

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

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 13 (II.B.2)
4.	The legal description and acreage of the property.	18-2.018 & 18-2.021	Page 9 (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, C, D, and E
6.	An assessment as to whether the property, or any portion, should be declared surplus.	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.	18-2.021	Page 15 (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(10)	Page 3 (I); Page 3 (I.A); Page 11 (II.A.4)
10.	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	Page 10 (II.A.3); Exhibit G

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 5 (I.C. Goals 1-9); Page 12 (II.B); Page 14 (II.C.); Page 16 (II.D.6); Page 17 (II.E.); Page 20 (III.C-D); Page 22 (IV.B.3); Page 24 (IV.C.); Page 33 (V.A-D); Page 35 (VI.A-F); Page 42 (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.1)

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section B: Use Items			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
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); Exhibit H
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 archaeological or historical resources.	18-2.021	Page 1 (Executive Summary); Page 17 (II.E.1); Exhibit J
16.	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	Page 17 (II.E.1); Page 17; (II.E.2.)
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(10)	Page 13 (II.B.5); Page 33 (V.)
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 13 (II.D.5); Exhibit V
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 16 (II.D.6); Page 20 (III.C-D); Page 21 (IV.A); Page 22 (IV.B.3); Page 24 (IV.C.); Page 30 (IV.D); Page 31 (IV.H-I); Page 35 (VI.); Page 42 (VII.); Exhibit 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 13 (II.B.3-4)
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.	18-2.021	Page 39 (VI.C.1-4)
23.	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	Page 15 (II.D.1)

Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019

Section C: Public Involvement Items			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
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 18 (II.E.4); Exhibit W
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(10)	✓
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.	259.032(10)	Page 18 (II.E.4); Exhibit U
27.	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Exhibit W
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.	253.034(5) & 259.032(10)	✓
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.	259.036	Page 18 (II.E.4); Exhibit W
30.	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	Exhibit W
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 W

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.	18-2.021	Page 21 (IV.A.); Exhibit K
33.	Insert FNAI based natural community maps when available.	ARC consensus	Exhibits N, Q, R & S
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 21 (IV.A-I)

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section D: Natural Resources			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
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 21 (IV.A-I); Exhibits L, Q & R
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 30 (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 30 (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 24 (IV.C.); Exhibits M & N
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 24 (IV.C.), Table 5; Exhibits M & N
40.	The identification or resources on the property that are listed in the Natural Areas Inventory.	18-2.021	Page 5 (I.C. Goal 5); Page 24 (IV.C.); Page 42 (VII.); Exhibits M, O, Q & R
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(10)	Page 20 (III.C-D); Page 21 (IV.A.2); Page 22 (IV.B.3 & 5); Page 24 (IV.C.); Page 30 (IV.D); Page 32 (IV.I); Page 39 (VI.C); Page 41 (VI.D.-E.); Page 42 (VII.); Exhibit I
42.	Habitat Restoration and Improvement		
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 archaeological resources and their values for which the lands were acquired.		Page 5 (I.C. Goals 1-9); Page 18 (III) Page 42 (VII.); Exhibits I & J
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. Goals 1-9)
42-C.	The associated measurable objectives to achieve the goals.		Page 5 (I.C. Goals 1-9)
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures.		Page 5 (I.C. Goals 1-9); Page 35 (VI, A-D); Page 42 (VII.)

