5240 - Salt Marsh
		5250 - Mangrove Swamp
		6000 - Marine



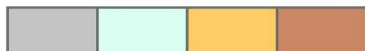
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Species Richness



1-3
4-6
7-9
10-13

 Approximate site boundary



Goethe 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.

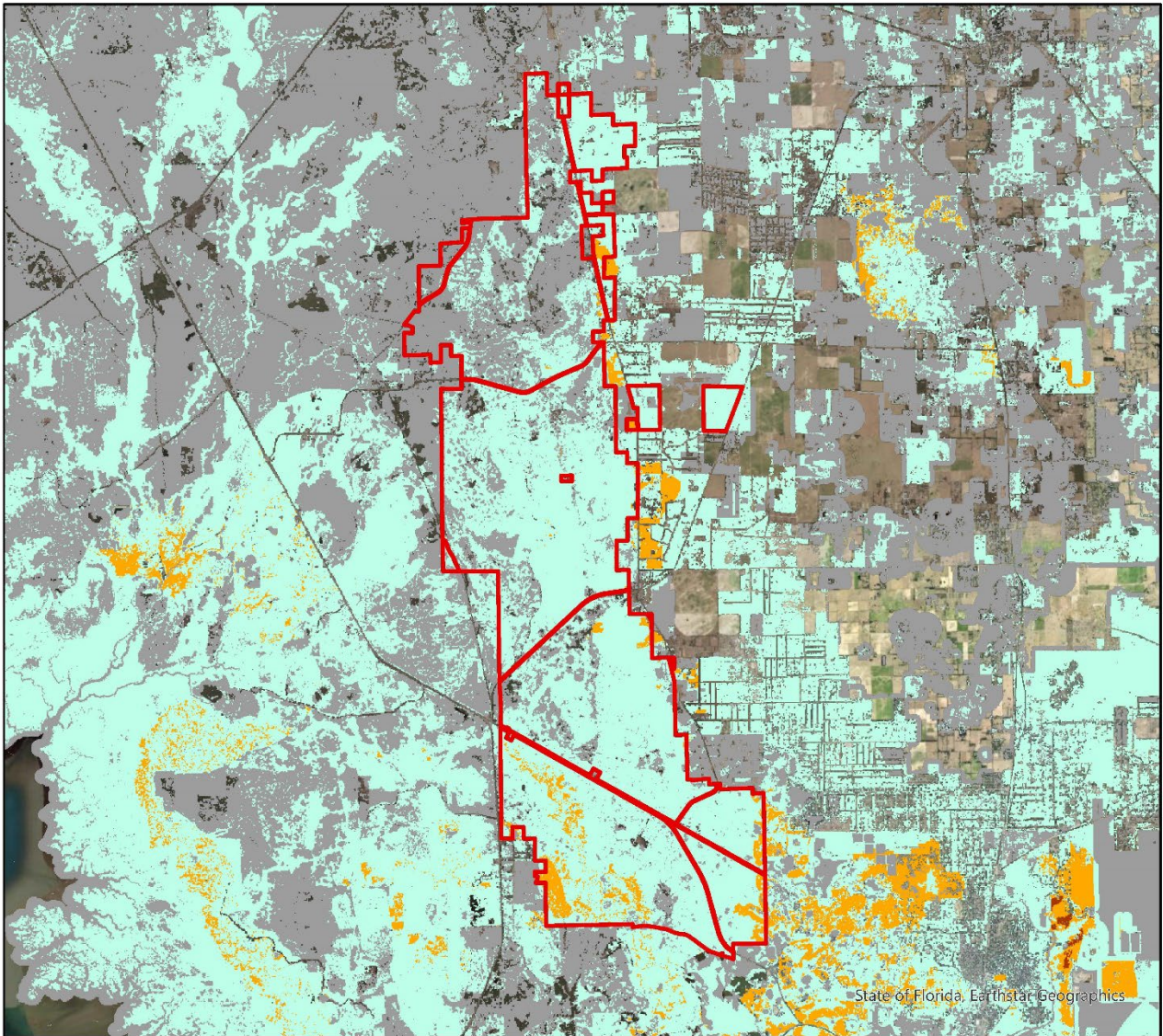


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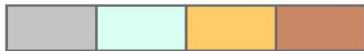


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Species Richness



1-3
4-6
7-9
10-13



Approximate site boundary

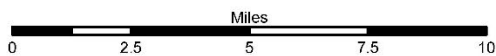


Goethe State Forest

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.

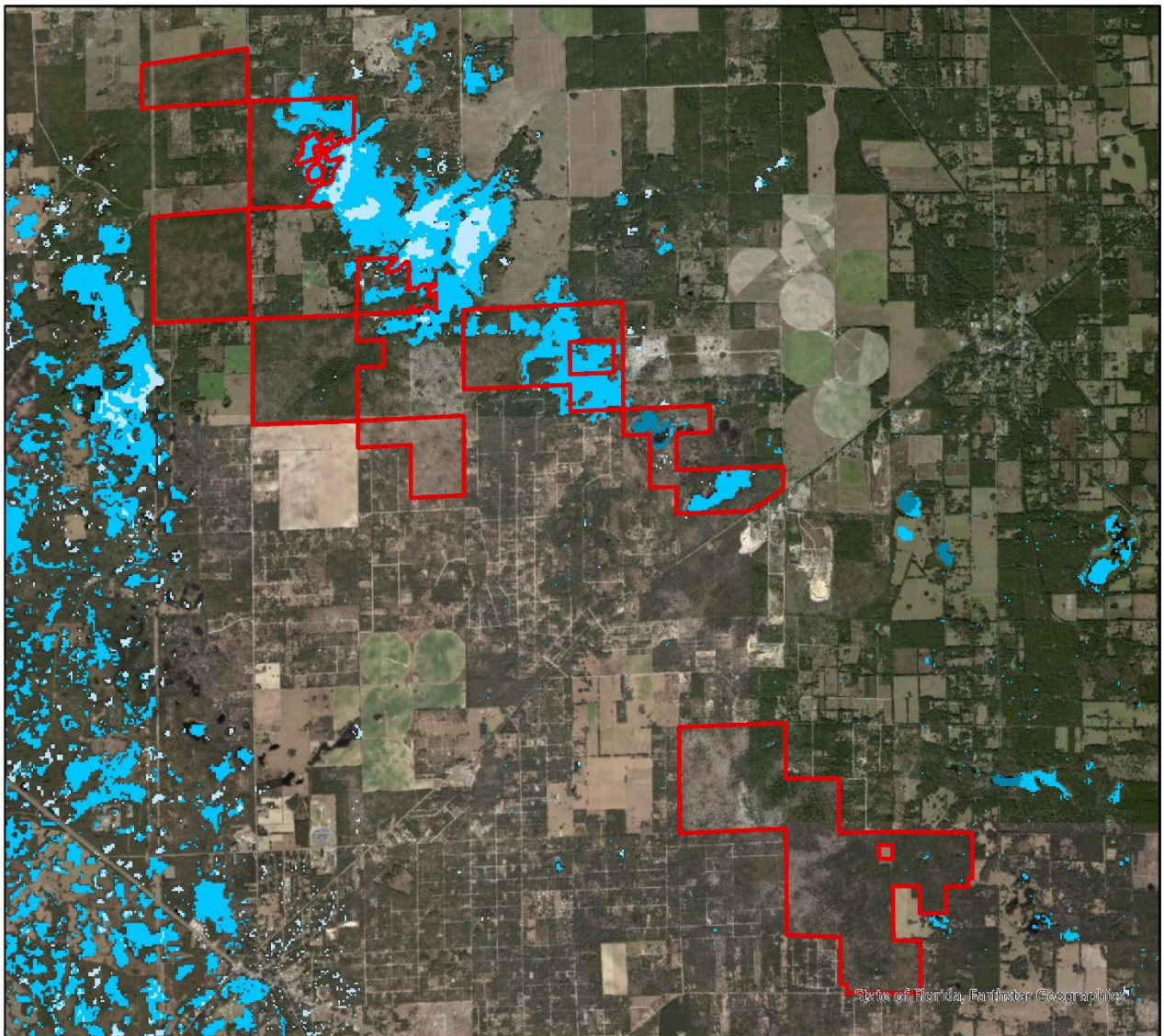


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Priority Wetlands

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

Approximate site boundary

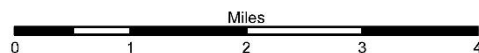


Goethe State Forest

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.

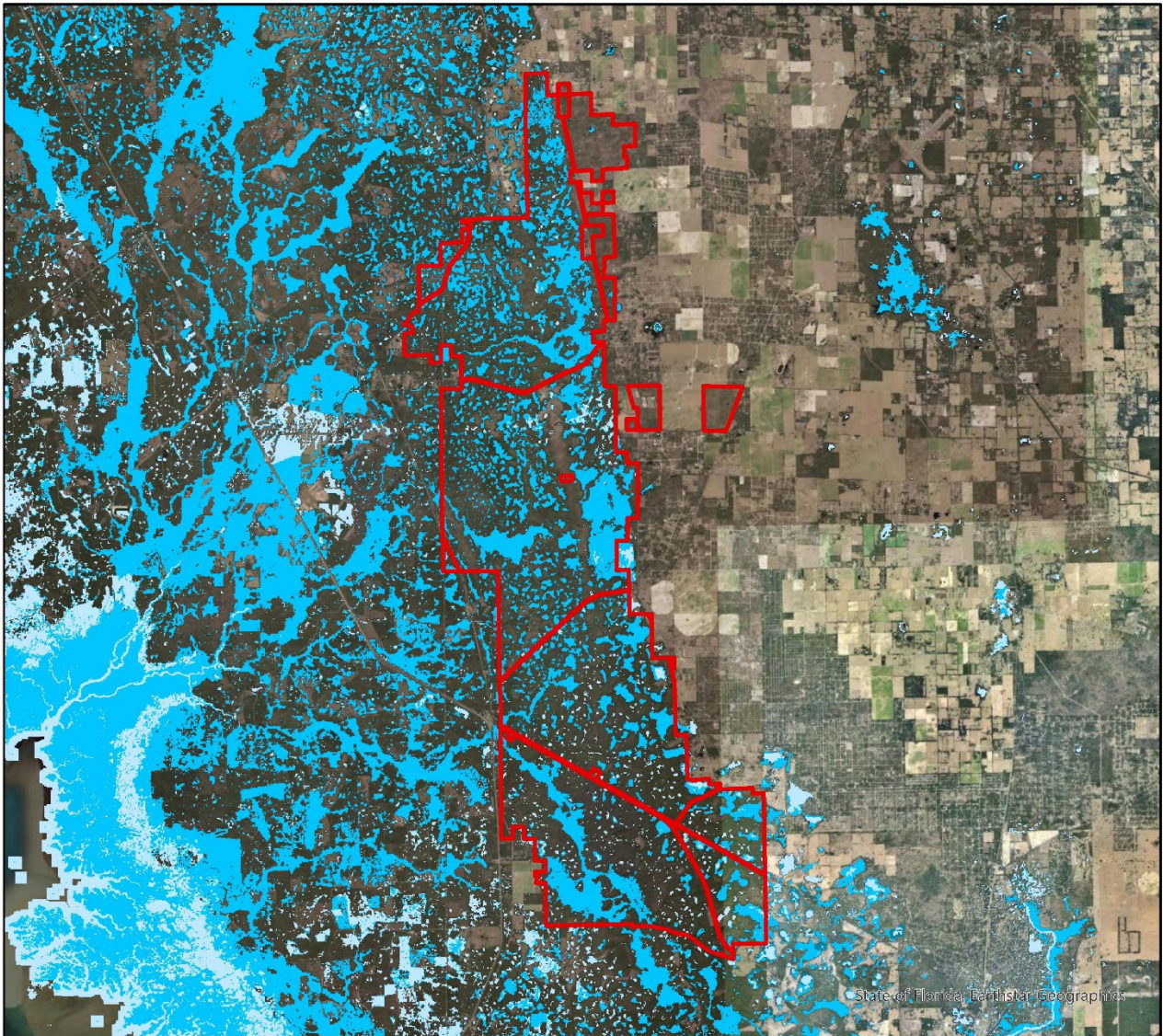


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FWC ID: 2022_6570

10/14/2022



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

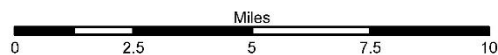


Goethe State Forest

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Exhibit N

GSF Ten-Year Fire History

Goethe State Forest Burn Acres by Fiscal Year



Exhibit O

Invasive Species Map (FNAI)



Florida Forest Service

Goethe State Forest

Non-Native Invasive Species Map

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

DISCLAIMER:
This map was prepared by the Florida Forest Service, and the Florida Department of Natural Resources, and is provided for informational purposes only. It is not intended to be used for any other purpose, and the user assumes all liability for any use of this map. The Florida Forest Service and the Florida Department of Natural Resources are not responsible for any errors or omissions in this map.

Revised: June 2023
Map Month/Year: June 2023

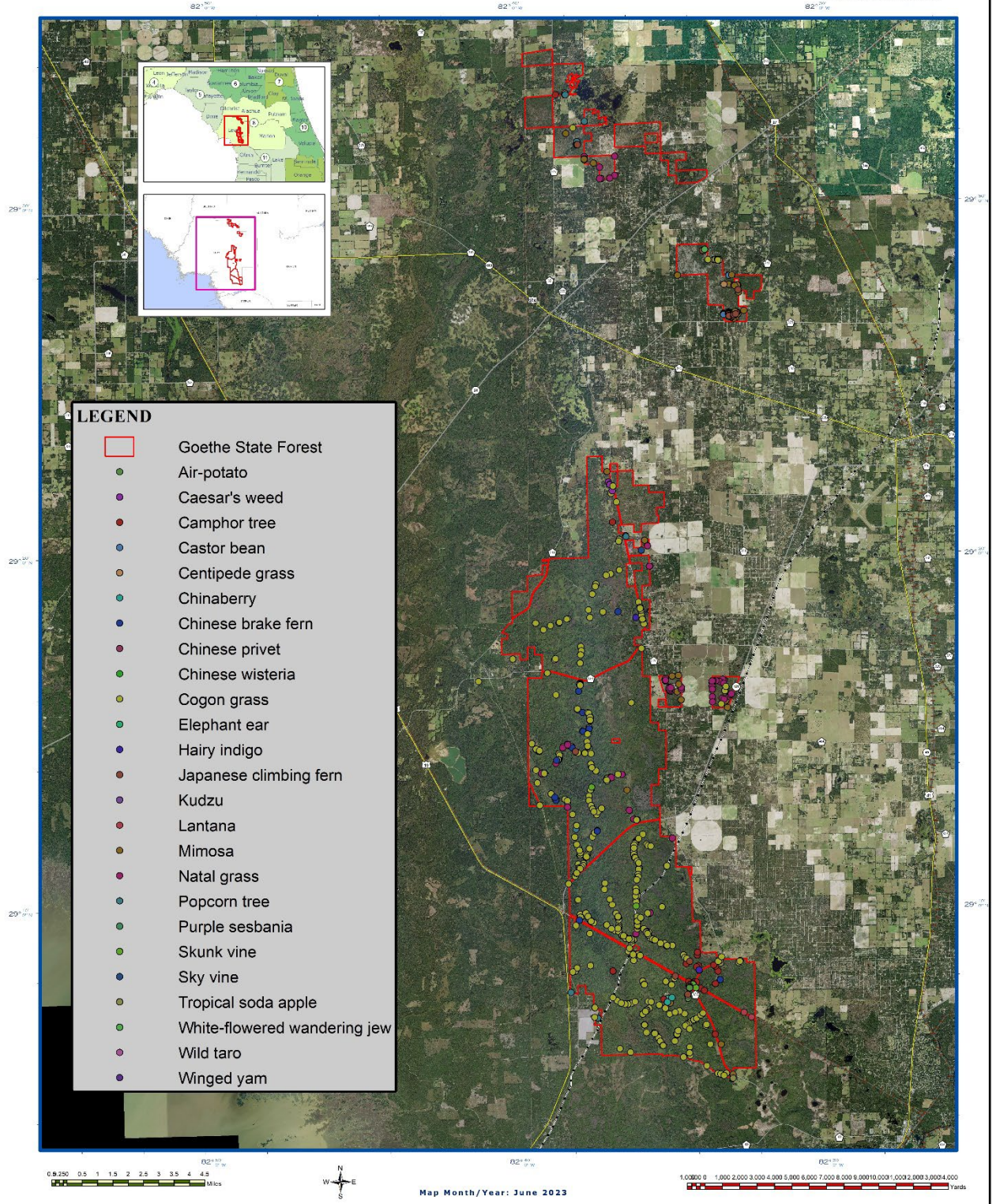


Exhibit P

Current FNAI Natural Communities Map



Current Natural Communities Map

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

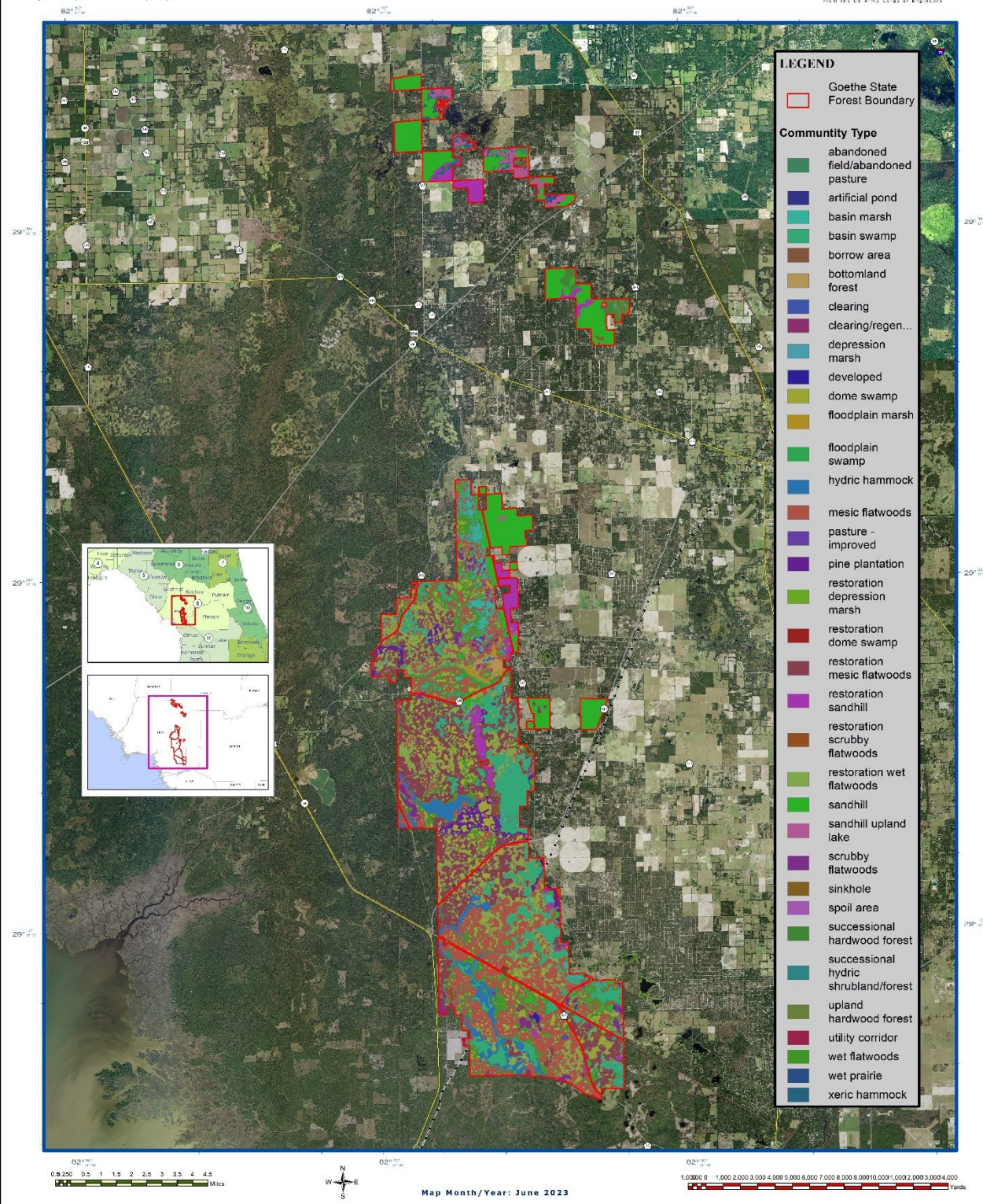
[illegible]

Exhibit Q

Historic FNAI Natural Communities Map



Florida Forest Service

Goethe State Forest

Historic Natural Communities Map

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

DISCLAIMER:
This map was prepared by the Florida Forest Service, using data provided by the Florida Department of Transportation (FDOT) and the United States Geological Survey (USGS). The data was collected from 1990 to 2010. The map is intended for informational purposes only and should not be used for legal or regulatory purposes. The Florida Forest Service is not responsible for any errors or omissions on this map.

Revised State Boundary courtesy of
the Florida Department of Transportation
from the US Army Corps of Engineers

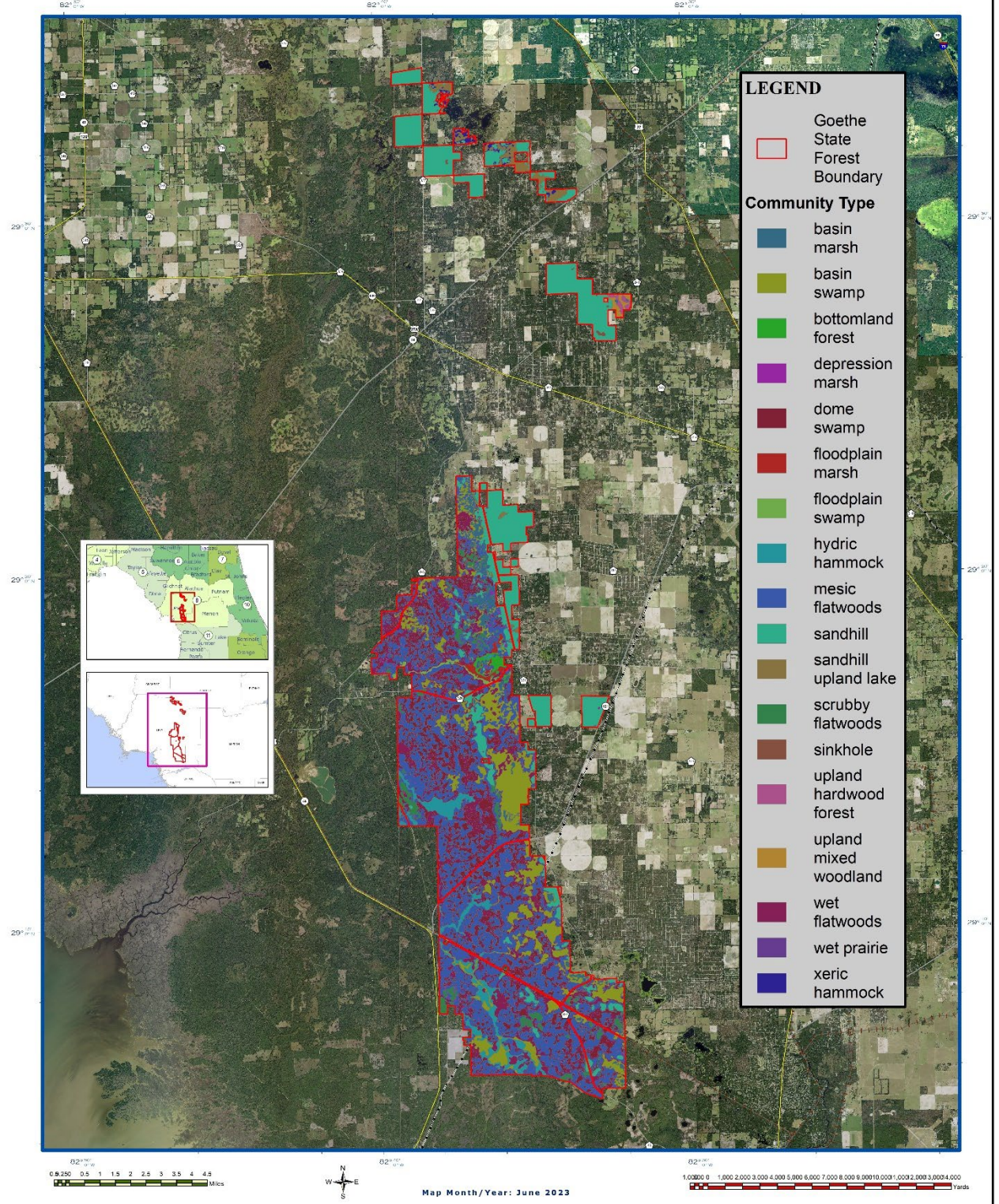


Exhibit R

Land Management Reviews (2018 & 2023)

2018 Land Management Review Team Report for Goethe 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 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.

1.1. Property Reviewed in this Report

Name of Site: Goethe State Forest

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

Acres: 51,312

County: Levy & Alachua

Purpose(s) for Acquisition: to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

Acquisition Program(s): P2000/Florida Forever

Original Acquisition Date: 9/28/92

Area Reviewed: Entire Property

Last Management Plan Approval Date: 6/25/13

Review Date: 8/8/18

Agency Manager and Key Staff Present:

- Bobby Cahal, Manager
- Charlie Peterson
- Cecilia Lepa
- Ernie Ash
- Ben Beauchamp
- Robert Johnston
- Gary Kreitzer
- Scott Scarbrough

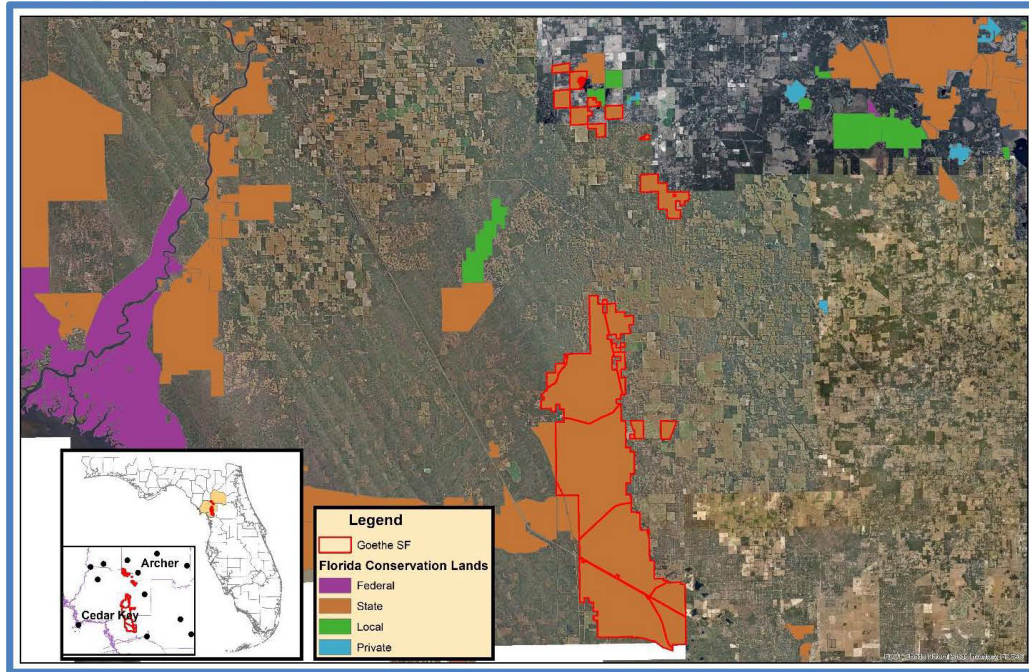
Review Team Members Present (voting)

- Dan Pearson, DRP District
- Steven Keith, Local Gov't.
- Scotland Talley, FWC
- DEP District, None
- Heather Schmiede, FFS
- August Fox, SWFWMD
- Athena Philips, Cons. Organization
- Private Land Manager, None

Other Non-Team Members Present (attending)

- Keith Singleton, DEP/DSL

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	4.51	4.36
Prescribed Fire / Habitat Restoration	4.09	3.99
Hydrology	3.57	3.42
Imperiled Species	4.44	4.62
Exotic / Invasive Species	3.88	3.67
Cultural Resources	4.42	4.50
Public Access / Education / Law Enforcement	4.05	3.68
Infrastructure / Equipment / Staffing	4.31	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 Florida Forest Service (FFS) for red-cockaded woodpecker and gopher tortoise population monitoring and habitat restoration efforts. (6+, 0-)
2. The team commends the FFS for increased numbers of acres burned since the last land management review. (6+, 0-)
3. The team commends the FFS for good job with sandhill natural community enhancements. (6+, 0-)
4. The team commends the FFS for providing well maintained trailhead and recreation facilities. (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 the FFS continue to preferentially remove offsite slash pines in timber sales, and continue to increase longleaf regeneration in mixed stands. (6+, 0-)

Managing Agency Response: The strategy has been to favor retaining longleaf pine in our timber operations on applicable sites, and we will continue to do so on a site-by-site basis.

2. The team recommends that the FFS look into the possibility of increased growing season burning in flatwoods communities. (6+, 0-)

Managing Agency Response: It has always been our goal to increase growing season burns in the flatwoods, and we will continue trying to meet the objective. However, it will continue to be challenging to achieve the necessary burn frequency to allow for summer burning.

3. The team recommends that the FFS reestablish a biologist position assigned to Goethe State Forest. (6+, 0-)

Managing Agency Response: This has already been done.

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, dome swamp, sandhill, marsh lake, floodplain swamp, scrub, blackwater stream, scrubby flatwoods, depression marsh, wet flatwoods, hydric hammock, basin marsh, upland hardwood forest and xeric hammock.
2. Listed species, plants and animals in general, and specifically red-cockaded woodpecker.
3. Natural resource survey/monitoring resources, specifically listed species or their habitat monitoring, fire effects monitoring, and invasive species survey and monitoring.
4. Cultural resources, specifically protection and preservation.
5. Resource management (prescribed fire), specifically area being burned, frequency and quality.

6. Forest management, specifically timber inventory, timber harvesting, reforestation/afforestation and site preparation.
7. Non-native, invasive, and problem species, specifically prevention and control of plants, and prevention of animals.
8. Hydrologic/geologic function, specifically roads and culverts.
9. Resource protection, specifically boundary survey, gates and fencing, signage and law enforcement presence.
10. Public access, specifically roads and parking.
11. Environmental education and outreach, specifically interpretive facilities and signs, and recreational opportunities.
12. 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 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	5		4	4	5	5			4.60
Dome Swamp	I.A.2	5	5	4	5	5	5			4.83
Sandhill	I.A.3	5	5	4	4	5	5			4.67
Marsh Lake	I.A.4	5	5	4	5	5	5			4.83
Floodplain Swamp	I.A.5	5	5	4	5	5	5			4.83
Scrub	I.A.6	5	x	4	x	5	5			4.75
Blackwater Stream	I.A.7	5	5	4	x	5	5			4.80
Scrubby Flatwoods	I.A.8	5	5	4	5	5	5			4.83
Depression Marsh	I.A.9	5	5	4	5	5	5			4.83
Wet Flatwoods	I.A.10	5	5	4	4	5	5			4.67
Hydric Hammock	I.A.11	5	5	4	5	5	5			4.83
Basin Marsh	I.A.12	5	5	4	5	5	5			4.83
Upland Hardwood Forest	I.A.13	5	5	4	x	5	5			4.80
Xeric Hammock	I.A.14	5	x	4	x	5	5			4.75
Natural Communities Average Score										4.78
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	4	5	3	5	4			4.33

Red-cockaded Woodpecker	I.B.1.a	5	5	5	5	5	5			5.00
Plants	I.B.2	4	5	x	3	4	4			4.00
Listed Species Average Score										4.44
Natural Resources Survey/Monitoring Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	4	4	5	4	5			4.50
Other non-game species or their habitat monitoring	I.C.3	2	4	3	3	3	5			3.33
Fire effects monitoring	I.C.4	4	4	4	4	4	4			4.00
Other habitat management effects monitoring	I.C.5	3	4	4	3	3	3			3.33
Invasive species survey / monitoring	I.C.6	4	4	3	4	5	5			4.17
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	3	5	5	4	4			4.17
Protection and preservation	II.B	5	4	5	5	4	5			4.67
Cultural Resources Average Score										4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A1	5	5	5	4	5	5			4.83
Frequency	III.A.2	4	5	5	4	5	4			4.50
Quality	III.A.3	5	5	5	5	4	5			4.83
Resource Management, Prescribed Fire Average Score										4.72
Restoration (III.B)										
Watermelon Pond Site (Plantation to Sandhill)	III.B.1	3	x	4	x	x	4			3.67
Wolf Arbor (Plantation to Sandhill)	III.B.2	3	x	2	x	4	4			3.25
Restoration Average Score										3.46
Forest Management (III.C)										
Timber Inventory	III.C.1	5	4	4	5	5	4			4.50
Timber Harvesting	III.C.2	4	4	4	5	5	4			4.33
Reforestation/Afforestation	III.C.3	4	4	4	4	5	3			4.00
Site Preparation	III.C.4	4	4	4	4	5	4			4.17
Forest Management Average Score										4.25
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	4	4	4	4	5			4.17
prevention - animals	III.D.1.b	4	4	4	4	4	4			4.00
prevention - pests/pathogens	III.D.1.c	3	4	4	4		4			3.80
Control										
control - plants	III.D.2.a	4	4	4	4	4	5			4.17
control - animals	III.D.2.b	3	4	1	4	4	4			3.33
control - pest/pathogens	III.D.2.c	3	4	4	4		4			3.80
Non-Native, Invasive & Problem Species Average Score										3.88
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	4	4	4	4	4			4.00
Ditches	III.E.1.b	3	4	4	4	4	4			3.83
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.92

Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	3	3	3	4	4	4			3.50
Ground water quantity	III.E.2.b	4	4	3	4	3	4			3.67
Ground Water Monitoring Average Score										3.58
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	3	3	3	4	x	3			3.20
Surface water quantity	III.F.3.b	3	3	3	4	x	3			3.20
Surface Water Monitoring Average Score										3.20
Resource Protection (III.F)										
Boundary survey	III.F.1	5	4	4	4	3	4			4.00
Gates & fencing	III.F.2	5	4	4	4	4	4			4.17
Signage	III.F.3	5	5	4	4	4	4			4.33
Law enforcement presence	III.F.4	5	4	4	4	3	4			4.00
Resource Protection Average Score										4.13
Adjacent Property Concerns (III.G)										
Land Use										
DOT Future Road Corridor	III.G.1.a	5	3	3	3	3	3			3.33
Inholdings/additions	III.G.2	5	4	3	4	3	4			3.83
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	5	4	4	5	5			4.67
Parking	IV.1.b	4	5	4	4	5	4			4.33
Environmental Education & Outreach										
Wildlife	IV.2.a	3	4	3	4	3	4			3.50
Invasive Species	IV.2.b	2	4	3	4	5	4			3.67
Habitat Management Activities	IV.2.c	3	4	3	4	4	4			3.67
Interpretive facilities and signs	IV.3	4	5	4	4	5	4			4.33
Recreational Opportunities	IV.4	5	4	3	4	5	4			4.17
Management of Visitor Impacts	IV.5	3	4	3	4	3	4			3.50
Public Access & Education Average Score										3.98
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	5	4	4	4	4	4			4.17
Sanitary facilities	V.1.b	5	5	4	4	4	4			4.33
Infrastructure										
Buildings	V.2.a	5	5	5	4	4	4			4.50
Equipment	V.2.b	5	4	5	4	4	4			4.33
Staff	V.3	5	4	5	4	4	4			4.33
Funding	V.4	4	4	5	4	4	4			4.17
Management Resources Average Score										4.31

Color Code:

Excellent	Above Average	Below Average	Poor
-----------	---------------	---------------	------

Missing
VoteInsufficient
InformationSee
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:

1. *Restoration, specifically Wolf Arbor (Plantation to Sandhill), received a below average score. This is an indication that the management plan does not sufficiently address restoration.*

Managing Agency Response: In the next Resource Management Plan, we will discuss steps being taken to restore the sandhill communities in the Wolf Arbor Tract. Since 2012, management has restored 150 acres of the sandhill in Wolf Arbor. In December 2018, 360 acres will be planted, and the remaining 140 acres of off-site slash will be removed in the 2019-2020 fiscal year. Additional planting will follow the year after the sale is complete.

2. *Adjacent Property Concerns, specifically DOT Future Road Corridor, received a below average score. This is an indication that the management plan does not sufficiently address adjacent property concerns.*

Managing Agency Response: In the next Resource Management Plan, we will discuss future road developments that might threaten Goethe State Forest.

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	4	5	4	4	5	4			4.33
Dome Swamp	I.A.2	4	5	4	4	5	4			4.33
Sandhill	I.A.3	4	5	4	4	5	4			4.33
Marsh Lake	I.A.4	4	5	4	4	5	4			4.33
Floodplain Swamp	I.A.5	4	5	4	4	4	4			4.17
Scrub	I.A.6	4	5	4	4	5	4			4.33
Blackwater Stream	I.A.7	4	5	4	4	4	3			4.00

Scrubby Flatwoods	I.A.8	4	5	4	4	5	4			4.33
Depression Marsh	I.A.9	4	5	4	4	5	4			4.33
Wet Flatwoods	I.A.10	4	5	4	4	5	4			4.33
Hydric Hammock	I.A.11	4	5	4	4	4	4			4.17
Basin Marsh	I.A.12	4	5	4	4	5	4			4.33
Upland Hardwood Forest	I.A.13	4	5	4	4	4	4			4.17
Xeric Hammock	I.A.14	1	3	4	4	3	3			3.00
Natural Communities Average Score										4.18
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	5	5	5	4			4.83
Red-cockaded Woodpecker	I.B.1.a	5	5	5	5	5	4			4.83
Plants	I.B.2	4	5		5	3	4			4.20
Listed Species Average Score										4.62
Natural Resources Survey/Monitoring Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	4	4	4	3	5			4.17
Other non-game species or their habitat monitoring	I.C.3	3	4	3	3	2	4			3.17
Fire effects monitoring	I.C.4	4	3	4	4	2	4			3.50
Other habitat management effects monitoring	I.C.5	3	3	4	3	2	3			3.00
Invasive species survey / monitoring	I.C.6	4	3	3	4	5	4			3.83
Cultural Resources (Archeological & Historic sites) (II.A,II.B)										
Cultural Res. Survey	II.A	5	4	5	4	5	4			4.50
Protection and preservation	II.B	5	4	5	4	5	4			4.50
Cultural Resources Average Score										4.50
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	5	5	4	5	5			4.67
Frequency	III.A.2	4	5	5	4	5	5			4.67
Quality	III.A.3	4	4	5	4	5	4			4.33
Resource Management, Prescribed Fire Average Score										4.56
Restoration (III.B)										
Watermelon Pond Site (Plantation to Sandhill)	III.B.1	5	4	4	2	5	4			4.00
Wolf Arbor (Plantation to Sandhill)	III.B.2	1	4	2	2	4	4			2.83
Restoration Average Score										3.42
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5	5			5.00
Timber Harvesting	III.C.2	4	4	5	5	5	4			4.50
Reforestation/Afforestation	III.C.3	4	4	5	5	3	5			4.33
Site Preparation	III.C.4	4	4	5	5	3	5			4.33
Forest Management Average Score										4.54
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.E.1.a	4	5	3	4	5	4			4.17

prevention - animals	III.E.1.b	4	4	2	4	2	4			3.33
prevention - pests/pathogens	III.E.1.c	3	4	3	4	3	4			3.50
Control										
control - plants	III.E.2.a	4		4	4	5	5			4.40
control - animals	III.E.2.b	3		1	4	2	5			3.00
control - pest/pathogens	III.E.2.c	3		3	4	3	5			3.60
Non-Native, Invasive & Problem Species Average Score										3.67
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.F.1.a	4	4	4	4	2	4			3.67
Ditches	III.F.1.b	3	4	4	4	2	4			3.50
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.58
Ground Water Monitoring (III.E.2)										
Ground water quality	III.F.2.a	3	4	3	4	1	4			3.17
Ground water quantity	III.F.2.b	4	4	3	4	2	4			3.50
Ground Water Monitoring Average Score										3.33
Surface Water Monitoring (III.E.3)										
Surface water quality	III.F.3.a	3	4	3	4	2	4			3.33
Surface water quantity	III.F.3.b	3	4	3	4	2	4			3.33
Surface Water Monitoring Average Score										3.33
Resource Protection (III.F)										
Boundary survey	III.G.1	5	4	3	4	2	4			3.67
Gates & fencing	III.G.2	5	4	3	4	1	4			3.50
Signage	III.G.3	4	4	3	4	1	4			3.33
Law enforcement presence	III.G.4	4	3	3	4	2	4			3.33
Resource Protection Average Score										3.46
Adjacent Property Concerns (III.G)										
Land Use										
DOT Future Road Corridor	III.H.1.a	1	1	3	1	1	2			1.50
Inholdings/additions	III.H.2	5	3	3	4	1	4			3.33
Discussion of Potential Surplus Land Determination	III.H.3	4	4	3	4	2	4			3.50
Surplus Lands Identified?	III.H.4	5	4	3	4	2	4			3.67
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	5	4	4	5	5			4.67
Parking	IV.1.b	4	4	4	4	5	5			4.33
Environmental Education & Outreach										
Wildlife	IV.2.a	3	4	4	4	5	4			4.00
Invasive Species	IV.2.b	2	3	4	4	5	4			3.67
Habitat Management Activities	IV.2.c	3		3	4	4	4			3.60
Interpretive facilities and signs	IV.3	3	3	4	4	4	4			3.67
Recreational Opportunities	IV.4	4	4	3	4	4	5			4.00
Management of Visitor Impacts	IV.5	3	3	3	4	3	4			3.33