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section D: Natural Resources			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
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 5 (I.C. Goals 1-9); Page 14 (II.C.); Exhibit X
43.	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage.	253.034(5)	Page 42 (II.C.); Page 15 (II.D.6); Page 19 (III.B); Page 21 (IV.A.1); Page 21 (IV.B.1); Page 24 (IV.C.); Page 30 (IV.G); Page 33 (V.A - C); Page 39 (VI.C); Page 42 (VII.); Exhibits A, H, M, N, O, Q & R
44.	Sustainable Forest Management, including implementation of prescribed fire management		
44-A.	Management needs, problems and a desired outcome.		Page 5 (I.C.); Page 35 (VI.A-C); Page 42 (VII.)
44-B.	Detailed description of both short and long-term management goals.		Page 5 (I.C.); Page 35 (VI.A-C); Page 42 (VII.)
44-C.	Measurable objectives.		Page 5 (I.C.)
44-D.	Related activities.		Page 35 (VI); Page 30 (IV.D); Page 42 (VII.); Exhibits O, P, Q & R
44-E.	Budgets.		Exhibit U
45.	Imperiled species, habitat maintenance, enhancement, restoration or population restoration		
45-A.	Management needs, problems and a desired outcome.		Page 6 (I.C. Goal 3); Page 7 (I.C. Goal 5); Page 24 (IV.C.); Page 42 (VII.); Exhibits L & M
45-B.	Detailed description of both short and long-term management goals.		Page 6 (I.C. Goal 3); Page 7 (I.C. Goal 5); Page 24 (IV.C.); Page 42 (VII.); Exhibits L & M
45-C.	Measurable objectives.		Page 6 (I.C. Goal 3); Page 7 (I.C. Goal 5)
45-D.	Related activities.		Page 24 (IV. C.); Page 35 (VI.A-C); Page 35 (VII.A-L); Page 24 (Table 5); Exhibits M & N
45-E.	Budgets.		Exhibit U

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section D: Natural Resources			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
46.	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage.	253.034(5)	Page 41 (VI.D & E); Page 41 (Table 6) Exhibit Q
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	Page 42 (VI.E); Exhibit Y
48.	Exotic and invasive species maintenance and control		
48-A.	Management needs, problems and a desired outcome.		Page 8 (I.C. Goal 6); Page 41 (VI. D & E); Exhibit P
48-B.	Detailed description of both short and long-term management goals.		Page 8 (I.C. Goal 6)
48-C.	Measurable objectives.		Page 8 (I.C. Goal 6)
48-D.	Related activities.		Page 41 (VI.D & E); Page 42 (VII.); Exhibit P
48-E.	Budgets.		Exhibit X

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.	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 21 (IV.B.); Exhibit L
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 1 (Executive Summary); Page 21 (IV.B.); Page 42 (VII); Exhibits K, L, Q & R
52.	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage.	253.034(5)	Page 1 (Executive Summary); Page 21 (IV.B.); Page 42 (VII); Exhibits K, L, Q & R
53.	Hydrological Preservation and Restoration		
53-A.	Management needs, problems and a desired outcome.		Page 8 (Goal 8); Page 21 (IV.B) Exhibit L
53-B.	Detailed description of both short and long-term management goals.		Page 8 (Goal 8); Exhibit U
53-C.	Measurable objectives.		Page 8 (Goal 8); Exhibit U

Revised February 2013

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section E: Water Resources			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
53-D.	Related activities.		Page 8 (Goal 8); Page 21 (IV.B); Exhibits X
53-E.	Budgets.		Exhibit X

Section F: Historical, Archaeological 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 archaeological and historical resources.	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(5)	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 archaeological and historical resources.	18-2.021	Page 20 (III.C & D); Exhibits I & J
57.	Cultural and Historical Resources		
57-A.	Management needs, problems and a desired outcome.		Page 8 (I.C. Goal 7)
57-B.	Detailed description of both short and long-term management goals.		Page 8 (I.C. Goal 7)
57-C.	Measurable objectives.		Page 8 (I.C. Goal 7)
57-D.	Related activities.		Page 8 (I.C. Goal 7); Page 18 (III); Exhibit G & H
57-E.	Budgets.		Exhibit X

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.	253.034(5)	Page 14 (II.C); Exhibits B & E
59.	Capital Facilities and Infrastructure		
59-A.	Management needs, problems and a desired outcome.		Page 8 (I.C. Goal 9)
59-B.	Detailed description of both short and long-term management goals.		Page 8 (I.C. Goal 9)
59-C.	Measurable objectives.		Page 8 (I.C. Goal 9)
59-D.	Related activities.		Page 14 (II.C.); Page 33 (V.); Exhibits B & E

**Land Management Plan Compliance Checklist
Tate's Hell State Forest – 2019**

Section G: Facilities (Infrastructure, Access, Recreation)			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
59-E.	Budgets.		Exhibit X
60.	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	Page 1 (Executive Summary); Page 14 (II.C.); Page 33 (V.); Page 42 (VII.); Page 43 (Table 7; Exhibits B & E
61.	Public Access and Recreational Opportunities		
61-A.	Management needs, problems and a desired outcome.		Page 5 (I.C. Goal 2)
61-B.	Detailed description of both short and long-term management goals.		Page 5 (I.C. Goal 2)
61-C.	Measurable objectives.		Page 5 (I.C. Goal 2)
61-D.	Related activities.		Page 33 (V.); Exhibits B & E
61-E.	Budgets.		Exhibit X

Section H: Other/ Managing Agency Tools			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
62.	LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	✓
63.	Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	Page 1 (Executive Summary)
64.	The accomplishments since the drafting of the last LMP set forth in an organized 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(10)	Page 5 (I.C. Goals 1-9); Page 42 (VII.); Exhibits B, D, I, L, M, N, P, Q, R & T
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(5)	Page 5 (I.C. Goals 1-9); Page 15 (II.C.4); Exhibit X

Land Management Plan Compliance Checklist Tate's Hell State Forest – 2019

Section H: Other/ Managing Agency Tools			
Item #	Requirement	Statute/ Rule	Page Numbers and/or Appendix
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(10)	Page 5 (I.C. Goals 1-9)
68.	A statement of gross income generated, net income and expenses.	18-2.018	Exhibit X

* 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.

** 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.

*** 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
TATE'S HELL STATE FOREST
FRANKLIN AND LIBERTY COUNTIES



PREPARED BY THE
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
FLORIDA FOREST SERVICE
APPROVED ON

TEN-YEAR LAND MANAGEMENT PLAN
FOR THE
TATE'S HELL STATE FOREST



Approved by:

Jim Karels, Director
Florida Forest Service

Date

Jimmy Roberts, Chief
Forest Management Bureau

Date

**TEN-YEAR LAND MANAGEMENT PLAN
TATE’S HELL STATE FOREST
TABLE OF CONTENTS**

Land Management Plan Executive Summary	1
I. Introduction	3
A. General Mission and Management Plan Direction	3
B. Past Accomplishments	4
C. Goals / Objectives for the Next Ten-Year Period	5
II. Administration Section.....	9
A. Descriptive Information	9
1. Common Name of Property	9
2. Legal Description and Acreage.....	9
3. Proximity to Other Public Resource	10
4. Property Acquisition and Land Use Considerations	11
B. Management Authority, Purpose and Constraints	12
1. Purpose for Acquisition / Management Prospectus	12
2. Degree of Title Interest Held by the Board.....	13
3. Designated Single or Multiple-Use Management.....	13
4. Revenue Producing Activities.....	13
5. Conformation to State Lands Management Plan	13
6. Legislative or Executive Constraints	14
7. Aquatic Preserve/Area of Critical State Concern	14
C. Capital Facilities and Infrastructure	14
1. Property Boundaries Establishment and Preservation	14
2. Improvements	14
3. On-Site Housing.....	14
4. Operations Infrastructure	15
D. Additional Acquisitions and Land Use Considerations	15
1. Alternate Uses Considered.....	15
2. Additional Land Needs	15
3. Surplus Land Assessment	16
4. Adjacent Conflicting Uses	16
5. Compliance with Comprehensive Plan	16
6. Utility Corridors and Easements.....	16
E. Agency & Public Involvement	17
1. Responsibilities of Managing Agencies.....	17
2. Law Enforcement.....	17
3. Public and Local Government Involvement	17
4. Volunteers	18
5. Friends of Florida State Forests	18