Public Access & Education Average Score											3.91
Managed Area Uses (VI.A, VI.B)											
Existing Uses											
Recreational Trails/Multi-Use Trails	VI.A.1	5	5	5	5	4	5				4.83
Primitive Camping	VI.A.2	5	5	4	5	4	5				4.67
Hunting	VI.A.3	5	5	1	5	4	5				4.17
Fishing	VI.A.4	5		1	5	4	4				3.80
Timber Management	VI.A.5	5	5	4	5	5	4				4.67
Color Code:		Excellent		Above Average		Below Average		Poor		See Appendix A for detail	
				Missing Vote		Insufficient Information					

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*

2023 Land Management Review Team Report for Goethe 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: Goethe State Forest

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

Acres: 51,312

County: Alachua and Levy

Purpose(s) for Acquisition: to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

Acquisition Program(s): P2000/Florida Forever

Original Acquisition Date: 9/28/92

Area Reviewed: Entire Property

Last Management Plan Approval Date: 6/25/13

Review Date: 8/2/23

Agency Manager and Key Staff:

- Mark Larson, Manager
- Stephen Montgomery, FFS
- Charlie Pedersen, FFS

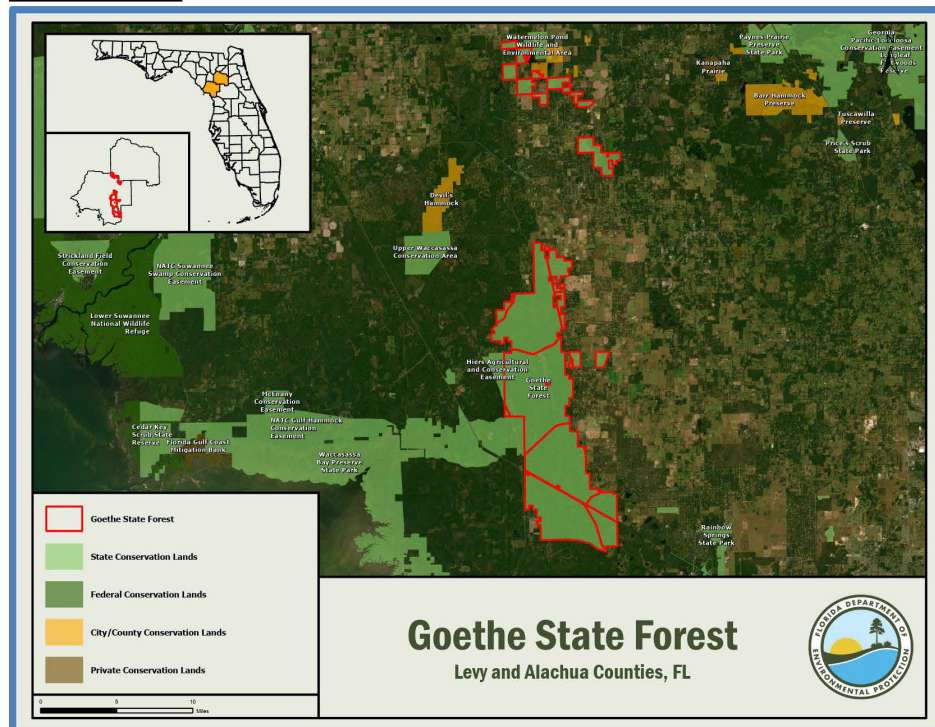
Review Team Members (voting)

- John Kilmer, DRP District
- Local Gov't., None
- Rebecca Doane, FWC
- Brandi Rickett, DEP District
- Vince Morris, FFS
- Ryan Sims, SRWMD
- Susan Carr, 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 = 5, No = 0

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

Yes = 5, 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	4.64	4.75
Prescribed Fire / Habitat Restoration	4.35	4.53
Hydrology	4.62	3.96
Imperiled Species	4.70	4.83
Exotic / Invasive Species	4.54	4.34
Cultural Resources	4.40	4.70
Public Access / Education / Law Enforcement	4.66	4.65
Infrastructure / Equipment / Staffing	4.50	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 at Goethe for proactivity and initiative to perform internal efforts of wetland restoration. (4+, 0-)
2. The team commends the FFS staff for an excellent job of red-cockaded woodpecker management, and for reaching species population goals. (4+, 0-)
3. The team commends the FFS for their invasive species control and management and mapping efforts at this forest. (4+, 0-)
4. The team commends the FFS staff for their use of targeted timber sales and biomass reduction projects to meet their management goals. (4+, 0-)
5. The team commends the staff for their job in maintaining woodpecker inhabited flatwoods in good condition. (4+, 0-)
6. The team commends the FFS staff for excellent road condition considering the wetland habitats where they occur. (4+, 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:

There were no consensus recommendations.

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 dome swamp, sandhill, sandhill upland lake, floodplain swamp, depression marsh, wet flatwoods, hydric hammock, basin marsh, upland hardwood forest, xeric hammock, basin swamp, bottomland forest, sinkhole, upland mixed woodland, and wet prairie.
2. Listed species, animals and plants in general, and specifically red-cockaded woodpecker.
3. Natural resource 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. Resource management (prescribed fire), specifically area being burned, frequency, and quality.
6. Restoration, specifically Watermelon Pond Site (Plantation to Sandhill), Wolf Arbor (Plantation to Sandhill), Wetland Restoration, and Groundcover Restoration.
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. Hydrologic/geologic function hydro-alteration, 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 inholdings and additions.
14. Public access, specifically roads, and parking.
15. Environmental education and outreach, specifically wildlife, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings, equipment, staff, and funding.
17. Short-term goals, specifically habitat restoration and improvement, public access and recreational opportunities, hydrological preservation and restoration, sustainable forest management, exotic and invasive species maintenance and control, capital facilities and infrastructure, cultural and historical resources, and imperiled species habitat maintenance.

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	3	4	4	3	5				3.80
Dome Swamp	I.A.2	4	4	5	4	4				4.20
Sandhill	I.A.3	5	5	4	4	5				4.60
Sandhill Upland Lake	I.A.4	4	5	5	4					4.50
Floodplain Swamp	I.A.5	5	5	5	4					4.75
Scrubby Flatwoods	I.A.8	3	4	5	3	4				3.80
Depression Marsh	I.A.9	5	4	5	4	4				4.40
Wet Flatwoods	I.A.10	4	4	4	4	5				4.20
Hydric Hammock	I.A.11	5	5	5	5	5				5.00
Basin Marsh	I.A.12	5	4	5	5	5				4.80
Upland Hardwood Forest	I.A.13	X	5	4	5	5				4.75
Xeric Hammock	I.A.14	5	5	4	5	5				4.80
Basin Swamp	I.A.15	4	4		5	5				4.50
Bottomland Forest	I.A.16	5	5		5	5				5.00
Floodplain Marsh	I.A.17	3	4		3	5				3.75
Sinkhole	I.A.18	X	4		5	5				4.67
Upland Mixed Woodland	I.A.19	X	4		4	5				4.33
Wet Prairie	I.A.20	X	4		3	5				4.00
Natural Communities Average Score										4.44
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5		5	4				4.50
Red-cockaded Woodpecker	I.B.1.a	5	5	5	5	5				5.00
Plants	I.B.2	4	4	5	5	5				4.60
Listed Species Average Score										4.70
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5				5.00
Other non-game species or their habitat monitoring	I.C.3	4	4	5	3	5				4.20
Fire effects monitoring	I.C.4	5	5	5	4	5				4.80
Other habitat management effects monitoring	I.C.5	4	5	5	3	5				4.40
Invasive species survey / monitoring	I.C.6	5	5	4	4	5				4.60
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	2	4	5	5	5				4.20
Protection and preservation	II.B	3	5	5	5	5				4.60
Cultural Resources Average Score										4.40
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	4	5	4	5				4.40
Frequency	III.A.2	3	4	5	3	5				4.00
Quality	III.A.3	5	5	5	4	5				4.80

Resource Management, Prescribed Fire Average Score											4.40
Restoration (III.B)											
Watermelon Pond Site (Plantation to Sandhill)	III.B.1	4	5	5	4						4.50
Wolf Arbor (Plantation to Sandhill)	III.B.2	2	5	5	4						4.00
Wetland Restoration	III.B.3	4	5		4						4.33
Groundcover Restoration	III.B.4	4	5		4						4.33
Restoration Average Score											4.29
Forest Management (III.C)											
Timber Inventory	III.C.1	5	5	4	5	5					4.80
Timber Harvesting	III.C.2	5	5	4	5	5					4.80
Reforestation/Afforestation	III.C.3	5	5	5	4	5					4.80
Site Preparation	III.C.4	5	5	5	5	5					5.00
Forest Management Average Score											4.85
Non-Native, Invasive & Problem Species (III.D)											
Prevention											
prevention - plants	III.D.1.a	4	5	5	5	5					4.80
prevention - animals	III.D.1.b	4	5	5	5	5					4.80
prevention - pests/pathogens	III.D.1.c	4	5	5	3	5					4.40
Control											
control - plants	III.D.2.a	4	5	4	5	5					4.60
control - animals	III.D.2.b	2	5	5	5	5					4.40
control - pests/pathogens	III.D.2.c	4	x	5	3	5					4.25
Non-Native, Invasive & Problem Species Average Score											4.54
Hydrologic/Geologic function Hydro-Alteration (III.E.1)											
Roads/culverts	III.E.1.a	5	4	5	4	5					4.60
Ditches	III.E.1.b	3	5	5	4	5					4.40
Hydrologic/Geologic function, Hydro-Alteration Average Score											4.50
Ground Water Monitoring (III.E.2)											
Ground water quality	III.E.2.a	X	5	5	4	5					4.75
Ground water quantity	III.E.2.b	X	5	5	4	5					4.75
Ground Water Monitoring Average Score											4.75
Surface Water Monitoring (III.E.3)											
Surface water quality	III.E.3.a	4	5	5	4	5					4.60
Surface water quantity	III.E.3.b	4	5	5	4	5					4.60
Surface Water Monitoring Average Score											4.60
Resource Protection (III.F)											
Boundary survey	III.F.1	5	5	5	4	5					4.80
Gates & fencing	III.F.2	5	5	5	4	5					4.80
Signage	III.F.3	4	5	5	5	5					4.80
Law enforcement presence	III.F.4	4	4	5	4	5					4.40
Resource Protection Average Score											4.70
Adjacent Property Concerns (III.G)											
Land Use											
Inholdings/additions	III.G.2	4	5	5	5	5					4.80

Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)											
Public Access											
Roads	IV.1.a	5	5	5	5	5					5.00
Parking	IV.1.b	5	5	5	5	5					5.00
Environmental Education & Outreach											
Wildlife	IV.2.a	5	5	5	4	5					4.80
Invasive Species	IV.2.b	2	4	5	4	5					4.00
Habitat Management Activities	IV.2.c	4	4	5	4	5					4.40
Interpretive facilities and signs	IV.3	4	4	5	4	5					4.40
Recreational Opportunities	IV.4	5	4	5	4	5					4.60
Management of Visitor Impacts	IV.5	5	5	5	4	5					4.80
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	4	5					4.60
Sanitary facilities	V.1.b	3	5	5	4	5					4.40
Infrastructure											
Buildings	V.2.a	4	5	5	5	5					4.80
Equipment	V.2.b	X	5	5	5	5					5.00
Staff	V.3	4	3	5	4	5					4.20
Funding	V.4	2	4	5	4	5					4.00
Management Resources Average Score											4.50
Short-Term Goals (VII)											
Habitat restoration and improvement	VII.A	4		5		5					4.67
Public access and recreational opportunities	VII.B	3		5		5					4.33
Hydrological preservation and restoration	VII.C	2		5		5					4.00
Sustainable forest management	VII.D	5		5		5					5.00
Exotic and invasive species maintenance and control	VII.E	5		5		5					5.00
Capital facilities and infrastructure	VII.F	5		5		5					5.00
Cultural and historical resources	VII.G	3		5		5					4.33
Imperiled species habitat maintenance	VII.H	5		5		5					5.00

Color Code:

Excellent

Above Average

Below Average

Poor

Missing Vote

Insufficient Information

See Appendix A for detail

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 upland mixed woodland, and wet prairie, received below average scores. 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 2013 Goethe State Forest (GSF) 10-year Resource Management Plan did not identify wet prairie or upland mixed woodland as natural communities on GSF. Florida Forest Service (FFS) plans are based on Florida Natural Areas Inventory (FNAI) surveys and in 2013, the most up to date survey was from 2007. This 2007 survey did not identify either wet prairie or upland mixed woodland as communities on the forest. These communities were eventually identified in the 2022 FNAI update to natural communities mapping on GSF and were not retroactively added to the 2013 plan due to the planned rewrite in 2023. Florida Forest Service staff are currently rewriting the GSF 10-year Resource Management Plan and it will reflect the most recent survey by FNAI, including the communities in question. In addition, the 2022 FNAI survey found that these communities combined represent <300 acres on GSF or around half a percent of the total land base.

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				5.00
Dome Swamp	I.A.2	5	5	5	5	4				4.80
Sandhill	I.A.3	4	5	5	5	5				4.80
Sandhill Upland Lake	I.A.4	4	1	5	5					3.75
Floodplain Swamp	I.A.5	5	5	5	5					5.00
Scrubby Flatwoods	I.A.8	5	5	5	5	5				5.00
Depression Marsh	I.A.9	5	5	5	5	4				4.80
Wet Flatwoods	I.A.10	5	5	5	5	5				5.00
Hydric Hammock	I.A.11	5	5	5	5	5				5.00
Basin Marsh	I.A.12	5	5	5	5	5				5.00
Upland Hardwood Forest	I.A.13	5	5	5	5	5				5.00
Xeric Hammock	I.A.14	5	5	4	5	5				4.80
Basin Swamp	I.A.15	5	5		5	5				5.00
Bottomland Forest	I.A.16	5	5		5	5				5.00
Floodplain Marsh	I.A.17	5	5		5	5				5.00
Sinkhole	I.A.18	5	5		5	5				5.00
Upland Mixed Woodland	I.A.19	1	1		x	5				2.33
Wet Prairie	I.A.20	2	1		x	5				2.67
Natural Communities Average Score										4.61
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	4	5		5	4				4.50
Red-cockaded Woodpecker	I.B.1.a	5	5	5	5	5				5.00

Plants	I.B.2	5	5	5	5	5				5.00
Listed Species Average Score										4.83
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	4	5	5	4				4.60
Other non-game species or their habitat monitoring	I.C.3	4	4	5	3	4				4.00
Fire effects monitoring	I.C.4	4	5	5	4	5				4.60
Other habitat management effects monitoring	I.C.5	3	4	5	3	5				4.00
Invasive species survey / monitoring	I.C.6	5	5	5	4	4				4.60
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	3	5	5	5	5				4.60
Protection and preservation	II.B	4	5	5	5	5				4.80
Cultural Resources Average Score										4.70
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	5	5	5	4				4.60
Frequency	III.A.2	5	5	5	5	4				4.80
Quality	III.A.3	5	5	5	5	5				5.00
Resource Management, Prescribed Fire Average Score										4.80
Restoration (III.B)										
Watermelon Pond Site (Plantation to Sandhill)	III.B.1	3	5	5	5	5				4.60
Wolf Arbor (Plantation to Sandhill)	III.B.2	3	5	5	4	5				4.40
Wetland Restoration	III.B.3	4	5			5				4.67
Groundcover Restoration	III.B.4	2	4			4				3.33
Restoration Average Score										4.25
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	5	5	5				5.00
Timber Harvesting	III.C.2	5	5	5	5	5				5.00
Reforestation/Afforestation	III.C.3	5	5	5	4	5				4.80
Site Preparation	III.C.4	4	5	5	5	5				4.80
Forest Management Average Score										4.90
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	5	5	4	5				4.60
prevention - animals	III.D.1.b	2	5	5	4	5				4.20
prevention - pests/pathogens	III.D.1.c	4	5	5	3	5				4.40
Control										
control - plants	III.D.2.a	4	5	5	4	4				4.40
control - animals	III.D.2.b	2	5	5	4	5				4.20
control - pests/pathogens	III.D.2.c	4	x	5	3	5				4.25
Non-Native, Invasive & Problem Species Average Score										4.34
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	3	5	5	4	5				4.40
Ditches	III.E.1.b	2		5	3	5				3.75
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.08

Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	1	5	5	4	5				4.00
Ground water quantity	III.E.2.b	1	5	5	4	5				4.00
Ground Water Monitoring Average Score										4.00
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	1	5	5	3	5				3.80
Surface water quantity	III.E.3.b	1	5	5	3	5				3.80
Surface Water Monitoring Average Score										3.80
Resource Protection (III.F)										
Boundary survey	III.F.1	5	5	5	4	5				4.80
Gates & fencing	III.F.2	4	5	5	4	5				4.60
Signage	III.F.3	4	5	5	4	5				4.60
Law enforcement presence	III.F.4	4	5	5	3	5				4.40
Resource Protection Average Score										4.60
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	5	5	5	5	5				5.00
Discussion of Potential Surplus Land Determination	III.G.3	5	5	5	5	5				5.00
Surplus Lands Identified?	III.G.4	5	5	5	5	5				5.00
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	5	5	5	5				5.00
Parking	IV.1.b	5	5	5	5	5				5.00
Environmental Education & Outreach										
Wildlife	IV.2.a	5	5	5	4	5				4.80
Invasive Species	IV.2.b	5	4	5	4	5				4.60
Habitat Management Activities	IV.2.c	5	5	5	3	5				4.60
Interpretive facilities and signs	IV.3	3	5	5	4	5				4.40
Recreational Opportunities	IV.4	5	5	5	4	5				4.80
Management of Visitor Impacts	IV.5	4	5	5	3	5				4.40
Public Access & Education Average Score										4.70
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Recreational Trails/Multi-Use Trails	VI.A.1	5	5	5	5	5				5.00
Primitive Camping	VI.A.2	5	5	5	5	5				5.00
Hunting	VI.A.3	5	5	5	5	5				5.00
Fishing	VI.A.4	5	x	5	5	5				5.00
Timber Management	VI.A.5	5	5	5	5	5				5.00
Short-Term Goals (VII)										
Habitat restoration and improvement	VII.A	5		5		5				5.00
Public access and recreational opportunities	VII.B	5		5		5				5.00
Hydrological preservation and restoration	VII.C	4		5		5				4.67
Sustainable forest management	VII.D	5		5		5				5.00

Exotic and invasive species maintenance and control	VII.E	5		5		5				5.00
Capital facilities and infrastructure	VII.F	5		5		5				5.00
Cultural and historical resources	VII.G	5		5		5				5.00
Imperiled species habitat maintenance	VII.H	5		5		5				5.00
Color Code:		Excellent	Above Average		Below Average		Poor		See Appendix A for detail	
			Missing Vote		Insufficient Information					

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 (City of Newberry & Levy County)

Exhibit T

State Forest Management Plan Advisory Group Summary

Management Plan Advisory Group Public Hearing
Goethe State Forest
10-Year Land Management Plan

May 29, 2024

10:30 A.M.

Meeting Minutes

MPAG Members Present:

- | | |
|------------------------------|--|
| • Stephen Montgomery | Waccasassa Forestry Center Manager, Florida Forest Service (FFS) |
| • Lorna Radcliff | Land Management Chief, Suwannee River Water Management District |
| • Mitch Petoskey | Area Wildlife Biologist, Florida Fish and Wildlife Commission |
| • Erica Hernandez | Conservation Director, Alachua Conservation Trust |
| • Jo Harder | Local Property Owner |
| • Greg McCandless | Representing Dave Wilson, Local Property Owner |
| • Representative Mary Alford | Alachua County Commissioner |

MPAG Members Not Present:

- | | |
|--------------------------------|---|
| • David Benton | Local Soil and Water Conservation District Representative |
| • Representative Deseree Mills | Levy County Commissioner |

FFS Staff:

- | | |
|--------------------|--|
| • Alan Davis | Land Planning Coordinator |
| • Brian Camposano | Forest Management Assistant Bureau Chief |
| • Mark Larson | Waccasassa Forestry Center Forestry Resource Administrator |
| • Logan Deuel | Waccasassa Forestry Center Forestry Supervisor II |
| • Charles Pedersen | Biological Scientist III |
| • Hailee Quintero | Biological Scientist II |
| • Kari Hurst | Senior Forester |
| • Taylor White | Forester |
| • Cari Morris | Park Ranger |
| • Ludie Bond | Government Operations Consultant I |
| • Emily Marsh | Land Management Planner |

Guests:

- Suzanne Swore
- Edward Swore
- Susan Stevens
- Ryan Kennelly

Public Meeting Start Time: 10:31 A.M.