III. Archaeological / Cultural Resources and Protection	18
A. Past Uses	18
B. Archaeological and Historical Resources	19
C. Ground Disturbing Activities	20
D. Survey and Monitoring	20
IV. Natural Resources and Protection.....	21
A. Soils and Geologic Resources.....	21
1. Resources	21
2. Soil Protection.....	21
B. Water Resources.....	21
1. Resources	22
2. Water Classification.....	22
3. Water Protection	22
4. Swamps, Marshes, and Other Wetlands	22
5. Wetlands Restoration	23
6. Basin Management Action Plan.....	23
7. Tate's Hell Hydrologic Restoration Plan.....	24
C. Wildlife Resources	24
1. Threatened and Endangered Species	24
2. Florida Natural Areas Inventory	27
3. Florida Fish and Wildlife Conservation Commission	27
4. Game Species and Other Wildlife.....	28
5. Survey and Monitoring	29
D. Sustainable Forest Resources.....	30
E. Beaches and Dune Resources	30
F. Mineral Resources	30
G. Unique Natural Features and Outstanding Native Landscapes.....	30
H. Research Projects / Specimen Collection.....	31
I. Ground Disturbing Activities	32
V. Public Access and Recreation.....	33
A. Existing	33
B. Planned.....	34
C. Hunter Access	35
D. Education	35
VI. Forest Management Practices	35
A. Prescribed Fire	35
B. Wildfires, Prevention, Fire / Prescribed Fire Strategies.....	37
1. Suppression Strategies	38
2. Smoke Management.....	38
3. Firebreaks and Firelines.....	38
4. Sensitive Areas.....	38
5. Firewise Communities	39
6. Adjacent Neighbor Contacts	39

7. Post-Burn Evaluations	39
C. Sustainable Forestry & Silviculture	39
1. Strategies	39
2. Silvicultural Operations	39
3. Forest Inventory	40
4. Timber Sales	40
5. Sustainable Forestry Initiative	40
D. Non-Native Invasive Species Control.....	41
E. Insects, Disease and Forest Health	42
F. Use of Private Land Contractors.....	42
VII. Proposed Management Activities for Natural Communities	42
A. Basin Marsh	43
B. Basin Swamp	44
C. Baygall	47
D. Blackwater Stream	49
E. Bottomland Forest.....	49
F. Depression Marsh	50
G. Dome Swamp.....	51
H. Floodplain Marsh	53
I. Floodplain Swamp	54
J. Mesic Flatwoods	55
K. Sandhill	57
L. Scrub	55
M. Scrubby Flatwoods.....	60
N. Shrub Bog	62
O. Swamp Lake.....	63
P. Wet Flatwoods	64
Q. Wet Prairie	66
VIII. References	68
IX. Glossary of Abbreviations	68

TABLES

Table 1. THSF Acreage by Funding Source	Page 10
Table 2. Nearby Significant Public Conservation Land	Page 10
Table 3. Parcel Acquisition.....	Page 11
Table 4. Archaeological and Historical Sites on THSF	Page 19
Table 5. Endangered or Threatened Species on THSF	Page 24
Table 6. Non-Native Invasive Species Found on THSF	Page 41
Table 7. Prescribed Fire Interval Guide on THSF	Page 43

**TEN-YEAR LAND MANAGEMENT PLAN
TATE’S HELL STATE FOREST
EXHIBITS**

THSF Ten-Year Management Accomplishment Summary.....	Exhibit A
Location/Boundary Map	Exhibit B
Optimal Management Boundary Map	Exhibit C
Road Map.....	Exhibit D
THSF Facilities, Recreation and Improvements	Exhibit E
Tract & Acreage Maps.....	Exhibit F
Proximity to Significant Managed Lands	Exhibit G
Florida Forever Projects at THSF	Exhibit H
Archaeological and Cultural Sites	Exhibit I
Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands	Exhibit J
Soil Maps and Descriptions	Exhibit K
DEP Outstanding Florida Waters.....	Exhibit L
Water Resources Maps	Exhibit M
FNAI Response	Exhibit N
FWC Response.....	Exhibit O
THSF Fire History	Exhibit P
Non-Native Invasive Species.....	Exhibit Q
Current Natural Communities Map	Exhibit R
Historic Natural Communities Map.....	Exhibit S
Management Prospectus	Exhibit T
Land Management Reviews.....	Exhibit U
Compliance with Local Comprehensive Plan	Exhibit V
State Forest Management Plan Advisory Group Summary	Exhibit W
State Forest Summary Budget	Exhibit X
Arthropod Control Plans	Exhibit Y

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

LEAD AGENCY: Florida Department of Agriculture and Consumer Services, Florida Forest Service
COMMON NAME: Tate's Hell State Forest
LOCATION: Franklin County and Liberty County
ACREAGE TOTAL: 202,436.58 acres

Historic Natural Communities	Approximate Acreage
Basin Marsh	77
Baygall	13,580
Bottomland Forest	1,961
Dome Swamp	2,500
Floodplain Swamp	6,517
Sandhill	495
Scrubby Flatwoods	926
Swamp Lake	29
Wet Prairie	24,908

Historic Natural Communities	Approximate Acreage
Basin Swamp	36,415
Blackwater Stream	304
Depression Marsh	140
Floodplain Marsh	1,788
Mesic Flatwoods	39,883
Scrub	658
Shrub Bog	25,342
Wet Flatwoods	48,895

TIITF LEASE AGREEMENT NUMBER: 4041

USE: Single ____ Multiple X

MANAGEMENT AGENCY

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

RESPONSIBILITY

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

DESIGNATED LAND USE: Multiple-Use State Forest

SUBLEASES: None

ENCUMBRANCES: Various ingress/egress easements, utility easements, and outstanding oil, gas and mineral interests on portions of the property

TYPE ACQUISITION: Preservation 2000, Conservation and Recreation Lands, and Florida Forever programs

UNIQUE FEATURES: Dwarf Cypress Areas, Miles of River Frontage, Coastal Land, Large Freshwater Recharge Area

ARCHAEOLOGICAL / HISTORICAL: Forty-one (41) Sites

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

ACQUISITION NEEDS: Various In-holdings and adjacent lands in Optimal Management Boundary

SURPLUS ACREAGE: None

PUBLIC INVOLVEMENT: 2012 and 2017 Land Management Reviews, Management Plan Advisory Group and Public Hearing, and DEP Acquisition and Restoration Council Public Hearing.

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

ARC Approval Date: _____ BTIITF Approval Date: _____

Comments: _____

I. Introduction

Tate's Hell State Forest (THSF) is 202,436 contiguous acres occurring in the lower coastal plain along the Gulf Coast of Florida's Big Bend region. Currently situated between the Ochlockonee and Apalachicola Rivers and bisected by the New River, THSF is a rich and complicated mosaic of timberland, savannah, and swamp holding distinctive native habitats that interconnect. THSF is a working forest with thousands of acres of planted slash pine, a legacy of former industrial forest land, gridded by roads built by digging ditches on either side.

Tate's Hell State Forest occupies most of the interior of Franklin County (54% of the land), with 91%, of the forest in Franklin and 9% in Liberty County. It's divided into ten management tracts ranging from 13,000 to 24,000 acres. Natural communities include wet and mesic flatwoods, basin and dome swamp, wet prairie, shrub bog, baygall, floodplain swamp, bottomland forest, scrub forest, sandhill, and various marsh types. There are over 100,000 acres of THSF in planted slash pine and over 800 miles of mostly dirt roads that lead to abundant space and solitude increasingly rare in Florida.