- Land Planning Coordinator, Alan Davis (FFS) opened the meeting by introducing himself and explained the purpose and statutory framework for the Goethe 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 Goethe State Forest (GSF) 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 Alachua County Today Newspaper and Levy County Citizen Newspaper on May 9, 2024; Florida Administrative Register, FFS webpage, as well as posted at the kiosks in the Waccasassa Forestry Center. The meetings were announced at the Levy County Commissioners meeting on May 7, 2024, and the Alachua County Board of County Commissioners meeting on April 23, 2024. 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. Stephen Montgomery was elected to serve as chairperson.
- Mr. Davis asked if there are any questions at this time. Ms. Alford inquired about the sunshine law and if that means that the MPAG Committee cannot discuss the MPAG with its members outside of the meeting but is allowed to discuss with the public. Mr. Davis stated yes, and continued to say that her term will end when FFS submits the plan to the Acquisition Restoration Council (ARC). Ms. Alford inquired when that will be. Mr. Davis stated that will happen after the MPAG members approve the minutes of the meeting. He continued to state that members will get an email after the MPAG within a week or two, and they will approve via negative response; so, if you respond, it's because you want revisions made or want some clarity within it. If you don't respond within the approved timeframe, is when it will be emailed. Mr. Camposano added that the time plan for ARC is either October or December. Ms. Marsh added that the goal is to submit this to ARC for October of this year. Ms. Alford inquired if there are issues or if they want to investigate something further, that there is additional time for it. Mr. Davis stated that October 11th will essentially be a second public hearing of this. It will include the input from today that our Director wants to include. Ms. Alford stated that she was just trying to understand and thanked Mr. Davis.
- Mr. Swore inquired where the 1pm meeting is held. Mr. Davis stated that it will be here. Mr. Swore then inquired if it will be in the same room. Mr. Davis and Ms. Marsh both stated yes. Mr. Swore stated very good and then inquired if that meeting was also a public meeting. Mr. Davis stated yes sir. Mr. Swore thanked Mr. Davis. Mr. Davis then asked if there were any more questions.
- Mr. Davis reiterated the purpose of this meeting is to receive public input which would be later discussed in the Workshop.
- Mr. Davis then introduced Forestry Supervisor II Logan Deuel who presented a PowerPoint presentation of the 10-Year Plan. Mr. Davis asked if there were any clarifying questions regarding the presentation. Mr. Swore inquired if the presentation will be available to the public after MPAG. Mr. Davis stated that he can reach out to anyone in FFS that is present, and they will provide a copy. Mr. Swore stated that he and Mr. Deuel have corresponded. Mr. Deuel agreed and stated that he will send Mr. Swore a copy.
- Ms. Harder inquired where Cubberly Pond is located. Mr. Deuel responded that Cubberly Pond is all over the place. The front on 27 is probably the most notable and was burned this year.
- Ms. Alford inquired about other control methods used other than prescribed fire. Mr. Deuel inquired the type of control that Ms. Alford is inquiring about. Ms. Alford clarified, noting that spraying is listed and is curious what the spraying is used for. She then inquired if the spraying is being used for invasive species only. Mr. Deuel stated that most of the spraying done is used for treatment, but we do use it for fire enhancement. He continued to state that FFS has done some roadside spraying in the past; both for esthetic reasons, as well as, for prescribed fire. He explained that you get a fire shadow when you burn in the same direction year after year. A lot of vegetation can build up on one side and doesn't burn as well, so we've

started treating some of that. Ms. Alford then inquired if GSF staff is treating any wetlands. Mr. Deuel stated that they have a wetland restoration project where they work to remove species that probably shouldn't be there because of fire exclusion to kind of improve the fire affects when we get a chance to burn again and that involves a little bit of spraying. Ms. Alford inquired if wide-spread spraying was being utilized. Mr. Deuel stated no.

- Mr. Davis asked if there are any further questions. Ms. Alford inquired if the water bodies flowed into the Withlacoochee River. Mr. Deuel stated that it flows into the Waccasassa and Withlacoochee Rivers. Mr. Larson stated that a lot of GSF's creeks and headwaters match up to the Waccasassa Bridge and according to the Water Management District, it is the main water discharge on GSF. Mr. Pedersen added that the 121 Tract is in the spring shed for Rainbow. Ms. Alford thanked Mr. Pedersen.
- Mr. Davis asked if there are any further questions. He then inquired about any speakers that wanted to speak and any additional public comment speaker forms that had not yet been collected.
- Mr. Davis then thanked everyone for participating and adjourned the public hearing portion of the meetings. Mr. Swore inquired, before Mr. Davis were to close the meeting, if there was any intent to modify the motorized vehicle regulations in GSF. Mr. Camposano requested clarification. Mr. Swore inquired if there is any intent to allow E-bikes on the trails outside of the road network. Mr. Camposano stated that that is something that is dealt on a statewide level as opposed to specifically in a state forest's land management plan. He explained that this is something that FFS tries to be uniform with across the state. Presently, we allow Class I E-bikes any place a bicycle is allowed. Otherwise, any other type of E-bike would be on named and numbered roads only, and that's not going to change with the Goethe plan. That would come from somewhere higher. Mr. Swore then inquired confirmation that there is nothing in FFS' current activities oriented toward changing those regulations. Mr. Camposano stated not within the plan itself, but FFS is trying to codify that in a rule change which is on pause right now; but that is a bigger picture for all state forests, not for one state forest. He then explained that if FFS starts to cherry pick rules for each state forest, it can get very confusing. Mr. Swore agreed. Mr. Camposano stated that it is something FFS is dealing with internally and looking at the options that are out there. At the end of the day, FFS feels very strongly that if its pedal-assist or Class I, then it can go anywhere a bike goes, but otherwise, if it has a motor on it that you can push a throttle, or goes over 20 miles an hour, then it can be on the same roads that vehicles can travel on. However, we don't want bikes that go 30 miles an hour down trails with just throttles because there is some danger associated with that. Mr. Swore thanked Mr. Camposano.
- Mr. McCandless stated that his question may not be privy to this group, however, he stated that the 589 extension may threaten some portions of GSF. He then inquired if FFS had any knowledge about that. Mr. Davis inquired which extension. Mr. Swore stated it is the northern turnpike extension. Mr. Camposano inquired if this was part of MCORP's project. Mr. McCandless stated that it goes from 589 to the expressway that ends down in Citrus County. Mr. Davis stated that FFS does not address futuristic easements or rights-of-ways within a forest in the 10-year plan; especially if it's conceptual or a thought process right now and is not currently an issue. Mr. Camposano added that, to Mr. McCandless's point, this is something that have been on the radar from the agency since well before he was a part of the agency. A few years ago, with MCORP's project, they were looking at all of those big highways they wanted to build, like the one that went from Georgia that just ended on the state line, there was somebody that worked with a predecessor of ours in the Forest Management Bureau who was able to tell us about a document that existed from the 90s that we dug out which detailed all of the prework to be able to deal with this particular situation, should it come this way, to protect Goethe in particular from road projects. From an agency wide perspective, we try to keep roads away from the forest, especially when they become close to very sensitive areas like Goethe is. He then stated that Mr. Davis is correct that the plan is not going to address that in the future, but that is something we are very sensitive to. FFS is on guard for that, if there is ever a threat coming towards the forest in terms of roads. Mr. McCandless stated that he asked about this because a number of people have talked about it, and he suspects that it may not be within the purview of this plan. Mr. Camposano stated that the official MCORP went away a year or two ago, but if there is another version of an extension for just that single road, then it is still in the conceptual phase at this point. It has not made it

to Forest Management's offices saying "there is going to be an impact" or "we want to build this. We need an easement". We have not gotten there yet. Mr. Davis stated that, typically, there are public meetings leading up to those type of things where that would be more appropriate than for this meeting. Mr. McCandless stated there have been a number of public meetings, but they were stopped several months ago and to resume at some point. Mr. Davis stated ok. Mr. Camposano stated that those are going to be DOT meetings. Mr. Davis agreed and added that that does not really pertain to this meeting.

- Mr. Swore inquired about the woodpecker mentioned in the presentation that if it is listed as a federally threatened species. Mr. Camposano asked Mr. Pedersen if the status changed for the Red cockaded woodpecker. Mr. Pedersen stated yes it did. Mr. Camposano inquired if it was still endangered. Mr. Pedersen stated that that is the federal status but confirmed. Mr. Camposano further inquired that the status never came down to threatened. Mr. Pedersen stated no, but there has been a lot of discussion about it. They did a species status assessment several years ago, but believes it is currently tied up in court. He then stated that it's an issue he is not intimately aware of. Mr. Swore inquired that Mr. Pedersen's understanding is that it is still listed as endangered. Mr. Camposano stated correct and is managed as such. Mr. Pedersen stated yes. Mr. Swore thanked Mr. Camposano and Mr. Pedersen.
- Mr. Davis asked if there are any further questions. No further public comments were received, and Mr. Davis closed the meeting.

Public Meeting End Time: 11:01 A.M.

Management Plan Advisory Group Workshop Meeting
Goethe State Forest
10-Year Land Management Plan

May 29, 2024

1:00 P.M.

Meeting Minutes

MPAG Members Present:

- | | |
|------------------------------|--|
| • Stephen Montgomery | Waccasassa Forestry Center Manager, Florida Forest Service (FFS) |
| • Lorna Radcliff | Land Management Chief, Suwannee River Water Management District |
| • Mitch Petoskey | Area Wildlife Biologist, Florida Fish and Wildlife Commission |
| • Erica Hernandez | Conservation Director, Alachua Conservation Trust |
| • Jo Harder | Local Property Owner |
| • Representative Mary Alford | Alachua County Commissioner |

MPAG Members Not Present:

- | | |
|--------------------------------|---|
| • Greg McCandless | Representing Dave Wilson, Local Property Owner |
| • David Benton | Local Soil and Water Conservation District Representative |
| • Representative Deseree Mills | Levy County Commissioner |

FFS Staff:

- | | |
|--------------------|--|
| • Alan Davis | Land Planning Coordinator |
| • Brian Camposano | Forest Management Assistant Bureau Chief |
| • Mark Larson | Waccasassa Forestry Center Forestry Resource Administrator |
| • Logan Deuel | Waccasassa Forestry Center Forestry Supervisor II |
| • Charles Pedersen | Biological Scientist III |
| • Emily Marsh | Land Management Planner |

Guests:

- None

Workshop Meeting Start Time: 1:02 P.M.

- Land Planning Coordinator, Alan Davis introduced himself and opened the GSF MPAG Workshop by conducting an MPAG member sound check. 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. Forestry Supervisor II Logan Deuel was available to make proposed changes to the draft during the page-by-page review.
- Mr. Davis read and asked if any MPAG members had comments regarding the public hearing conducted earlier. Ms. Harder inquired Mr. Davis if they should speak upon any ideas or additional comments they have or to do it as a part of the sections. Mr. Davis stated that he will go page by page and call out "page 1, 2, 3" and keep going. He then stated that if he is going too quickly, for the MPAG members to tell him to stop and slow down. He continued to state that as we go page by page, if MPAG members feel like there is a change, comment already prepared, or a proposal of a change, we will talk about it then and incorporate it if everyone agrees upon it. Then we will keep moving through the plan page by page, starting on page 1. Ms. Harder stated ok

and then inquired if at the end, if something was not covered, that we will cover it then. Mr. Davis agreed and confirmed, then stated that they will go over the exhibits after the written portion of the plan.

- Mr. Davis stated that we will get started on the Executive Summary, which is page 1 of the plan. Ms. Harder inquired if we need to say that we are good on this. Mr. Davis stated that he is just waiting for Ms. Hernandez to grab her notes and making sure that everyone is included.
- Page 3: Mr. Petoskey stated that Sherman's fox squirrel is listed on this page but is later corrected. He then stated that it is all Southern fox squirrel, is his understanding. Ms. Alford agreed and stated that that had been changed. Mr. Petoskey then stated that everywhere else that it is mentioned is correct. Ms. Alford stated that it says Sherman's fox squirrel in other places too. Mr. Deuel inquired if the change was to be made to Southern. Mr. Petoskey stated yes. That is his correction. Ms. Alford stated to Mr. Petoskey that FFS might have to place a search on that. Mr. Petoskey agreed. Mr. Camposano said that if don't catch any iterations of that then we will search for it on the back-end of the process. Ms. Alford stated that it is hard to give it up though. Mr. Davis agreed. He then asked if there was anything else on page 3.
- Page 4: Ms. Alford stated that we talk about harvesting the timber and then planting longleaf, and then inquired if longleaf is the only pine that FFS is replacing. She then inquired if FFS is adding any other kind of pine. Mr. Davis stated that it is per site. Mr. Montgomery agreed and echoed stating that it is site-dependent. He then stated that FFS would absolutely plant slash pine on Goethe if it is correct for the site; or, maybe, they would do some natural regeneration with slash pine, if it's appropriate. Ms. Alford stated that we didn't mention the other pines, so it was kind of an odd omission to her. She continued to state that it makes it look like FFS is only planting longleaf. Mr. Montgomery reminded Ms. Alford that this section is the Past Accomplishments subsection, and this plan is for the future, so during that period FFS only planted longleaf. Ms. Alford then inquired if GSF staff only planted longleaf during the past ten years. Mr. Montgomery stated yes and added that they had some natural regeneration of slash pine in other areas. FFS did not plant any slash pine but it does not say that they won't. Ms. Alford stated ok and that is fine. She then clarified that she just did not know if that was the only thing they had. Mr. Deuel stated that it later states that some bareroot had been planted. Mr. Montgomery stated probably. Mr. Deuel continued to state that that is not a significant accomplishment. Mr. Montgomery agreed. Ms. Alford stated that she was just curious.
- Ms. Hernandez stated that under biological management she pointed out that the last sentence and expressed her confusion about the 50 acres stated. She inquired if that was related to a specific infestation, because Exhibit A, when it lists the invasive control acreage, there is nothing, really, that reflects the 50 acres specifically; so, just a clarification of that. Mr. Davis inquired if Ms. Hernandez is suggesting wording like "on a total of 50 acres". Ms. Hernandez inquired 50 acres of what. She stated that the invasive control is like, hundreds of acres, and the numbers don't correlate. Mr. Petoskey agreed. Mr. Pedersen stated that that is an artifact of how it was reported. He explained how FFS has the state lands accomplishment report, which is quirky at best, and so we report the actual areas sprayed; plus, that could also be acres of spray site. Ms. Hernandez expressed her understanding and suggested to clarify that within the text of the plan. Mr. Pedersen stated that it's a weird metric, but it is what FFS uses for now. Ms. Hernandez agreed. Ms. Alford stated that it makes it sound like FFS only monitored 50 acres of a 50,000-acre site. Mr. Camposano reminded the group that this is the past accomplishments and promised the group that the 54,000 acres are being monitored for invasives. It is just what they treated is over that 50 acres in ten years. Ms. Hernandez stated that the table does not reflect 50 acres, so it looks like it doesn't match. But with what Mr. Camposano is saying, she stated that she thinks it just needs a clarification. Mr. Camposano inquired if Ms. Hernandez is referring to the table in the plan that is further back within the text of the plan. Mr. Petoskey stated yes. Mr. Camposano explained that the table reflects the actual acres impacted or infested and then advised the group if they look at the Accomplishments Table in the exhibits, either Exhibit A or B, and that will speak more closely to the text of the plan. Ms. Hernandez stated that she just thinks it's confusing what those 50 acres mean. Mr. Petoskey agreed. Mr. Camposano stated he is not going to argue with Ms. Hernandez on that. Mr. Davis requested Mr. Deuel to add a comment in the plan to clarify those 50 acres. Ms. Alford agreed and then stated that actively monitoring 50 acres doesn't sound good. Mr. Deuel stated that it says "control". Ms. Alford countered that it says, "actively monitor and control". Mr. Petoskey agreed. Ms. Alford then inquired if FFS is not controlling it. She then stated

that she knows FFS did more than that, but it doesn't sound like it. She then apologized and stated that she was an English major before she was an engineer. Mrs. Radcliff stated that she had a comment on the same page because if the stats that are there are supposed to equal Exhibit A, then they are totally different other than prescribed fire. Mr. Petoskey stated that the note on this page is to reconcile Exhibit A with past accomplishment numbers in the plan and that note accomplishes everything the group is talking about. Mr. Camposano agreed.

- Ms. Harder inquired how FFS got the 1,746,402 forest visits. Mr. Davis asked Mr. Camposano to explain how those numbers are reported. Ms. Harder interjected and stated she wants to explain where she is going with this. She continued to state that it could very well be an estimate. However, because there is almost no enforcement of the day use fees or permits, which she believes should be done, so that FFS gets the revenue from it. She continued to state that she doesn't know if these numbers are right or wrong, or where they came from, but she believes FFS would have a more accurate number, not just for the sake of accuracy, but for the sake of revenue if there was signage and the enforcement of the day use and permits. Mr. Davis agreed and then inquired how to best enforce that, because there's always going to be people who don't buy the day use pass or signage. Ms. Harder agreed and then stated that there is no signage. There is one sign at Black Prong and that's it. Mr. Camposano stated that there should be signage and if there's not enough signage for the group to let Mr. Camposano know and FFS will get some signage because that is something that Forest Management can easily take care of. He then stated that as far as that number goes, Ms. Harder is correct; that it is an estimate, but it is an estimate based on data. He then inquired GSF staff how many traffic counters they have on the state forest. Mr. Deuel stated that he is not sure. Mr. Larson stated that Stefis comes and goes with certain ones based on the primary and secondary roads. Driving counts as a day use, so we have a lot of different traffic counters on the forest. He continued to state that they are up at some point, and they are down at some point, so an estimate is made based on those counters. Mr. Camposano stated that when it comes to the way FFS tracks this is by moving traffic counters around the state from periods of time because we need to have a scientific basis of how to estimate. There are papers that have come out over the years that the Parks Service has used and how to estimate capacity. So, we have moved traffic counters across different roads to try to capture different traffic, but we can't account for every single person that comes in and out of a forest. Mr. Camposano assured Ms. Harder that people paying day use fees is much better, and FFS makes plenty of revenue off of that. Mr. Camposano stated he is not worried about missed opportunities, though, acknowledging the reality of one or two people may not be purchasing day use passes or permits. He continued to state that most people want to do the right thing; so, the day use passes aren't the best metric to use because they come from one county, Leon County, because of FFS's Reserve America system. Mr. Camposano explained that for the entire state of Florida, if you're using day use anywhere, it is a transaction through Leon County; so, it's not a good metric for counting on the forest. He then stated that the current Recreation Coordinator, built off our former Recreation Coordinator, has kept and refined that process a little bit more. This is how we make our estimates for not only this forest, but we have a long-range goal that the Department of Agriculture has in place for us regarding visitation. FFS has to be repeatable with that number, so we have to follow a process that we can repeat year after year and while it may not be that exact and precise, because it seems that way with 1,746,402 is an awfully exact number. However, that is the number that came out of the formula based on the traffic counter. Mr. Camposano stated that there are some other flaws with the traffic counter data. For an example, if an FFS truck, it will be counted like a member of the public. We have to give and take a little bit on that, so this is about the best we can do right now. He continued to state that if there are funding opportunities in the future, that is something FFS can look into, but they also need to look at the big picture of things and make sure we're as accurate as can be, and this is the best way we can do that. Ms. Harder stated that her point was more so to highlight the importance of the day use fees and signage and annual passes in order to A) generate revenue and B) perhaps, get this number more accurate. Mr. Camposano stated that FFS will be taking a look every year, like we do at the end of the year with our revenue, when the final numbers come in. Mr. Camposano assured Ms. Harder that their revenue has been increasing when it comes to day use passes, which again, tells him people are doing the right thing. He then shared instances when an envelope is received, addressed to someone in the state office, and inside will be \$2 with a note saying "I'm sorry. I didn't

put money back in the iron rangers” or “I wasn’t able to pay the Reserve America System when I visited your forest”. He then stated that he would almost prefer them to not pay at that point, because then he has to do paperwork and put \$2 in the bank but appreciates the gesture.

- Ms. Alford stated that the traffic counters also take into account people with a yearly pass. Mr. Camposano stated yes, anyone on the forest. Ms. Alford stated that FFS wouldn’t know how to count it otherwise. Mr. Camposano explained that FFS doesn’t see the things that go over the traffic counter, but it is, again, the best estimate of how to get there short of paying someone to count them as they go.
- Mr. Davis asked if there was anything else on page 4. Mr. Petoskey stated he had a clarifying question and inquired Mr. Davis if he would like Mr. Petoskey to submit comments on mismatched numbers as we go right now or to just send them after. He then inquired the best way to not get bogged down on that but also to get addressed. He then stated that it is on page 4. Mr. Davis inquired if a suggested comment that reads “reconcile with the chart” would cover Mr. Petoskey’s concern(s). Mr. Petoskey clarified that he is referring to where the archeological sites are reported in the exhibits. He then stated that the 140 number is 111 elsewhere. Ms. Hernandez agreed then stated all of the numbers need to be reconciled. She then continued to state that she knows the OOF funds are described later in the document, but she stated she didn’t know what that meant until later on. Mr. Davis inquired if she was referring to Operation Outdoor Freedom. Ms. Hernandez stated yes and suggested to spell it out. Mr. Davis stated yes, we can go ahead and spell it out. Mr. Davis then asked if there was anything else on page 4.
- Page 5-6: Ms. Harder stated that, on the bottom of page 5 and the beginning of page 6, Goal 2: Public Access and Recreational Opportunities, as has been described in the letters we received, she believes that the E-bikes, even though it’s going to be addressed at a statewide level instead of a local level. She further stated that she doesn’t know if it belongs on this page or further into the document, but minimum signage for E-bike riders. She stated that she believes that there isn’t a single sign, currently, that says they can’t go everywhere on Goethe. She continued to state that she might be wrong, but there are E-bikes out there and we need to let them know. She stated that doesn’t know if it goes in here at this high level of detail or we get into it a little more granularly later when we talk about recreation. She continued to state that signage for public access and recreational opportunities, FFS may need to add an objective to increase signage so the people know what they can and can’t do. She stated that right now they don’t, and there is no indication. She then inquired if she is getting too far into the weeds at this point. Mr. Davis stated that it may be better suited to go more into depth in the Recreation section of the plan rather than the goals and objectives of the plan itself. Ms. Harder inquired about a suggested adding under objective 2 of the performance measures to increase signage. She then clarified to add a bullet under this objective to read “increase signage”. Mr. Montgomery stated that is something that goes into the other portion of this plan or maybe more so into GSF’s 5-year plan. He explained that these objectives are for a broad time period. He stated that he believes putting in signs is more of an objective for a 5-year plan.
- Ms. Alford stated that she has a quick question for Ms. Harder. She stated to Ms. Harder that, clearly, she is part of the riding community, and acknowledged her concern for the impacts of horseback riders and bicycles. She then inquired of Ms. Harder how her community interacts with the hunting community. Ms. Harder stated that they stay out of the forest, in general, during hunting seasons. If they do go in, it’s later in the morning so that they don’t get hit by a stray bullet. Ms. Alford agreed, and then stated that she would think that the horses wouldn’t appreciate that any more than they appreciate bicycles. Ms. Harder agreed and stated no, but sometimes they neighbors do. She continued to state that they’re used to that, but for the most part, they have not had issues with the hunters. Ms. Alford stated that that is because of different time frame and when you’re utilizing the facility. Ms. Harder stated yes, and that they are respectful that hunters have specific days, and her riding community is generally respectful of that. She further stated that she doesn’t believe they have had any issues, to date, with the hunters. She then joked, at least in terms of nobody has gotten shot. Ms. Alford then jokingly inquired if any of the cyclists have been shot. Ms. Harder jokingly answered they might. Mr. Petoskey jokingly suggested that it wasn’t written in the report. Mr. Davis asked if there were any additional questions on page 6.