Tate's Hell State Forest is home to all the common north Florida wildlife, and many threatened and endangered species. Among Florida's rare and listed species are 31 animals and 24 plants that occur on THSF. The red cockaded woodpecker and gopher tortoise are the more widely recognized. One of the most valuable resources on THSF is clean water that flows and seeps into the wetlands, marshes, and estuaries vital to Gulf fish stocks, oysters, and other shellfish.

Tate's Hell State Forest is managed under a multiple use concept where timber, wildlife, recreation, water, and aesthetics are resources for the public good. Long term sustainability is the guiding principle. Since 2015, Tate's Hell has been independently certified by the Sustainable Forestry Initiative (SFI). The primary management operations include prescribed burning, timber thinning, and hydrologic restoration. Each operation affects change in different temporal and spatial scales but in a linked and integrated way.

Tate's Hell State Forest is a landscape that bears a heavy record of historical uses from early settlement, through the forest industry years, to the return to the public domain. Restoration of native habitats with adaptive management are part of the long-term stewardship and sustainability written into this Ten-Year Plan. The local community is the first beneficiary and Tate's Hell management with wildfire protection and recreation opportunities. Timber harvest generates revenue for Florida, and is important to employment and commerce in the region.

A. General Mission and Management Plan Direction

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

Management strategies for THSF center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) F.S. Implementation of this concept will utilize and conserve state forest resources in a harmonious and coordinated combination that will best serve the people of the state of Florida, and that is consistent with the purpose for which the forest

was acquired. Multiple-use management for THSF 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 wetland and aquatic communities;
- Provide research and educational opportunities related to natural resource management.

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

B. Past Accomplishments

A compilation of management activities and public use on THSF has been completed monthly and is available from the forest manager. A table has been prepared for this plan that summarizes the accomplishments for each of the past ten years [Exhibit A]. The table does not attempt to account for all activities on the forest but summarizes major activities. It does not list the multitude of daily activities and public interactions involved in managing the forest.

There have been many events, developments, and accomplishments since the 2007 Ten Year Land Management Plan was approved. Some noteworthy accomplishments include:

- Prescribed fire applied to 411,571 acres
- 41,196 acres of pine plantations were thinned
- 1,550,121 tons of timber were harvested
- 2,020,877 bare root slash pine seedlings were planted on 2,780 acres
- 885,437 containerized longleaf seedlings were planted on 1,137 acres
- 6,000 hardwood seedlings were planted on 20 acres
- 1,097 acres were treated for invasive plants
- 8,235 miles of roads graded
- 501 miles of roads rebuilt and stabilized
- 42 bridges repaired
- One (1) bridge built
- 209 culverts installed
- 15 low water crossings installed
- 2,257,201 estimated day use visitation
- 31 interpretive programs or tours on the forest

- 562 miles of forest boundary marked or maintained

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

The following goals and objectives provide direction and focus management resources for the next ten-year planning period. Funding, agency program priorities, and the potential for wildfire during the planning period will determine the degree to which these objectives can be met. Management activities on THSF during this management period must serve to 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. The majority 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 Management Plan including reforestation, harvesting, prescribed burning, restoration, and timber stand improvement activities and goals. (Ongoing Goal)

Performance Measures:

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

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

Performance Measures:

- Complete 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: Continue to implement the THSF Five-Year Outdoor Recreation Plan and update annually. (Ongoing Goal)

Performance Measures:

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

Objective 2: Maintain public access and recreational opportunities for all recreational users. (Ongoing Goal)

Performance Measure: Number of visitor opportunities per day.

Objective 3: Assess additional public access and recreational opportunities. (Short Term Goal)

Performance Measure: Number of additional visitor opportunities.

Objective 4: Continue to involve and meet with the liaison panel. The panel consists of a mix of local residents, community leaders and special interest group representatives (canoe vendors, hunters, trail hikers, military, organized equestrian groups, etc.), environmental groups, and other public / private entities to establish communication and seek constructive feedback regarding the management of THSF. (Ongoing Goal)

Performance Measures:

- Liaison group remains organized.
- Meetings continue.

Objective 5: Maintain cooperation with Florida Fish and Wildlife Conservation Commission (FWC) to develop specific hunting season quotas; bag limits and address hunting issues to be agreed upon at annual cooperators meeting between FFS and FWC. (Ongoing Goal)

Performance Measures:

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

Objective 6: Enlist volunteers and volunteer organizations to assist with recreation and/or resource management. (Ongoing Goal)

Performance Measure: Number of volunteer hours.

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

Objective 1: Utilize prescribed fire to enhance restoration of native groundcover. Evaluate areas where native groundcover has been eliminated or heavily impacted from historical land use and evaluate feasibility for alternative methods for reestablishment of native groundcover plants. Restore native groundcover where it has been eliminated or heavily impacted from historical land use. (Long Term Goal)

Performance Measure: Number of acres restored.

➤ **GOAL 4: Fire Management**

Objective 1: The THSF currently contains approximately 116,000 acres which are available to burn. THSF staff will conduct habitat / natural community improvement on the forest annually. To achieve an average fire return interval of two (2) to five (5) years across the forest, approximately 25,000 to 42,000 acres will be prescribed burned annually. Currently, FFS staff estimates 100,000 acres at THSF are within the desired fire rotation. (Ongoing Goal)

Performance Measures:

- Number of acres burned during the dormant and growing seasons, and number of acres burned within target fire return interval.
- Number of acres with restoration underway. This restoration would include prescribed burning

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

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 THSF and the surrounding community through a comprehensive mitigation strategy that includes evaluating vegetative fuels near residential areas and identifying potential fuel reduction projects. (Long Term Goal)

Performance Measures:

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

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

Objective 1: In cooperation with the Florida Fish and Wildlife Conservation Commission, develop a Wildlife Management Strategy that addresses fish and wildlife species for THSF, including imperiled species and associated management prescriptions for their habitats. (Long Term Goal)

Performance Measures:

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

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

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

Objective 3: In consultation with FWC, implement surveys and monitoring protocols, where feasible, for listed and rare species. (Long Term Goal)

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

Objective 4: In coordination with FWC, continue to actively manage red-cockaded woodpeckers on THSF using the guidelines established in the THSF 10-year RCW management plan (March 2019), including monitoring, habitat improvement, cavity tree

protection, identification of potential breeding groups, and translocation (if applicable). (Ongoing Goal)

Performance Measure:

- Number of clusters managed.
- Number of potential breeding groups.
- Acres of habitat improved.

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

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

Performance Measures:

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

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

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

Performance Measure: Number of recorded sites.

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

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

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

Performance Measure: Number of local staff trained.

➤ **GOAL 8: Hydrological Preservation and Restoration**

Objective 1: As funding becomes available, continue implementation of the Tate's Hell Hydrologic Restoration Plan. (Ongoing/Long term Goal)

Performance Measure:

- Hydrologic basins restored.

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

Performance Measure: Percent compliance with Silvicultural BMPs.

➤ **GOAL 9: Capital Facilities and Infrastructure**

Objective 1: THSF staff, along with inmate crews, volunteers, and/or user groups, will continue maintenance of nine (9) parking areas and two (2) trailheads, 47 miles of trails, eight (8) boat launches, and 850 miles of primary, secondary, and tertiary roads. (Ongoing Goal)

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

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

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

Performance Measures:

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

II. Administration Section

A. Descriptive Information

1. Common Name of Property

The common name of the property is the Tate's Hell State Forest (THSF).

2. Legal Description and Acreage

The THSF is comprised 202,436.58 acres, more or less.