- Page 6: Mrs. Radcliff stated she has something for page 6. She continued to state that it appeared to her as if staffing is going down compared to what it might have been 10 years ago, yet in your plan, you're planning for more. She suggested to an objective to "maintain and evaluate" because, if you're planning for more and your staffing and funding is decreasing, then it's going to be tough. She then stated that it would be better to say to try to maintain. Mr. Montgomery inquired if she was referring to the Goal 2, Objective 1: Maintain public access and recreation activities. He further inquired if that wasn't good enough language. Mrs. Radcliff stated that like with Goal 7, FFS is trying to increase the campsites. Mr. Montgomery confirmed. Mrs. Radcliff stated that she thinks it's better to state maintain what FFS has, because even Park Ranger positions are half of what FFS used to be. Mr. Montgomery suggested for Goal 2, Objective 1 to state "maintain public access facilities and recreational activities", and for the performance measure, right now we have, "number of visitor opportunities". He then suggested an additional performance measure that says, "existing facilities maintained". Mr. Montgomery then inquired if this would be an appropriate place to add that. Mr. Camposano inquired to Mrs. Radcliff that she is trying to ensure FFS does not bite off more than they can chew. Mr. Davis added that there are comments in the plan that state "as staffing, funding permits" and stuff like that. He then stated that we want to do these things, but we obviously can't do them without the funding and staff to do them. Ms. Alford then inquired if there is an objective to recruit volunteers or volunteer organizations. She then inquired if any of FFS's volunteer organizations help assist with the management of the campsites. Mr. Deuel stated they do, and that GSF has started utilizing camp hosts as well and is something they are planning to continue to pursue. Ms. Alford stated that is awesome. Mr. Montgomery stated that it may be noted elsewhere in the plan. Mr. Camposano stated that when it comes to those campgrounds, that is something FFS definitely want to do and is talked about in the plan. It is a short-term goal, which means it is supposed to be done within 2 years. He then stated that he doesn't think funding would be a problem but with staffing he hears the group loud and clear. He then stated that it is up to the group and the majority recommendation that they agree upon, but if we don't want to change it, then we need to move on. If there's discussion on wanting to add or to add or if we need to move it, then let's do it now. Mr. Davis inquired if there is a proposed changed on page 6. Mr. Camposano stated that the first question is if they agree that we should hold off or make it into a long-term goal or do you guys think you can get it done in two (2) years. Mr. Montgomery stated that Mrs. Radcliff's comment is really broad, and it is addressed somewhere else in the plan, as staffing and funding allows. He then stated that he thinks that captures the sentiment of that statement and believes it to be absolutely appropriate. He continued to state that for what we're asking here, for short-term goals, he believes that he is comfortable with current staffing levels and proposes to leave as is. Mr. Davis asked if there was a change to be made.
- Page 7: Ms. Hernandez stated that she wanted to comment on Goal 3, Objective 1 to say that she really like the metrics in there. She further states that she thought they were nicely, succinctly done. Mrs. Radcliff stated that she also has a question about Goal 3. She stated that it says, "habitat restoration and improvement and fire management". She inquired if there were any calculations in this that included mechanical or herbicide, because right now, it looks like half of it is within the interval, but if you're counting herbicide, mowing, and chopping, then that number will increase, and it will actually better reflect what you're doing. Mr. Montgomery stated that using those practices instead of fire is step one. He continued to state that he doesn't believe that necessary with the objective being fire. Even if FFS is chopping and herbiciding and mowing, the objective is still fire, eventually. He explained that that is just a surrogate for fire in the meantime. Thus, he is unsure if capturing that would be a job well done; rather it's more so of a means to an end for FFS. He then stated that the ground cover restoration is captured a little bit more under objective 4, because that is a completely different scenario on a much smaller scale. Mr. Davis asked if there were any proposed changes to page 7.
- Ms. Alford stated that she was surprised, but then stated that she was looking in the wrong place. She continued to state that the plan states somewhere that FFS is going to create a management document for listed rare species, and stated her surprise that FFS doesn't already have one. Mr. Davis stated that there is one included in the plan. He then inquired if she was referring to the Invasive Species list. Mr. Deuel pointed out where Ms. Alford was referring to where it reads "in cooperation with FWC develop a wildlife management strategy...". Ms. Alford stated yes. She continued to state that it sounds like FFS doesn't already have one. She

stated that she was curious if FFS didn't have one for ten years and they're doing it now. Mr. Davis stated that that is always evolving, and we are always working with FWC. Ms. Alford stated that it just doesn't read that way. She continued to state that it reads like FFS doesn't have one. Mr. Camposano stated that he tends to agree and that it is FFS's fault, because this has been stock language over the years. He acknowledged that Ms. Alford is right and continued to state that FFS has been managing species with FWC for a long time. Ms. Alford agreed. Mr. Camposano stated that he believes we can still keep the language but change it a little bit to reflect that better. Ms. Hernandez suggested language "continue to update". Mr. Camposano suggested language "maintain and update". Ms. Alford agreed and stated that it would sound more accurate to her. Ms. Alford reiterated to Mr. Deuel to add language that reads "maintain and update". Mr. Davis stated that "maintain" would also work to capture what the group is looking for. Mr. Deuel agreed and stated that that is the same. Mr. Camposano stated that "maintain" by itself will also work if everyone in MPAG agrees. Ms. Alford stated that she would say "maintain the Wildlife Management Strategy...", since it sounds better. She continued to state that it makes her feel a lot better about what is happening. Mr. Davis asked if that change was good. MPAG members agreed. Mr. Davis asked if there was anything else on page 7.

- Ms. Hernandez stated that she was curious about Goal 7, objective 2: The Hydrological Assessment. She continued to state that sounds expensive. Mr. Petoskey agreed and stated it does sound very expensive. Ms. Hernandez stated that it almost seems like a partner opportunity with the water management district. She then inquired if there was more to that or if it's just something that goes in the plan that no one can ever accomplish because it's too expensive. Mr. Petoskey stated that was a great question. Mr. Montgomery stated that he thinks it is something very important to them on Goethe that has been talked about a lot, perhaps too much talking about it and not enough doing, so whether it's to find partners like the water management district to really jump in there and make it happen, that would be great. He continued to state that it's something, as stewards of this property, they realize there have been some hydrological alterations that have occurred. He explained that there have been lots of roads and lots of swamps on Goethe. There are lots of wetlands, so being able to wrap their heads around it all in one comprehensive plan, is what he believes, to be the best way to approach that issue. Mr. Montgomery agreed with Ms. Hernandez and stated that it is expensive and time consuming. He continued to state that they put it in the plan to hold themselves to that standard and have that as an on-going objective. It will probably not be a short-term goal, such as putting in a campsite, so we recognize that; but having it in the plan...Ms. Hernandez interjected stating that it may be some Tallahassee level initiative saying that Goethe needs this. Mr. Montgomery stated that if it is in the ARC-approved plan for them then they are agreeing with it being an ongoing objective, and then maybe FFS can seek out some funding or some partnerships using our plan as the springboard. Mrs. Radcliff agreed and stated that if FFS coordinates with the district then they can help set them up for a project that they can seek funding and if it gets approved; whether it's the district or DEP, you can try to get funding from that to rehab. Mr. Petoskey inquired if there has been an assessment of identified hydrological needs or if completed. Mr. Montgomery stated no, not a comprehensive needs assessment.
- Ms. Alford stated that she has a question about Goal 5. She inquired if FFS utilizes contractors for management of feral hogs. Mr. Larson stated not currently. He continued to explain that FWC has a program which coordinates that on FFS's behalf, but there is no current trapping on the state forest. Ms. Alford inquired if FFS manages it themselves. Mr. Larson stated that FWC is the direct manager for that program, so it's part of a mixed bag of what they allow us to do. He continued to explain that FWC allows FFS to trap on the forest, and they allow hunts, such as summer hunts and small game to help control. He further stated that there is no direct removal by paid contractors for a certain number of hogs removed annually. Ms. Alford stated that over ten year, over 700 hogs taken sounds like a lot, but it's really not that many. Mr. Petoskey added that the number is probably what FWC managed, and asked if that is where that number came from. Mr. Larson stated that FFS tracks through their trapping permits, and FWC does actually provide FFS numbers from each summer hog hunts so you get a general idea of how many hogs come out. Ms. Alford stated that she is just suggesting that that is not a very large number, so she did not know if there was opportunity in the goal to grow that number. She continued to state that she is not there, and she does not see the problem, but that's a very big site. She then explained that having managed a 5,000-acre site where she took 100 hogs a year...Mr. Davis

interjected stating that the forest relies on those hunters during the proposed hunts, during those timeframes to kill the hogs. Sometimes they're successful, and sometimes they're not. He then suggested more hunts or more opportunities. He then stated that FWC is the one to decipher how many hunts and when. Ms. Alford stated that she just didn't know if there was an opportunity to work more closely with FWC to manage the hogs because there is a lot of sensitive habitat there and they can do a lot of damage. Mr. Davis agreed. Ms. Alford reiterated that she didn't know if there was an opportunity for FFS to work more closely with FWC. She then stated that she managed all of her hogs with contractors and did a good job but acknowledged that GSF is a larger space. Mr. Davis inquired about a proposed change. Ms. Alford stated that she paid her contractors about \$100 per hog and the hunters kept the meat and had a barbeque every year for her and her staff. She jokingly stated that it was great.

- Ms. Alford stated that she was curious if GSF staff had any trouble with illegal legal on GSF, and then acknowledged that the staff monitors all of those archeological sites and keep the location of the most important ones secret. Mr. Davis then inquired to the GSF if there has been an issue. Mr. Montgomery stated that they haven't had that problem recently. Mr. Deuel added that every now and then they'll get metal detectors at trailheads, but that is the extent of it. Ms. Alford inquired if they get anyone looking for artifacts in the creeks. Mr. Deuel stated not that they have come across. Ms. Alford acknowledged that it is a big problem in Gainesville. Mr. Deuel agreed.
- Page 9: Mr. Petosky inquired about Goal 8, objective 4 regarding the demolition of the former youth academy. He inquired that later in the plan, that, following demolition the site would be restored to flatwoods. Mr. Deuel confirmed that it would be a potential restoration project. Mr. Montgomery restated the objective and pointed out the language reads "demolish and restore", which then satisfied Mr. Montgomery's inquiry.
- Ms. Alford stated that she also has a question regarding the same goal. She then stated that under the improvements subsection, it talks about "...several buildings, wells, a sewage treatment plant and other infrastructure remains from the former youth academy site". She then inquired if staff are planning on taking away the wastewater treatment facility as well. Mr. Montgomery stated that every facility that is related to that. He then explained that the wastewater treatment facility to no longer in service. Ms. Alford stated that was going to be her next question. Mr. Montgomery stated that it would be a lot of money to bring it back into service as it has been up for a decade or more. Ms. Alford stated that she assumed it to be a small package plant. Mr. Montgomery stated that yes, but he wouldn't necessarily call it a little plant. Ms. Alford stated that in comparison with the city, she's certain it's smaller. Mr. Davis asked about any proposed changed on page 9. Ms. Alford stated that she doesn't have anything.
- Page 10: Ms. Hernandez stated that there is a reference of protected lands within ten (10) miles of the forest. She continued to state that there are projects that she has completed that meet the definition of conservations easements and feasible acquisitions. She then stated that she can provide that information. Mr. Davis stated ok and suggested to add a note. Mr. Montgomery agreed and stated to Mr. Deuel to add a note saying to add to that list with new and recent acquisitions. Mr. Davis asked about any additional changes to page 10.
- Ms. Harder inquired if that list includes the one off 335. Mr. Deuel stated that the section they're on is for conservation easements. Ms. Harder clarified and inquired if there was another conservation easement that FFS received off of 335. Mr. Davis inquired of Ms. Harder if she is referring to Forest Path. Ms. Harder hesitated. Mr. Davis then inquired if Ms. Harder was talking about an acquisition or a new management, or a new tract at Goethe. She then stated that there was something new within the last two (2) months or so. Mr. Davis inquired if it was acquired for Goethe. Ms. Harder stated yes and that it was an adjacent property. Mr. Montgomery stated that Forest Path was the last one they got. Ms. Harder stated ok and that it is already in the plan. Ms. Hernandez stated that it is not. Mr. Davis stated that it is not an individual management unit, so it's included into GSF itself, so it won't be identified in the plan yet because we do not yet have a lease for it either. He then concluded that the lease amendment is coming. Mr. Davis then asked if there was anything else on page 10.
- Page 11: Ms. Hernandez stated that she had a comment under section 4 regarding Watermelon Pond Tract's description. She stated her discontent in describing the Watermelon Pond Tract as fragmented landownership; noting that the term is loaded with negative insinuations. She explained that area has so many different public lands protected around it, that the term "fragmented" doesn't seem to be the best way to describe the tract.

Ms. Hernandez suggested to re-phrase for it to read as “noncontiguous” or something to describe the tract being in patches, but they are huge patches in state forest ownership surrounded by other protected lands. Mrs. Radcliff stated that she interpreted that as the ownership of the land is fragmented; so, there’s FWC lands, FFS, etc. Mr. Petoskey agreed and added the county as having some lands. Ms. Hernandez firmly stated that she understood and thinks the term fragmented shouldn’t be used. Ms. Alford agreed and then stated that we’re all partners in conservation. Mr. Montgomery suggested language to read instead as “The Watermelon Pond Tract is north of the other five (5) tracts” and requested to just take out “fragmented ownership” altogether. He then stated the proposed change should be “the Watermelon Pond Tract is north of the other five (5) tracts”. Ms. Hernandez and Mr. Davis agreed. Mr. Davis asked if everyone was good with that.

- Mrs. Radcliff stated that also under section 4, it mentions Cubberly Pond, but she doesn’t see it anywhere on the map. She inquired where Cubberly Pond is located. Mr. Montgomery inquired which maps Mrs. Radcliff is referring to. Mrs. Radcliff stated the maps in the exhibits. Mr. Larson stated that it is in there and explained that it’s just a weird piece attached to the other side of Watermelon Pond. He then explained that there used to be a little tiny piece that was disjunct from the rest of Watermelon Pond that was all by itself. He continued to state that this now surrounds all of that Eagle’s Nest Tract, all the way up to the northwest. He concluded that it is a long, skinny, strange parcel, but it was included. Mr. Pedersen added that Cubberly Pond is on the topo map and it was placed in a way for folks to see on a topo map. Mrs. Radcliff thanks Mr. Pedersen. Mr. Davis asked if there were any proposed changes to page 11.
- Page 12: Ms. Alford stated that under B(1), you say under the third bullet it states, “conserve and protect species...”, and then you just specify red-cockaded woodpecker (RCWs). She then stated that she knows those are super cool, but on all of the other bullet points, which also have important things that FFS could list, FFS doesn’t list anything. She then concluded that she thought it was odd that FFS only listed RCWs, and then inquired if the groups know what she is saying. Mr. Davis inquired if it was the third bullet in question. Ms. Alford corrected and state that it is actually the second bullet point. Mr. Pedersen stated that it was one of the purposes for acquisition, so he believes that it ties back to the acquisition documents from the 90s. He continued to state that this is part of the acquisition history portion of the plan. Mr. Davis clarified that the management prospectus has a purpose for acquisition section which is most likely where that language came from. Ms. Alford stated that FFS has all of these other bullets and could have listed all kinds of other cool stuff under all of those other bullets. She continued to state that it seemed weird that the one bullet just had that one thing. Mr. Davis stated that however the management prospectus was drafted back when is what they chose. Ms. Alford stated that she understood. Mr. Davis continued to state that the purpose for acquisition was essentially that write up. That is what you have to use as your document behind the acquisition. Ms. Alford stated that she understood.
- Mr. Camposano inquired Mr. Pedersen if that was the timeframe of the recovery of RCWs that really started in the early 90s. He further stated that that was the time for the reasoning to add that into the land management prospectus then. Mr. Pedersen stated yes, and that the RCWs are in the federal recovery plan, which the plan came out in 2003. He continued to explain that the recovery plan was in development in the 90s, and people could see the species declining, and there were birds on Goethe. He then concluded that there is other stuff on Goethe too. Mr. Camposano stated that the focus with the management prospectus is that people were really getting up in arms about and wanting to protect the recovery of the species. Ms. Alford agreed and stated that she just didn’t know want people to think that was the only reason. Mr. Camposano stated that when they see the species list, people will quickly realize that that is not the only reason. Mr. Davis asked if there was anything else on page 12.
- Page 14: Ms. Hernandez stated that she had a question about on-site housing. She then stated to Mr. Davis that they have spoken about adjacent properties that could one day become a part of Goethe that would have housing that would be available. She continued to state that the plan reads like its mostly talking about new residences and some things that would be built on existing GSF. She then inquired if there’s opportunity to acquire property that has existing housing that could support staff or if that’s something that could be put into the management plan. She further stated that that’s something she can help FFS if planning to make it happen. Mr. Montgomery stated that FFS does have a housing program which we own houses and are rented out to

employees. However, FFS doesn't turn down a property just because it has a structure on it. That's never the reason. He explained that when FFS does acquire structures when they acquire tracts sometimes. He further stated that that is the nature of acquiring land sometimes. He then stated that sometimes FFS will turn down land because they have had structures on it, and that they have done that in the past. Mr. Montgomery further explained that it is a case-by-case basis, and it is more about acquisition about the parcel than it is about onsite housing. He then stated that FFS is not looking for more housing; that's not anything, right now, that we're, as an agency, trying to expand. He further stated that it's more like, if an acquisition has value, FFS is inclined to make that transaction happen; whether it has a structure on it or not. He concluded that he doesn't believe that this is an onsite housing issue as it is a land acquisition issue and its associated benefits and disadvantages. Mr. Davis stated that housing in general pertains to our non-conservation sites. He further explained that FFS has several areas in place where staff resides, but we don't typically look for places on the state forest to have that happen. It's typically done off conservation lands, but FFS does have housing on conservation lands if that is the case. He concluded that it is all done on a case-by-case basis. Ms. Hernandez stated ok.

- Ms. Alford stated that she had a couple more questions on page 13. She then inquired about what an apiary lease is. Mr. Davis and Mr. Deuel both stated it pertains to bees. Ms. Alford stated that now she knows and remembers what that was. She then inquired about the miscellaneous product sales and asked if there were no sale or collection of saw palmetto. Mr. Montgomery stated not at this time, but that language stated does not rule out the future sale of saw palmetto berries if that direction is given to FFS. Ms. Alford countered that she feels strongly that that should not be in there and then inquired if that is something Mr. Montgomery has any control over. Mr. Montgomery cheekily asked Mr. Camposano if that is something he has control over. Mr. Camposano stated that not unless the Commissioner's Office calls and says that staff are going to do it. Mr. Montgomery agreed. Mr. Camposano continued to state that this was something that jumped back on the radar last year and was something that the Commissioner's Office wanted FFS to explore that. However, they then became aware of some of the negative press that had come out of retirement, and they decided to hold off. He continued to state that right now, there is no active directive to explore it, but he does believe that it is something that the Commissioner's Office will ask FFS to explore it as a possibility, though it does not mean FFS is going to do it. He then stated that they are thinking of setting it up like a timber sale in general, which would make it challenging to do on Goethe or any place else. Mr. Camposano explained that unlike somewhere like Camp Blanding, where they do this regularly and it has a fence around it, because it's a military installation. He further stated that he is unsure if FFS is at that point yet. There are no plans to actively, right now. If the district has a good reason and we're asked to explore it, and they say, "this is a bad reason because...", then we'll go back up the chain with that and let them know why we think it would be a bad idea. Mr. Camposano concluded by stating that ultimately, if FFS has to explore it and the option is viable, then it's a tool in the toolbox. Ms. Alford countered that the saw palmetto berries is a limited food supply for certain species. Mr. Camposano agreed and stated that it is, and the bear population is booming in that part of the state. He stated that it used to be pretty low for a long time, and doesn't know if it's particularly high, but it is seemingly going in the right direction. He continued to state that there is some hesitance in doing that type of thing. Ms. Alford stated ok. Mr. Camposano reiterated that there is no active plan or project to do that right now, and it's not prohibited from the future because it's a potential source of revenue and managing its ecosystem. Ms. Alford stated that she hopes that it doesn't happen, and she'll put that in the record. Mr. Davis asked if there was anything else on page 13.
- Mr. Davis stated that he did want to say, for time, we're an hour (1) and seven (7) minutes into this on page 13 and there's eighty-two (82) pages. Ms. Alford stated that FFS either wants their input or they don't. Mr. Davis reassured Ms. Alford they do and explained that as things come up, for the MPAG members to have a proposal. Ms. Alford stated that she doesn't know. Mr. Davis stated that he is not directly speaking at her and clarified that overall, if there's a change in the plan to try to move it along, or else everyone will be here for a while. Ms. Alford stated that she understood. Mr. Davis stated that the group is on page 13 and it's over an hour. Ms. Alford stated that she assumed the rest of it would go a lot faster. Mr. Davis inquired once more if there was anything else on page 13.

- Page 14: Ms. Alford inquired why FFS is listing improvements that are going to be going away two (2) pages before that. Ms. Harder agreed and stated that she was her comment too. She suggested to amend it to say that it's in the process of being demolished. Mr. Montgomery clarified that it is not in the process of being demolished and further stated that FFS is proposing that FFS will demolish it, but it is not in the process of being demolished. Mr. Davis added by stating that this plan is a snapshot in time; that, right now, currently, this is what exists. Mr. Montgomery agreed. Ms. Harder stated ok. Mr. Davis asked if there was anything else on page 14. Ms. Alford suggested adding the word "currently" to that sentence.
- Page 18: Ms. Harder inquired Michelle's note and how they're incorporated in the state of Florida. She inquired if the Friends of Goethe State Forest conflicts with the Friends of Florida State Forests, and are they allowed to use that name. Mr. Davis inquired Mr. Camposano to answer that question. Mr. Camposano stated that the Friends of Florida State Forest is its own, stand alone, appropriated organization. There is only one (1) authorized chapter that is outside of the main parent organization and that is the Friends of Babcock Ranch Preserve that FFS was directed to incorporate themselves. He continued to explain that FFS cannot stop somebody, if a name exists, from going to the Division of Corporations and incorporating "Friends of...". He then stated that we prefer that "Friends of (some state forest)" are never used because it does, on the surface, appear to conflict with Friends of Florida State Forests; which is the real DSO for FFS. He continued to state that FFS doesn't recognize anything else as a DSO for FFS. He concluded that FFS can't stop anyone from doing that, and at the end of the day it's one of those....Ms. Harder stated ok and thanked Mr. Camposano. Mr. Davis asked if there was anything else on page 18.
- Page 19: Mr. Petoskey inquired about the Wolf Arbor parcel going by a different name. He stated that that is the only mention of that parcel. Mr. Deuel stated that that was the name of the parcel when FFS purchased it and has since been rolled into Cow Creek. Mr. Petoskey stated ok. Ms. Alford stated that that would be a nice thing to add. Mr. Davis inquired Ms. Alford on what to add. Ms. Alford stated that it would be a nice thing to add regarding the 322-acre Wolf Arbor parcel. Mr. Deuel stated that yes, but then the staff would have to do that every time. If there's fifty (50) acquisitions of parcels...Ms. Alford interjected stating that it's kind of useless information unless you know where it is. Ms. Harder stated that the locals will know where it is. Mr. Davis inquired of a proposed change on page 19. Ms. Alford stated that she doesn't want to put FFS out and make them have due to a whole bunch of changes.
- Page 23: Ms. Alford inquired about asking a question regarding ground disturbing activity. She then inquired the meaning of the statement that reads, "Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of interim management guidelines.". Mr. Davis stated that when FFS proposes a ground disturbing activity, there are certain parameters to adhere to; such as, if it's more than six (6) inches, less than six (6) inches, and if it's listed under certain categories, then we can proceed. Ms. Alford stated that she's just trying to determine what it means. She then inquired if ground disturbing activities could be anything from digging a ditch to doing an archeological dig. Mr. Davis stated correct and added that ground disturbing activities can be installing utilities, installing a pole barn, it could be installing fencing and firebreaks; anything that could disturb the ground. Ms. Alford stated ok. Mr. Davis continued to explain that there are some things FFS can do with review, without review, or some things have to go to ARC to get approved to amend the plan to allow FFS to proceed. Ms. Alford inquired that they would all still take into account the archeological and historical sites. Mr. Davis yes and stated that it is part of a process that FFS has to follow and DHR gets involved. He explained that DHR must submit a letterheaded piece of paper saying they're good with it and they accept it and all that. Ms. Alford thanked Mr. Davis. Mr. Larson stated that it's not listed in here, but there's an appendix that covers that language. He stated that he believes it is Exhibit H and suggested to add that language that talks about the process and how FFS handles ground disturbing activities into the text of the plan. Mrs. Radcliff stated that it does say that under section C, to see Exhibit H. Ms. Alford stated yes, she thought she had seen that somewhere else, and thanked Mrs. Radcliff. Mr. Davis asked if there was anything else on page 23.
- Page 27: Ms. Alford inquired if all of these species have been sited or if they were listed based on habitat. Mr. Davis stated that this was a response from the Florida Natural Areas Inventory (FNAI) and FFS has added to it if they've seen it and it's something that is not on their list, it can be proposed on site. He concluded by stating

that it is a list containing both documented and proposed based on current natural habitats. Mr. Camposano corrected Mr. Davis by stating that what is listed in the exhibits is based on documented and likely occurrences, but what is listed in the plan is what somebody has seen it on the forest. He explained that that could be an FFS employee, a member of the public that showed FFS a picture and the latitude and longitude to verify that it's on the forest, FWC, FNAI all goes into databases. He continued to explain that FFS requests records for the forest from FWC and FNAI before FFS begins writing the plan. He then stated yes, these species have been seen by somebody; they're not potential habitat. Anything that is potential habitat is on a much larger table than on the exhibits. Ms. Alford thanked Mr. Camposano for the clarification and stated that they seemed a little different. Mr. Davis asked if there was anything else on page 27.

- Page 28: Mr. Deuel stated that the Taper-tailed darter should be "darter" and it's not a fish. It is a bug. Mr. Camposano stated ok. Mr. Petoskey inquired if it is a bug because most are usually fish. Mr. Deuel stated yes, and that it is a dragonfly. He further stated that it should be Taper-tailed darter as well. Mr. Camposano stated that he is very curious to see what FNAI provided to FFS. He then stated that Forest Management will check that and make that correction. Ms. Alford joked that's really cool, and someone was paying attention to their dragonflies. Mr. Davis suggested to Mr. Deuel to highlight that line item. Ms. Alford joked stating bug. Mr. Camposano reminded Mr. Deuel to save the draft. Mr. Davis asked if there was anything else on page 28.
- Page 32: Ms. Harder stated she had a question about the black bears. She inquired what is considered to be a maintainable number. She stated that she knows that some black bears were being let go on Goethe, and then asked if that was true. Mr. Camposano stated that yes, there has been releases on black bears in the past on Goethe. He further stated that he doesn't know if there have been any recently in the last few years since the pandemic. He stated to GSF staff that they would know better than he would. Mr. Deuel stated that they have done two (2) since 2020. Mr. Camposano inquired if they're kept as quiet events. Mr. Deuel stated certainly. Ms. Alford joked that she assumes these to be problem bears from other areas. Mr. Camposano stated that they are specifically not problem bears. Mr. Pedersen stated that they do rehab work near Homosassa and so they needed a place to release them. He continued to state that they tend to release them on the Suwannee River National Wildlife Refuge to Goethe. He concluded stating that they are not problem bears. Rather, they're juvenile bears that have been rehabbed. Ms. Alford joked that they are not garbage can bears. Mr. Pedersen stated not normally.
- Mr. Petoskey stated that he had a quick question or needed clarification on page 31. He inquired about the 40 acres and stated that he knows GSF has the 28 acres dove field but inquired if FFS is maintaining other wildlife opening covered by that 12 acres or is that just an approximation. Mr. Larson stated that Mr. Petoskey asked a good question. He then stated that when FFS is writing a plan like this, if it does not exist as far as having a little bit of extra space, then we cannot do it. He further stated that he and Jenn had this conversation in November, before the 40 acres was established. That gives FFS the leeway to maintain, if FFS decides to do food plots in the future. Mr. Petoskey stated that he is good with it.
- Ms. Alford stated that she had a question regarding gopher tortoises. She stated that FFS has a few different places where utility lines cross the property and know that's a place where gopher tortoises often like to dig burrows, which has been her past experience. She inquired how FFS coincides and works with that. She further inquired if FFS has any control over what the utilities do on FFS properties or do they have their rights-of-way and they do what they want. Mr. Davis stated that they maintain within their easement, what legal rights they have are spelled out. He further stated that there's nothing FFS can do about it if they have the right to do and be. However, if this becomes an issue then he's certain FFS will step in. Ms. Alford stated that in doing her own gopher tortoise surveys, she has counted over 400 gopher tortoise holes within a quarter mile of the utility easement of one of her sites. She further expressed concern. Mr. Deuel stated that the gopher tortoises are there because they like what the utility companies are doing. Mr. Petoskey agreed. Mr. Camposano the water management district builds water control structures, and they use sand to berm them up; that is great habitat for tortoises. Ms. Alford agreed. Mr. Camposano continued to state that it really is a problem for the water management district. Ms. Alford stated that she was just curious in how it all was working together. Mr. Camposano stated that that is sadly, not FFS's problem, but if it's causing an issue with the utility then that is the utility company. He continued to state that they have the legal right to be within that easement. Ms. Alford

stated yes and that they just drive right over them. Ms. Hernandez stated that usually they will mark them ahead of the surveys. Ms. Alford stated that they didn't when she was there. Mrs. Radcliff inquired if number 6 is intended as a potential source of revenue. Mr. Camposano stated that it is there because it is statutorily required, and not doing it unless we have to. Mr. Davis asked if there was anything else on page 32.

- Ms. Alford stated that FFS lists no mineral deposits of commercial value are known to exist and inquired if that means the state retains all of the mineral rights. Mr. Davis stated typically, yes. He then stated that there are cases where they don't because of certain acquisitions or when it transferred hands decades ago, it was done differently. Nowadays, typically, the state retains all of the subsurface rights as well.
- Page 37: Ms. Harder stated that she doesn't know if they want to cover this later on, and that she thinks there another section that's deeper into recreation. She then inquired if there were any plans on expand any of the trailheads. She then inquired if that goes in this section. Mr. Montgomery and Mr. Camposano both stated that this is the existing section. Mr. Davis explained that this section is existing and then next section will be the planned section.
- Ms. Alford inquired what FFS meant by "passive" in reference to passive outdoor recreational activities. Mr. Camposano stated that they're not intensive on landscape, and you're out there enjoying nature. He further stated that some examples of non-passive that we have on a few state forests that we don't plan on expanding anywhere else. He then exemplified Croom Motorcycle Area at Withlacoochee State Forest is not passive recreation, but that is an old mine that was decided decades ago to be turned into that riding area, because it was going to cost more to restore. He further stated that anything that's camping, hiking, biking, fishing, horseback riding, picnicking, bird viewing; anything that you got out and enjoy the forest and see things. Ms. Alford interjected that there is jeeping, so that is where she was asking. Mr. Davis inquired jeeping? Mr. Deuel stated yes. Mr. Camposano stated that if you're respectful of the roads...Mr. Deuel interjected to state that jeeps are only allowed on the open roads of the forest, which all of those are lime rock. Ms. Alford inquired about jeeps allowed on the 70 miles or 320 miles? Mr. Deuel said only on the 70 miles of open lime rock roads. Ms. Alford stated ok because she saw some videos that looked like some folks were tearing up the roads. Ms. Harder stated that there are a few of us. Mr. Davis asked if there was anything else on page 38.
- Page 41: Ms. Hernandez stated that in Mr. Deuel's presentation this morning, when he talked about roads, he mentioned road impacts to wetlands and hydrological conditions. She then stated that she knows there's a need for a hydrological plan. She further stated that in this section for planned analysis and potential for road removal only documents low usage. She continued to state that language considering restoration needs, impacts to wetlands, and maybe, highlight wildlife mortality should be added in conjunction with low usage if there are other ecological impacts to consider as well.
- Ms. Alford inquired if the secondary roads are publicly accessed. Mr. Deuel and Mr. Montgomery both stated yes. Ms. Alford further inquired that they are not accessed in a recreational kind of way. Mr. Deuel stated that they are maintained on a lower time scale. Mr. Montgomery stated that those roads are narrower, and not as good for travel. Mr. Deuel added that there are low water crossings. Ms. Alford stated that that is where the jeeps were that she saw. She continued to state that they were doing some very fun-looking, spirited driving through water grounds. She concluded that she was just curious, but they weren't supposed to be there.
- Mr. Montgomery inquired suggestions for how to change the wording in the text of the plan. Ms. Hernandez stated to instead say "identify and permanently close roads with low water crossings", then backtracked. She then suggested language reading "evaluate roads impacts to wetlands, wildlife and hydrological features; potential for road removal" as an additional reason to remove roads. Mr. Larson stated that right now, we have "to decrease maintenance costs and unnecessary experiments". He suggested to instead clarify unnecessary disturbances to contain hydrological restoration. Mr. Davis asked if everyone was good with that change and asked if there was anything else on page 41.
- Ms. Harder inquired if FFS is going to increase the parking. She then inquired if Black Prong wanted to expand their parking area, if that has to be listed in the plan. Mr. Davis stated that it could be identified in the ten-year plan or if it comes up in the future, and is something we want to do, then we can look at the interim management guidelines if it's something we can do within that, we will do it. If not, FFS will do a plan amendment to amend the plan to include those kind of plans. He concluded by stating that it would then go to

ARC for approval. Ms. Harder stated ok. Then inquired that instead of going through that additional process if we want to instead say "if the existing trailheads need to be expanded upon...". Mr. Davis interjected stating that the only problem with that is that ARC requires specific plans. He continued to state that they need the additional acreage with what's already there, provide a map and have a write up from DHR and the water management district. Mr. Camposano added that this process is in place because FFS can't just completely exclude the process from the plan approval. Mr. Davis agreed and then stated that unless there are specific plans to do that and we can put them in here and are specific to the project, it will go through and be fine. He further explained that if it's not, it's wrong or we change it, or a different location like the north side instead of the south, then that shows we're not doing what we said we would do. He concluded that it must be specific to the project. Mr. Camposano stated that we could put in language now, but it won't stop us in doing a plan amendment in the future unless they can point to a map and say "this is exactly where it's going to be. This is the size it's going to be". Otherwise, it doesn't give the ARC council the proper framework in which to evaluate a project. He then stated that FFS does plan amendments all the time, unfortunately. He joked that that is something they are very good at. Mrs. Radcliff added that the projects are usually based off of the 5-year plans and it's something you're planning on doing within the next couple of years. Mr. Camposano agreed and stated that if it's something that's right around the corner and know that they want to do, like those campsites that were in here, that we talked about earlier, and because they know they want to do them, those are in the plan. He further stated that FFS will not have to go back to ARC for that because they were identified with a map, and they're specific with where they're going. He explained that if they were talking about 5 to 10 years toward the end of this plan, it might not be an idea we've had yet. We might get a great idea of something to do at Goethe two (2) years from now, but it's not covered in the plan, we are going to write an amendment and set up the process to do that. He further stated that one of the parts to the amendment process is public participation as well, so if DEP wants evidence from FFS that they have gotten public feedback of it being a good idea. He concluded by stating while it is outside of this current process, we would be completely circling back to the plan in that process. Ms. Harder stated ok then apologized. She clarified stating that she was just thinking about how this works. Mr. Camposano apologized for his long explanation. Ms. Harder stated that it was good to know.

- Ms. Harder then stated that item #4, Trails, Michelle mentioned in her letter about putting in a trail that goes from Tidewater all the way up to Black Prong. She continued to explain that right now, you can go from Tidewater to Apex, and that's a trail. She then inquired if the group wants to put that in there as well. Mr. Camposano requested the group to pause for a second. He stated that listening to the public comments that we had earlier, this is the time and place to address horses, bikes, everything together in this section. Mr. Davis agreed. For planned recreation, if it fits in there, then this is where we want to put it. Mr. Camposano stated that if the group wants to add something, change something, this is the time and place to do that when it comes to that stuff. Ms. Harder stated that she thinks that what Michelle was alluding in her comments, and as an equestrian Ms. Harder agrees with that. She explained that they do some events where they go all the way through, and they have to use the roads. She then stated that if they have the option to use a trail that goes from north to south, and south-north that would be totally awesome. Ms. Alford stated that she believes having off times when bicyclists may be limited due to equestrian activity would be good. She continued to state that she doesn't believe they should limit the use of bicycles because they're equestrians; if that makes sense. She proposed FFS to make a couple of trails that are equestrian only and a couple of trails not. She stated that she is unsure of which trails are more popular with the bikes and which ones are more popular with the equestrians or if they share the same popularity. She concluded by stating that she is not in favor of limiting, completely limiting access to the either group. Mr. Petoskey inquired, for his clarity, if currently, all trails are designated multiple-use where there are no restrictions. Mr. Deuel stated correct. Mr. Petoskey then inquired if that was the case across all Florida state forests and managed that way across the state so that there is an option to differentiate. Mr. Camposano stated that you can take what you have and re-designate some as multiple-use, hiking and equestrian only, biking and hiking only, equestrian only, etc. He continued to explain that FFS has a lot of different groups and sometimes they have conflicting viewpoints. He stated that he understood that fast bikes and horses do not mix very well. He continued to state that you can tell which state forest, when FFS

does these MPAG meetings, which forests are big equestrian forests because the equestrian community comes out in mass, usually. So, FFS definitely wants to try to get that right and because he doesn't think anyone has specific proposed language; and maybe you do, and we can add a sentence or whatever you wanted to add. He then stated that maybe we can add something or change something in here that would be reconsidering or reclassifying what the currently existing trailheads are for uses based on which user group is using which one the most. He stated that he is just throwing ideas out to consider. He then stated that adding trailheads if that is in the realm of possibility for the forest and the district or limiting access of one type of user; which, he would rather re-designate something rather than exclude someone altogether because that's not an inclusive way to manage. He further stated that he doesn't want horses and bikes running into each other and causing damage to the horse, bikes, and humans. Ms. Alford stated that one big thing she noticed was missing from the whole plan, that she has seen in other ten-year plans from other organizations, is a safety section. She then stated that, to her, the interaction between horses and bicyclists, hikers or hunters, etc. is a safety concern. She mentioned that she understands that FFS manages that all the time because it's one of their functions, but there isn't a discreet discussion about safety in here or anywhere. She further stated that she is not suggesting that it's something to add in the ten-year plan but maybe in the future, it might be something to think about. She continued to state that that would be the discussion, if there was a bullet point here stating, "safety evaluation to maximize..."

- Ms. Harder stated that she thinks the group needs to add something about signage. While holding up an example, she stated that this is some signage that is used at the Greenway, basically ensuring that everyone knows that they must yield to the horses. The bikes do. The people do. The cars do. Ms. Alford stated yes, she has seen that at other parks. Ms. Harder continued to state that if that goes in this section, yay, then we need to increase the education process. She then stated that we're not going to have people take a one (1) hour education course. She explained that people aren't going to do that and knows that. She then stated that FFS definitely has to increase the signage out there and increase the awareness so that the public understands the equestrian community. She continued to state that it should have its own item, so that it becomes item #7, and maybe goes into Environmental Education and Public Outreach; maybe it falls under there and stated that she's unsure. Ms. Harder concluded by stating that there absolutely, positively there has to be an investment on signage like this, so that they know they have to yield.
- Ms. Harder stated that, so far as separating the trails, she has looked into the Class I vs. Class II vs. Class III e-bikes. She stated that she doesn't think anyone here, unless they are an avid cyclist, would know the difference. She stated that all she knows is that it appears to have a motor-thing or electric thing on it. Mr. Camposano stated that he can tell her the difference. Mr. Deuel stated that the difference is if the bike has a throttle or no throttle. Ms. Harder stated ok, and that according to the guidelines from the state, there is a distinction, but you can also rev up the Class Is to a Class IIIs even if it has been labeled as Class I. She then stated that it's only going to get worse as time goes on. Ms. Alford added that you can also throttle back Class IIIs to only go as fast as Class Is. Ms. Harder agreed then stated that it's all over the place and doesn't believe that we can count on that. She stated that she knows this gets into the state requirements, but FWC has a requirement that she could find on what you could do. She stated that the state forests have it, and she doesn't believe that Forestry has that. Mr. Camposano inquired if Ms. Harder meant state parks. Ms. Harder apologized and stated that the state parks have it, but Forestry does not have a documented distinction. She then stated to FFS staff for them to take that back to Tallahassee that they need to do that. She continued to state that FFS needs to designate some trails as bicycle only. She then stated that she doesn't think bicycles want to go into the deep sand. She inquired that in ten (10) years, will the bicycles be much more powerful when we have Class A bikes that can go through the sand where the equestrians go right now. She further stated that today, it's not issue of the bicycles, and that, as a trail rider, she doesn't want to be on the roads. She wants to be in the woods. The bicyclists though, as they have increased capabilities, will perhaps, want to do the same thing, and we're going to run into more issues. Ms. Alford stated that being a former avid cyclist and being the owner of an e-bike, she doesn't own an e-bike to go fast. She stated that she owns an e-bike because of medical issues preventing her from a bike in a normal fashion as she's gotten into her 60s. She then stated that she thinks the bigger issue, when she rode horses and did trail riding, and she has friends who do carriage riders as well, is that

everyone wants to see the beautiful parts of the forest; and that's why you're out there doing it. She further stated that the bigger issue is with the people trying to do the crazy biking, or the dirt bikers. While there are dirt bikes that have...once you start powering up the dirt bike it becomes a dirt bike that's a whole different thing. She then concluded that she doesn't know and acknowledge that FFS is in a hard place trying to regulate it. Mr. Davis inquired if there is a trail the group would like to see designated to bikers or to equestrians. He then inquired if there was a proposal for a change. Ms. Harder stated that her proposal right now, and again e-bikes are going to change. She stated that ten (10) years ago we never would have thought we would be talking about e-bikes and here we are. She then stated that her proposal is to designate the road trails as bike trails and keep the existing horse trails (the orange trail, yellow trail, green trail, all the trails) keep those as, for the moment, multi-use. She continued to state that if Class A bikes come along that can go through the deep sand on the Orange Trail at Black Prong, then we have an issue. She stated that she would like to ensure we have verbiage in here in the plan that gives FFS the option of saying at some point "no, you're not using the Orange Trail at Black Prong anymore. You can't do it. We've had horse incidents". Ms. Harder explained that she has been subjected to that as well, as an equestrian, where someone comes along on a e-bike with their ears covered, jamming to their music, and not paying attention, and boom there they are; cutting right in front of her and things happen. She concluded by stating that she doesn't want that. Mr. Montgomery stated that they can address that because there are no specifics in this section. He exemplified that there is nothing that states, "let's make a bike trail from Gasline Road to here, to here and here; or let's make this a horse trail". He then stated that the appropriate way to address Ms. Harder's concerns is through GSF's Liaison panel meetings, community meetings, and our five year and annual work plans. He continued to state that if there is something that FFS proposes that conflicts with language in the ten-year plan, then it there would have to be a plan amendment. He further stated that he doesn't see anything in the ten-year plan that would prevent FFS from limiting access to a trail. Mr. Camposano stated there is not. Mr. Montgomery stated that if there are user group conflicts, GSF staff become aware of those things by having liaison meetings or volunteers with the equestrian community, and then can make those adjustments whenever. He then stated that because it's not a specific "let's put a trail here. Bikes here and horses here", it's not something that a ten-year plan addresses. It is something that GSF staff can address at the local level as they go through these scenarios and set up the what-ifs when something happens, they can react to it without any issues. Mr. Camposano agreed with Mr. Montgomery and doesn't believe FFS needs to wholly change the plan because that is something that can be done outside of the process if there are safety issues or issues that need to be addressed. He then stated that if the group wanted to make the trails section a little bit more robust and make mention of that then we can add a sentence at the end that, "we will continuously evaluate the trail uses and trail designations and make changes as we're working" or something along those lines. He then inquired the group if that works for them or if we do or do not want to mess with that. Ms. Alford stated that she thinks this is important. Mr. Camposano agreed and stated that we can mention the signs in the plan just to mention them, but we can also call our Recreation Coordinator tomorrow and get some signs ordered and put them on the trail. He continued to state that that is very simple without the plan. Mr. Petoskey agreed and stated that the signs are super specific. He exemplified that FFS doesn't even list prescribed fire acres per year, they're just stating that they're doing prescribed fire; so, the minutia of spelling out signs, specific signage in a plan, is oddly specific compared to the rest of the plan. Mr. Camposano stated that FFS has a sign policy. Ms. Alford stated that it is actually listed under D(3) which states that signs are part of the facility amenities that may be assessed. Mr. Petoskey and Mr. Camposano stated yes. Mr. Camposano stated that yes, signs in general are being assessed. He explained that there is also a sign policy that FFS has to follow internally, and truth be told, FFS is currently going through a process right now to evaluate the way we're making signs in general across all of our state forests. This is because FFS's sign shop is having a little bit of difficulty at the moment, so FFS is looking at doing signs across the state differently. He continued to state that smaller metal signs that are custom made or bought from places like Home Depot or Lowe's, the plan will not stop FFS from putting those up unless there's a line in there that specifically says this sign will be out there or will not be out there; otherwise, FFS can put signage up as necessary. Ms. Harder stated ok and then stated what she wants to see under Trails then is that a trail is developed from Apex to Black Prong, a horse trail. Mr. Davis inquired Ms. Harder if she's referring to an

assessment for an equestrian trail. Ms. Harder stated yes and reiterated to add a trail from Apex to Black Prong. Mr. Montgomery stated that it is more to assess the feasibility installing the trail. Mr. Davis agreed and stated that the path of the trail would need to be identified. Mr. Camposano stated that we can put “assess the feasibility” if the whole group is on board. He reiterated that that is the whole point of MPAG, is to make those changes that everyone wants to see. Ms. Harder stated again that she would like to see the assessment from Apex to Black Prong added into the plan. Mr. Petoskey requested that to be spelled out on the draft. Mr. Camposano requested Ms. Harder to dictate Mr. Deuel what she wants typed so that they can all look at it and make sure it’s the way we want it. Ms. Harder gave Mr. Deuel the additional language regarding the assessment for a trail from Apex to Black Prong. She then inquired if language should be added stating the implementation of said trail. Mr. Camposano stated that if they’ve done the assessment, determined there’s a good route and the funding is available, they will implement it. Ms. Harder stated ok, and she didn’t know how much we need to throw in there. She further stated to append the sentence talking about the, if necessary, the trails will be split out. Mr. Camposano suggested language “forest staff will also assess any potential conflicts on trails and address as needed” with suggestions also from Mr. Davis and Mr. Montgomery. Mrs. Radcliff stated that she would caution local staff with that if you split them out, because of where their hunting areas are, and because a lot of hunters using e-bikes now. Mr. Petoskey agreed and stated that he had a comment on it for consideration. He stated that he would probably oppose converting any larger amount of trails to equestrian only, because then you’re excluding a user group that is using those during a time of year when the equestrians are already trying to avoid conflict by time of day and the seasons being limited as they are. He reiterated that he would oppose moving away from the multi-use model.

- Ms. Harder stated what they’ve done at the Greenway is that they have distinct trails. Mr. Petoskey inquired Ms. Harder if there’s hunting there. Ms. Harder stated that she thinks there is on one part but isn’t positive. Ms. Alford stated that she thinks it overlaps. Mr. Camposano inquired if there are equestrian trails closed to hiking on the Greenway. Ms. Harder stated that they do have some trails that are closed to hiking, and some are only allowed for the equestrians. She further stated that they do have bike only trails down at the Greenway. She further stated that she hopes they don’t get to that. Mr. Deuel stated that another thing the Greenway does that is significantly different from what GSF does is that you are free to go off of designated trails on GSF. He explained further that you must be on a designated trail at the Greenway. Mr. Davis inquired if the Greenway is managed by DRP. Mr. Davis explained that DEP is a single-use agency, and they manage for single-use recreation. FFS manages for everything, for multi-use. He further stated that that’s the difference; trying to exclude a user group over the other, so we do the best we can to try to mix the two. Ms. Harder agreed and stated that don’t get her wrong, FFS is awesome.
- Mrs. Radcliff inquired that when they say “go off the trail” they mean by foot. Ms. Alford joke in her jeep. Mr. Camposano stated that what Mr. Deuel meant was if it was another road or fireline. Mr. Deuel stated yes. Mr. Camposano further stated that folks should be on the trail all the time, unless they are on foot, but this is a complex issue. Ms. Harder agreed and wanted to leave this open so that if this gets appended later, because it’s definitely a statewide issue and not just a GSF issue, is going to be the e-bikes. She further stated that it’s not so much of the equestrians having an issue today; it’s what’s going to happen in 2-10 years with the e-bikes becoming more powerful. She concluded by stating that she agreed that it is probably more of a state issue than it is a local issue. Ms. Alford stated that she doesn’t know if they’re going to get too much more powerful because she doesn’t know anyone on a bicycle that wants to go over 30 miles an hour. It’s pretty scary. Ms. Harder countered that that would be like asking her if she wants to jump on her horse and gallop down the road. She then stated that twenty (20) years ago she wouldn’t have done it but now she’s ready to go. Ms. Alford stated that’s true. Mr. Davis asked the group if everybody was good with what is up on the screen of page 41. Ms. Alford stated yes, let’s move on.
- Ms. Harder stated that she would also like to add a sentence under the Environmental Education and Public Outreach about the signage and a little bit more about...Mr. Deuel and Mr. Montgomery interjected stating that signage is mentioned under the facilities section. Mr. Deuel continued to state that the facilities section mentions educational displays and signs, so we’re well covered. Ms. Harder stated alright. Mr. Davis asked if everyone was good with page 41. Ms. Harder stated yes.

- Page 42: Ms. Alford inquired if FFS allows any other veterans or special groups to do events, besides OOF, or is that a special designated state group that gets special treatment. Mr. Davis explained that OOF is Agriculture's OOF and is very similar to groups like the Wounded Warriors. He continued to state that they hold special hunts, they fish and camp. He then stated that it's not just hunting. Mrs. Radcliff added that FFS offers day use passes to veterans who are disabled, and discounts. Mr. Camposano added that they also provide discounts for camping. Ms. Alford stated that she just didn't know if there were other special groups that were allowed. Mr. Larson stated that to answer Ms. Alford's question, no. There aren't any listed in their plans like OOF because they don't have an impact on our program. Ms. Alford stated ok. Mr. Larson continued to explain that the state forest has additional user groups that they provide benefits to, in the terms of decreased fees, yes, but nothing that FFS has as a direct affiliation like OOF. Ms. Alford stated ok, and it wasn't clear if that was group that was directly affiliated. Mr. Larson agreed and stated that OOF is a strange connected, but a little bit of a confusing scenario. He then inquired if there was specification in the document or even discusses what OOF is besides this point. Ms. Hernandez stated that was it. Ms. Alford suggested language that reads "OOF, a program managed by FFS" to provide clarification. Ms. Hernandez stated that otherwise it seemed kind of random. Ms. Alford agreed. Mr. Montgomery inquired that the suggested language is placing a comma after OOF and stating, "managed by Florida Department of Agriculture". Mr. Camposano confirmed that it should be the Florida Department of Agriculture and Consumer Services. Ms. Alford stated that she thinks that would make it clearer. She further stated that it won't make it seem like FFS is doing a special favor for some. Mr. Davis asked if there was anything else on page 42.
- Page 43: Ms. Hernandez stated that she has a general comment for page 43 that is not going to be adding a sentence. She stated that she really liked that the section echoed that whole section earlier that talked about metrics about prescribed burn acreages, fire intervals and how this is saying that FFS is halfway to meeting their goal. She then stated that is awesome and that being halfway there is a huge feat because she knows it's really hard to get fire on the ground. She then stated that what she doesn't see in the document at all is the acknowledgement of the barriers. Mr. Camposano inquired clarification. Ms. Hernandez stated barriers. She then stated that if the goal is to get everything in this 2-4-year return interval. She inquired how. She then inquired why it would be any different in the next ten (10) years. She stated that she knows that they don't really talk about climate resilience, but we can talk about weather that is contributing to this issue. She continued to state that we know it's only going to get hotter, drier, more sporadic, all of those things. She further stated that she just thinks that being able to, in a ten-year plan, when you're looking at, she doesn't know where FFS has been; she assumes that FFS is burning more than ever, or maybe not, then stated she's unsure. She then stated that some sort of acknowledgement, for FFS's own people that are probably going to get pressure for not burning more, and that it is very much about public safety as it is about a natural community management tool. She inquired about the barriers to burning and then stated that GSF staff has two (2), X number of staff, weather is hotter, the season is shorter. She concluded by stating that whatever the thing is, is not here to cover that challenge and those barriers. Mr. Davis pointed out above the Fire Management section and read the language pertaining to FFS's barriers that is already within the plan. Ms. Hernandez stated she knows and then stated that she feels like it's a big thing that's not being addressed. Mr. Camposano stated that there is a reason why the language is a little cheeky and not offering too much. He stated that he can sit here for eight (8) hours and have a conversation about the barriers to fire management. He then stated that he could write a hundred (100) page plan on what the barriers are to fire. Ms. Hernandez inquired if FFS knows they're protected in terms of expectations. Mr. Camposano stated that as long as FFS follows their prescriptions, yes. Ms. Hernandez stated that she's just saying that might be something to consider because there's a lot of pressure out there. Mr. Camposano agreed and then stated that there is equal or pressure if you go conduct a prescribed fire and burn somebody's house down. Ms. Hernandez agreed and then stated that's a huge barrier. Ms. Alford inquired that a barrier would be development. An MPAG member agreed. Ms. Hernandez stated that adjacent land is. Mr. Camposano continued to explain that it is not explicitly written in there but alludes to FFS is going to talk to landowners that move in along the boundary or near us to try to mitigate any fire, smoke, or boundary issues. He then stated that it is one of those things of do we add pages of reasons why. He further stated that GSF has a very checkered history with fire, and they are on the very

good side of things now. He stated that when he was working as OPS on GSF in 2007, we struggled to burn a bit to the point where we burned the same sandhills every year, but they have taken steps. Ms. Hernandez interjected stating that's what she's saying and explained that it reads like FFS can do it and it's more complicated than that. Mr. Larson stated that the plan was structured how previous sections have been structured. He continued to state that it sounds like, here is what we have currently for recreation. Then we put in there, here are some of the things that we plan to assess and address in the next ten (10) year period. He explained that if FFS writes the same exact style for fire, we would put: here is how we did the past ten (10) years, here are some of the issues we ran into the past 10 years, here's what we plan to assess. He then exemplified the Steeple Chase neighborhood is really close to one of our boundaries and we will continue to work on maintaining communication with those folks and improving our relationships so that smoke concerns are not an issue, because they are. Ms. Hernandez stated yes, and she believes that identifying that conflict really addresses the idea that FFS may not get the whole thing in the fire return interval that they want and it's not their fault. Mr. Camposano stated that FFS doesn't want to give up on that which is the reason why the plan is written the way it is. He then stated that no matter what weather conditions, personnel situations, wildland urban interface, whatever it is that's thrown at us, because it's only going to get worse over time. Ms. Hernandez stated exactly. Mr. Camposano continued to state that FFS is going to work to find the opportunities when they can do that. Ms. Hernandez interjected stating exactly and stated that she thinks that's it. She then stated that there are barriers and FFS is trying anyways instead of just goals. Mr. Larson stated that they're identifying where the opportunities are in the next ten (10) years, where FFS is, what revenue, etc. Ms. Hernandez stated that she thinks it's worthwhile, but maybe it goes in the regular fire management plan. She then stated that it doesn't have the same tone as other parts of the document where FFS is talking about the plan.

- Mrs. Radcliff stated that she also has a question and going back to what she asked awhile ago regarding other alternatives besides prescribed fires as far as reducing the wildfire risk. She continued to state that FFS is trying to do this at certain intervals, but if they're reducing the fuel loads and vegetative management of the area, then they're accomplishing the same thing in a way. Mr. Petoskey stated that there is a fuel reduction section earlier in the plan. Mrs. Radcliff stated that she must have missed that. An MPAG member pointed out the Fire Prevention and Mitigation Strategies section. Ms. Alford stated that there are good and bad parts to all the different ways we do this, so that's FFS's big job in balancing out the big events of fire against the impacts of neighbors and impacts of fire mitigated communities.
- Mr. Davis asked if there were any changes to this page. Ms. Hernandez stated that she thinks there's things that should be added. Mr. Davis stated ok and inquired Ms. Hernandez what she would like to see added. Ms. Hernandez stated in general. She then stated that it's more of what Mr. Larson was saying about this is where they've been, we have these clearly stated goals, these are some barriers and how they will overcome them. Ms. Alford stated that she is with Ms. Hernandez. Mr. Camposano inquired how to intelligently say that they'll overcome a weather barrier in a plan because they just have to deal with today's and tomorrow's weather. Ms. Hernandez stated that she thinks it has to do with readiness, staff, equipment, things that allow them to move quickly and adjust to drastic events. Mr. Camposano stated that he knows what Ms. Hernandez is saying and is not lost on him, but he is thinking of a way to word it. Ms. Hernandez agreed and then stated that she just thinks it's thrown away here. She then stated that maybe it shouldn't be addressed in this. Ms. Alford stated to Ms. Hernandez that it seems like she's saying that it's an opportunity here. Ms. Hernandez stated yes. Ms. Alford continued to state that it's an opportunity to list this and be able to point to that and say look. Ms. Hernandez interjected stating that yes and that this is a huge part of our state culture. She continued to state that we need fire. Fire is hard to do. This is how we're trying to overcome that. Mr. Camposano inquired the local district's thoughts. He then stated that if they all agree, and wouldn't try to do it right now, because you will need to redirect the district to add language to that effect if that's what y'all want to do. Ms. Alford stated that she would be willing to review that at some future date. Mr. Camposano stated that if we add it later, then we can give her a copy of the plan but there won't be a formal review like we're doing here. He continued to state that either we stop here and add what we want to add in and try to do that, which could ensue us going down a very big rabbit hole because there's a lot of stuff with that. He then stated that he would rather give

them the chance to think about their issues and barriers. He then stated that it sounds like the GSF staff are amenable to adding that in. Mr. Montgomery stated that he's not really amenable to it. He stated that the intention of the plan is to show what they're going to do and want to do, not why. There isn't a lot of why or why they can't. He exemplified by saying we're going to put in this trail and that they don't go into how they came up with that and what their limits might be and encounter. Mr. Montgomery stated that, to him, the plan in its current form is saying we want to do this and here is the metric for it. He continued to state that they do that more for fire than anywhere else and here's why they came up with that, and really, that's the only place in the plan that we're delving into the metrics of it. He further stated that they are giving it a lot of attention here and if they get too wound up...he then stated that it's a ten (10) year management plan that's setting their goals for them. Mr. Davis stated that it's conceptual. Mr. Montgomery stated exactly and continued to state that it's not like fire management where somewhere locally... Ms. Hernandez interjected and inquired if there are pressures at the end of the ten (10) years; like if they only hit a certain percentage of their goal. Mr. Davis stated that there is an LMR every five (5) years so there is accountability there, and also reward. He further stated that they could be thanked for the work they've done. Ms. Hernandez again inquired that she wants to ensure that FFS is protected by this language. Mr. Camposano again stated that yes, they are protected. Mr. Davis stated that the plan does mention a little bit about it being largely dependent on the weather, staffing and all that kind of stuff. He then stated that it does briefly state that stuff.

- Ms. Alford inquired if they use the plan when arguing for budgets or increased equipment or anything like that. She then inquired if they ever referred to this document. Mr. Davis stated no and reiterated that the plan is conceptual. Mr. Montgomery agreed with Mr. Davis and stated that they do refer to the annual burn goal that's stated in the plan and will request fancy piece of equipment from Mr. Camposano so they can burn a bunch of land. He continued to state that they receive that kind of support with how the plan is already written. Mr. Camposano expressed that it is one of the more important things. Mr. Montgomery agreed and stated that everyone recognizes that importance. Ms. Hernandez stated that she will defer her comments to what the staff thinks, but wished it was something that stood out more. Ms. Alford agreed. Mr. Davis inquired if there were no changes and if the group is good with the current language. Mr. Camposano promised Ms. Hernandez that it's protected, and that the idea is to burn GSF as much as they can, because they've made some great gains in the last ten (10) years that they don't want to give up. Ms. Hernandez agreed.
- Mr. Petoskey stated that he had some language back on page 42. He continued to state that as a fellow manager, he doesn't like to tie staff's hands by somebody who doesn't work on my forest said or what their input is. He then read the section that he has questions and stated that there is roughly 5,000 acres of GSF that are not included or closed to hunting, such as the Bailey Tract, or the several sections off the roads. He suggested language stating, "assess increasing the acreage open to hunting where appropriate". He concluded by stating that way FFS has language that encourages it without tying staff's hands or get anybody in a bind. Ms. Alford stated instead of increasing to say "adjusting as appropriate" because it could go the other way. Ms. Harder joked that not with the number of pigs in there. Mr. Camposano stated that it actually can't go the other way because there can't be a net loss of hunting habitat or hunting acres statewide. He explained that FWC sends something out to all of the agencies every year and they want to know how many acres are open to hunting. If you start showing a net loss of hunting acres, then you have to have a very good explanation why because they have to inform the legislature of that. He continued to explain that hunting is definitely a big thing and FFS is always looking at that; if there's areas that they need to add to the WMA. If it's a WEA then it would be FWC not FFS, because it's on their property. Mr. Petoskey stated that the hunting regulations actually call it a WEA and clarified that it's all under one brochure for Watermelon Pond. Ms. Alford stated that you can increase one place and decrease at another. Mr. Montgomery agreed and stated that that was what he was going to say, and still be net zero (0). He then inquired if that needs to explicitly say that. Mr. Petoskey joked that he retracts his comment. Mr. Camposano stated that in a month or so, FFS will receive that report from FWC and there are some maps that need to be updated to show what's in the WMA, because some of the maps are wrong. He continued to state that FFS is always assessing and for the most part, open things up for hunting unless there's a good reason not to. Ms. Alford stated that she expects that in the next ten (10) years there's going to be development pressure in the Watermelon Pond Area. Mr. Camposano stated that he hopes not,

but there might be. A few of the MPAG members agreed. Ms. Alford began to state that she's pretty sure there will be based on...Mr. Davis interjected asking for any change on page 42. The group joked about retracting Mr. Petoskey's original comment.

- Page 46: Ms. Harder stated she had one quick comment for page 46 for #6, Adjacent Neighbor Contacts. She suggested to state "by electronic means" instead of "by email". She then offered other means such as text and Facebook. Mr. Montgomery stated to go with language that reads, "contacted with potential sites" and get rid of "by telephone or email". Ms. Harder stated fine, sold. Next. Ms. Alford agreed.
- Page 47: Ms. Alford jokingly inquired if landowners let FFS know when they're burning things. FFS staff laughed and stated that's a good one and stated that hopefully they have a burn permit.
- Page 48: Ms. Alford stated that under the Invasive Species Control Section, no invasive animals were listed, and inquired if that is somewhere else. Mr. Davis stated that it's usually right above it. Ms. Alford stated ok and inquired if GSF has toads, or Cuban treefrogs. Mr. Camposano stated that it depends on what FFS receives from FWC. He continued to state that it's usually just the hogs that they're tracking, and if she wants to get into every invasive animal that's in Florida, then yes, there are Cuban tree frogs. Ms. Alford offered anoles, then stated that there's a lot. Mr. Camposano stated that anoles are different and brown anoles in particular. He continued to state that they don't like to be in the woods. Rather, they like to be around buildings, so it's very rare, almost impossible to find them deep in the woods. Ms. Alford inquired the anoles. Mr. Camposano clarified that green anoles can be found in the woods. Ms. Alford stated that she has found one in the woods one time, and that is a whole other story. She joked that she won't tell it now. Mr. Davis asked if there was anything else on page 48. Ms. Alford stated she's done and stated that she just wanted to know.
- Pages 53-54: Ms. Alford stated that the descriptions of all of the habitats are lovely.
- Page 55: Ms. Alford commented on GSF's diversity and assumes it to be part of the forest's value.
- Page 80: Ms. Alford stated that she has a question on the whole section that the group just went quickly through and goes back to page 49. She requested the group discuss the historic acres versus the current acres. She stated that she assumes this is because FFS is trying to restore certain habitats. Mr. Camposano stated yes. Ms. Alford continued to inquire if it is also related to climate change, like wet flatwoods has gone down by 600 acres. Mr. Camposano explained the process of FNAI's data compilation for FFS's ten-year land management plans. He stated that in FNAI's mapping projects, FFS asks for historic acres, which is what it was close to before humans began modifying the landscape to what current day snapshot looks like. This is because they only have photographic evidence back to the 40s and 50s, that is the timescale that FFS goes back to. He further stated that that usually good enough for most areas to delineate what the historic communities were before. He then stated that a lack of management, being no fire, will change a community too. Ms. Alford agreed. Mr. Camposano continued to explain that it doesn't mean that it has to be developed or cut or turned into a pasture, it could just be things were left alone and they're fire-dependent and they needed to be burned but now they're gone into the next successional stage. Ms. Alford stated that she understood and that she was just curious where those came from and what the relationship was to goals and things. She concluded stating that that's a nice section. Mr. Camposano stated that FFS is always trying to get closer to the historic number the best way we can. He then stated that FFS also start reforestation with a plantation and that is step 1. He continued to state that a lot of people don't like plantations, but it is one of the ways to start and then the rest of the process comes in as time goes on. He concluded by stating that you have to have those longer lenses, and it is something he has learned along in his career. Ms. Alford jokingly stated try getting elected.
- Mr. Davis asked if there were any questions or comments on the exhibits. Mrs. Radcliff stated that the tab title says Little Big Econ and might want to change that. Ms. Marsh stated that she will have to change that individually because the previous person who created that title...Mr. Camposano interjected stating that the actual word file isn't called that. Ms. Marsh agreed. Mr. Deuel also stated that it's weird. He stated that the actual file isn't called that. Ms. Marsh explained that it's something she can do by going into the properties tab of the document to edit later on in the process.
- Mrs. Radcliff inquired if plots under Timber Inventory in Exhibit A, should be numbers rather than acres. Mr. Deuel inquired which page. Mr. Davis answered page 3. Mr. Montgomery stated that Mrs. Radcliff is correct,

and it should be number. Mr. Camposano suggested Mr. Deuel to make a note. Mr. Deuel stated that he can't because it is the pdf version.

- Ms. Hernandez inquired if there was finer resolution on these maps. Ms. Alford stated that was going to be her question. She then inquired if there was a link to the maps. Mr. Camposano stated that that is something they tend to struggle with regarding the plan, but they have to figure out how to fit everything neatly on 8.5x11" pieces of paper. He then directed them to go to GSF's website and stated that there is a series of forest maps that are available right now and are electronic. He further stated that they can send the digital versions if the group wants so they can zoom in a little bit or can send them. Mr. Davis added that the files were probably reduced and if they want an individual map to let FFS staff know. Mr. Camposano agreed and stated that there isn't a way for us to get it into the plan printed that way. However, when it goes online at the end, you're usually able to zoom in better. Ms. Hernandez stated ok, and further stated that this was just the email version. Mr. Camposano stated that yes, and they're reduced substantially when they're emailed out otherwise, they'll get this in broken pieces, and it be very annoying to read. Ms. Marsh added that it also depends on who your email carrier is. She exemplified that Outlook will have different file size limits; even within agencies too. She explained that DEP has a different file size limit than FFS does. She concluded by stating that whether it's Gmail or Earthlink, sometimes they just have different files size limits depending on who the sender is and who is the receiver.
- Ms. Hernandez stated that she has a question regarding the Optimal Management Boundary map. She stated that it's different than the optimal boundary for acquisition and inquired if it's an updated shapefile. Mr. Davis inquired about what her question is. Mr. Montgomery stated that she has an old optimum management boundary map. Ms. Hernandez stated she has an old optimal management boundary and that some of the areas she's been working on she didn't think were in the optimal boundary. She then stated that it says management because FFS doesn't own the land. Mr. Montgomery stated correct. Mr. Davis stated that this map is the updated version of the map she's been working off of. Ms. Hernandez stated yes, and inquired if the state would still consider this as important for acquisition. Mr. Davis stated that FFS can send her this draft version for her to work off of because this version is most likely what will get approved. Ms. Hernandez stated ok, and that would be awesome. Mr. Montgomery stated that Mr. Larson will send that to her. Ms. Hernandez stated ok and thanked Mr. Montgomery.
- Ms. Alford stated that she had a question. She stated that FFS talks about BMAPs and different river and water systems, and then show the water resources. She then stated that she would have thought that a watershed map would be included, and she doesn't see one in there. Mr. Davis stated that the Basin Management Action Plan can be accessed online. Ms. Alford interjected stating that she knows it's all out there somewhere, but she thought there would be a map in here as part of general information. Mr. Davis explained that if it's located within one of those BMAPs then reference it and look it up, but to include all of that information in a ten-year plan. Ms. Alford interjected stating that she just thought that one (1) map that would show the different watersheds in where they drain was something she is curious about. Ms. Hernandez interjected stating that there is a hydrological map in the exhibits. Mr. Montgomery stated that it doesn't show the creeks and watersheds. Mr. Davis stated that FFS has something like that but it's not very detailed. Ms. Alford stated yes, and that she was just curious because it was just something she thought she would see and couldn't find it. She concluded by stating that was her only comment. Mr. Camposano stated that that is not something that is typically in our plans. He stated that he's trying to think of a state forest that is more wetlands heavy than GSF. Ms. Alford stated that it's ok, and that she just expected to see it and didn't. She then added that she expects to see a lot of things in state matters that she doesn't see.
- Mr. Larson stated that there are a lot of documents in there that do have lesser value. He continued to jokingly inquire if the Wekiva soil makes up 0.00x% of GSF. Mr. Camposano stated that is actually very helpful when it comes to gopher tortoises. Mr. Davis asked if there was anything else in the exhibits.
- He then asked each MPAG member to comment on the draft plan. Mr. Montgomery thanked the staff at Goethe and Mr. Pedersen, and all the staff at FFS for going through iteration after iteration of this plan, and the back and forth to the state office. He continued to state that a lot of work goes into these plans and it's a very time-consuming endeavor. He concluded by stating thanks a lot and FFS turned out a really good plan. Mr.

Petoskey stated that he approves of the plan as is. He stated that as a comparison to some of his FWC plans, he noted that FFS has a lot more specific objectives than FWC's. He noted the annual prescribed fire objectives and on the ten (10) year cycle FWC looks at that and continued to exemplify Watermelon Pond's goal and its current rate of completion. He suggested having that objective and evaluation could be handy, but he acknowledged FFS's attempt to keep it universal across all state forests. He then concluded that he wouldn't suggest changing it on an individual basis. Mrs. Radcliff stated that FFS did a really good job and not painting themselves in a corner. She stated that leaving it broader is actually very smart and good job. Ms. Hernandez stated that she thinks it's a great plan. She continued to state that it has a lot of information in it and is a lot to compile. She then stated that she also likes how it cross references a lot of the shorter-term management plans, so that if you have a really specific question you can go after them, and that seems really useful, which keeps it a living document. She further stated that she thinks it's great and good job. She concluded by thanking everyone and for including the MPAG members in this planning process. Ms. Harder thanked FFS for including the recreational users in this meeting and as a part of this plan. She further stated that overall, she stated they love Goethe and love everything that FFS does for them and is pleased they and FFS have an understanding of what's there and what FFS is looking to do. She then stated that as she mentioned before, e-bikes are definitely a concerning item, not just for GSF, but on a state-wide level. She continued to state that she hopes that whatever the state determines would be appropriate for GSF. She concluded by thanking FFS for including recreational users. Ms. Alford stated that she agrees and thanks FFS for including the county. She stated that she learned a lot and enjoyed reading the plan, and thought it was well done. She jokingly thanked the group for putting up with her. She continued to state that she had one comment that she forgot to make for Exhibit O, Invasive Species. She stated that she assumed that the findings shows where invasive species have been found. She then inquired if they are found along the roadways because that's where they spread. Mr. Davis stated that they're usually found in places where ground disturbance took place. He explained that they spread more easily in disturbed ground rather than in natural habitat. Ms. Alford stated that she just thought it was interesting when she looked at it and thought to herself that that is exactly where the roads are. She thanked Mr. Davis for the educational opportunity. Mr. Larson stated his appreciation for Ms. Alford's observation and stated that one thing the state forest has in its favor is that all of the biologists associated with the forest have to go hunt down birds and to do that they have to walk through all of these plots and inevitably find the weeds along the way. He concluded by stating that it almost seems like FFS is looking from the roadside. Ms. Alford stated that she knows FFS goes all over the place, but she thought it might be an opportunity. Mr. Larson stated that that's one of the benefits to the inventory they do and what Mr. Pedersen and Ms. Quintero do. He continued to state that FFS is lucky to have very few invasive species in general on GSF. He then stated that he increased his total amounts of sites, and very few of them are less than 200 feet from the road. Ms. Alford stated that's amazing, and then stated if FFS can keep it that way, then that would be amazing. An MPAG member jokingly stated good luck with that. Ms. Alford stated her appreciation for the opportunity to participate and it is a good plan, despite her nitpickiness and questions and comments. Mr. Davis thanked Ms. Alford.

- 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 October 11, 2024, public meeting.
- Mr. Davis thanked everyone for their time and participation and adjourned the meeting.

Workshop Meeting End Time: 3:27 P.M.

Exhibit U

State Forest Summary Budget

	GOETHE 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	\$ 73,580	23.10%	\$ 254,978.75
Exotic Species Control	\$ 5,478	2.97%	\$ 32,792.60
Prescribed Burning	\$ 37,197	3.37%	\$ 37,196.59
Cultural Resources Management	\$ 127	0.07%	\$ 761.59
Timber Management	\$ 14,705	7.98%	\$ 88,024.57
Hydrological Management	\$ 828	0.45%	\$ 4,955.87
	\$ -		\$ -
OTHER RESOURCE MANAGEMENT	\$ 15,244	8.27%	\$ 91,247.54
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	\$ 66,460	36.04%	\$ 397,815.86
Land Management Planning	\$ 3,385	1.84%	\$ 20,264.97
Land Management Reviews	\$ 570	0.31%	\$ 3,410.61
Training/Staff Development	\$ 17,886	9.70%	\$ 107,064.37
Vehicle Purchase	\$ 701	0.38%	\$ 4,194.27
Vehicle Operations and Maintenance	\$ 32,380	17.56%	\$ 193,819.61
	\$ -		\$ -
OTHER SUPPORT	\$ 11,538	6.26%	\$ 69,062.03
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	\$ 38,841	21.06%	\$ 232,495.24
New Facility Construction	\$ 5,784	3.14%	\$ 34,624.84
Facility Maintenance	\$ 33,056	17.93%	\$ 197,870.40
			\$ -
Visitor Services/Recreation	\$ 23,553	12.77%	\$ 140,982.80
Information/Education	\$ 5,729	3.11%	\$ 34,293.71
Operations	\$ 17,824	9.67%	\$ 106,689.09
			\$ -
Law Enforcement	\$ -	0.00%	\$ -
Total	\$ 184,394.67	100.00%	\$1,103,756.34

Exhibit V

Arthropod Control Plans

(City of Newberry & Levy County)



25440 W Newberry Road
Newberry FL 32669
Tel: 352-472-2161 Ext. 2
www.newberryfl.gov

July 12, 2023

Mr. Mark Larson

Reference: City of Newberry Mosquito Control Program

Please allow this letter to inform you that City of Newberry does not spray any mosquito control chemical outside of City's utility service area. The customers who receive City of Newberry mosquito control service are within the corporate limits of City of Newberry that receive utility services from the City of Newberry.

Our decision to spray for mosquitoes is governed by state guidelines (F.S. 388 and F.A.C 5E-13). Justification to spray is based on resident complaints with verification by landing counts or visual confirmation of the presence of adult or immature mosquitoes by a licensed applicator, or an applicator operating under the direct supervision of a licensed applicator per Florida Administrative Code.

Please feel free to call me if you have any questions.

A handwritten signature in black ink, appearing to read "Jamie Jones". The signature is fluid and cursive, with the first and last names being clearly legible.

Jamie Jones
Assistant City Manager/Director of Utilities & Public Works



Levy County Mosquito Control

P.O. Box 248

Bronson, FL 32621

(352)486-5127, office (352) 486-5165, fax

E-mail: Parksmc@levycounty.org

June 20, 2023

Mark Larson

Forestry Supervisor II

Florida Forest Service

Tallahassee, Florida 32399-1650

Email: Mark.Larson@fdacs.gov

Dear Mark,

After our telephone discussion last Friday, June 16, we have decided that ACP is not necessary for Goethe State Forest which lies in local Levy County Mosquito District.

Thank you for your time and the information provided.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Weldon", is written over the word "Sincerely,".

Matt Weldon, Director

Levy County Mosquito Control

Exhibit W

Florida Forever Project

Watermelon Pond

Partnerships & Regional Incentives
Alachua, Levy

<i>Year Added to Priority List</i>	<i>1994</i>
<i>Project Acres</i>	<i>12,542</i>
<i>Acquired Acres</i>	<i>7,187</i>
<i>Cost of Acquired Acres</i>	<i>\$8,707,029</i>
<i>Remaining Project Acres</i>	<i>5,355</i>
<i>2020 Assessed Value of Remaining Acres</i>	<i>\$18,667,263</i>

Purpose for State Acquisition

The Watermelon Pond project will conserve one of the best remaining landscapes of dry longleaf pine sandhills pocked with marshes and lakes. The project will conserve habitat critical for species such as fox squirrels, sandhill cranes, and scrub bay. The project will protect ground water supply and provide the public with resource-based recreation opportunities.

General Description

The project is important for its extensive tract of xeric uplands (sandhill and scrub natural communities) and seasonally interconnected wetlands of the Brooksville Ridge physiographic province. The complex of these uplands with their marshes and lakes is regionally significant to vertebrate fauna in an area of the state subject to extensive development pressures. No comparable complex is protected in north- central Florida. The project is also the major aquifer recharge area in Alachua County. No archaeological sites are known from the project. The uplands are threatened by subdivision for agriculture and ranchette developments.

FNAI Element Occurrence Summary

FNAI Elements	Score
Florida sandhill crane	G5T2/S2
Striped newt	G2G3/S2
Eastern indigo snake	G3/S2?
Gopher tortoise	G3/S3
Florida mouse	G3/S3
Southeastern fox squirrel	G5T5/S3
Skelley's june beetle	G2/S2
<i>giant orchid</i>	G2G3/S2
Southern hognose snake	G2/S2S3
<i>incised groove-bur</i>	G3/S2
Gopher frog	G2G3/S3
<i>scrub stylisma</i>	G3/S3

Public Use

This project will be designated as a state forest with such public uses as hiking, fishing, horseback riding and camping.

Acquisition Planning

Phase I: (essential) Loncala (acquired) and other large sandhill and xeric tracts including Gladman, Burch, Matson, Hart, Barry, O'Steen and Outler. Phase II: Remaining tracts.

1998

On October 15, 1998, the LAAC designated the non-subdivided portion of section 36 and 11 other "corridor" parcels as essential.

2003

On February 7, 2003, the ARC added 250 acres in Alachua County to the project boundaries.

On December 5, 2003, the ARC moved this project to the Group B list.

2007

In April 2007, FWC acquired 1,288 acres, identified as Barry Ranch. Of these acres, 607 are within the Watermelon Pond Florida Forever project boundary.

2010

On August 13, 2010, the ARC approved a 3,161-acre reduction in the project boundary due to residential/commercial/infrastructure development.

2011

On December 9, 2011, this project was placed in the Partnerships and Regional Incentives category of Florida Forever projects.

Coordination

FWC and Alachua County are acquisition partners for this project. On April 11, 2012, Alachua County purchased 640 acres in an adjoining area, which will help buffer the project.



Management Policy Statement

The primary goals of management of the Watermelon Pond CARL project are to conserve and protect significant habitat for native species or endangered and threatened species; to conserve, protect, manage, or restore important ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect; and to provide areas, including recreational trails, for natural- resource-based recreation.

Manager(s)

FFS

Management Prospectus**Qualifications for state designation**

The natural pine forests and the restorable pine plantations of the Watermelon Pond project make it desirable for management as a state forest.

Conditions affecting intensity of management

The areas of pine plantation and agricultural land in the project will require reforestation and restoration efforts beyond the level typically expected on a state forest. Consequently, management intensity and related management costs might be slightly higher than what would normally occur on a state forest.

Management implementation, Public access, Site security and Protection of infrastructure

Once the core area is acquired, FFS will provide public access for low-intensity, non-facilities- related outdoor recreation. Initial activities will include securing the site, providing public and fire management access, inventorying resources, and removing trash. FFS will provide access to the public while protecting sensitive resources. The project's natural resources and threatened and endangered plants and animals will be inventoried to provide the basis for a management plan.

Long-range plans for this project will generally be directed toward restoring disturbed areas to their original conditions, as far as possible, as well as protecting threatened and endangered species. Some of the pinelands have been degraded by timbering and require restoration.

An all-season burning program will use, whenever possible, existing roads, black lines, foam lines and natural breaks to contain fires. Timber management will mostly involve improvement thinning and regeneration harvests. Plantations will be thinned and, where appropriate, reforested with species found in natural ecosystems. Stands will not have a targeted rotation age. Infrastructure will primarily be in disturbed areas and will be the minimum required for management and public access. FFS will promote environmental education.



Revenue-generating potential

FFS will sell timber as needed to improve or maintain desirable ecosystem conditions. These sales will provide a variable source of revenue, but the revenue-generating potential for this project is expected to be low to moderate.

Cooperators in management activities

FFS will cooperate with and seek the assistance of other state agencies, local government entities and other interested parties as appropriate.

Management Cost Summary

<u>FFS</u>	<u>Startup</u>	<u>Recurring</u>
Source of Funds	CARL	CARL
Salary	\$80,530	\$80,530
OPS	\$0	\$0
Expense	\$30,000	\$20,000
OCO	\$112,500	\$6,000
FCO	\$0	\$0
TOTAL	\$223,030	\$106,530

Source: Management Prospectus as originally submitted