Tate's Hell State Forest is located in Franklin County, between the Apalachicola and Ochlocknee Rivers. The forest extends into the southeast corner of Liberty County, south of the Apalachicola National Forest and 1.5 miles northwest of the town of Carrabelle. Access THSF from U.S. Hwy. 98, County Rd. 67, or State Hwy. 65.

The boundaries and the major parcels are identified in [Exhibit B]. The THSF is located in all or part of:

- Township 5 South, Range 3 West; Sections 19, 20, and 28-34
- Township 5 South, Range 4 West; Sections 13-15, and 19-36, 15
- Township 5 South, Range 5 West; Sections 19-36
- Township 5 South, Range 6 West; Sections 19-36
- Township 5 South, Range 7 West; Sections 22-27, and Sections 34-36
- Township 6 South, Range 3 West; Sections 3-9, 14-23, and 27-31
- Township 6 South, Range 4 West; Sections 1-36
- Township 6 South, Range 5 West; Sections 1-36
- Township 6 South, Range 6 West; Sections 1-36
- Township 6 South, Range 7 West; Sections 1-3, 10-15, 22-27, and 34-36
- Township 7 South, Range 4 West; Sections 1-10, and 17 & 18
- Township 7 South, Range 5 West; Sections 1-34

- Township 7 South, Range 6 West; Sections 1-30, and 32-36
- Township 7 South, Range 7 West; Sections 1-18, and 23-26 & 35
- Township 8 South, Range 5 West; Sections 3-9, and 18
- Township 8 South, Range 6 West; Sections 1-5, 7-18 and 20 & 21

Table 1. THSF Acreage by Funding Source

	FUNDING SOURCE	ACRES
CARL	Conservation and Recreation Lands	136,013.60
P2000	Preservation 2000	11,908.5
FF	Florida Forever	54,514.48

*Funding Source totals do not reconcile due to multiple programs used to purchase the same acreage within the THSF.

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

3. Proximity to Other Public Resources

Lands managed by state, federal, or local government for conservation of natural or cultural resources that are located within approximately 25 miles of the THSF are included in [Exhibit G] as well as the table below:

Table 2. Nearby Significant Public Conservation Lands

Apalachicola National Forest	USFS	Adjacent north
Apalachicola National Estuarine Research Reserve	DEP	Adjacent south
Tate's Hell Wildlife Management Area	FWC	Adjacent west
Apalachicola River Wildlife and Environmental Area	FWC	Adjacent west
St. Marks National Wildlife Refuge	USFWS	1 mile east
Ochlockonee River State Park	DRP	2 miles east
Dr. Julian G. Bruce St. George Island State Park	DRP	4 miles south
Jeff Lewis Wilderness Preserve	TNC	5 miles southeast
Apalachicola River Water Management Area	NWFWMD	5 miles west
John S. Phipps Preserve	TNC	8 miles southeast
Box-R Wildlife Management Area	FWC	10 miles southwest
Bald Point State Park	DRP	12 miles southeast
Cape St. George State Reserve	DRP	12 miles southwest

St. Vincent National Wildlife Refuge	USFWS	15 miles southwest
St. Joseph Bay State Buffer Preserve	DEP	20 miles southwest
Edward Ball Wakulla Springs State Park	DRP	21 miles northeast
Tallahassee-St. Marks Historic Railroad State Trail	DRP	22 miles north
Wakulla State Forest	FFS	22 miles northeast
Lake Talquin State Forest	FFS	24 miles north

DRP – Florida Department of Environmental Protection, Division of Recreation and Parks

DEP – Florida Department of Environmental Protection

FFS – Florida Forest Service

USFS – United States Forest Service

USFWS – United States Fish & Wildlife Service

FWC – Florida Fish and Wildlife Conservation Commission

TNC – The Nature Conservancy

NWFWMD – Northwest Florida Water Management District

4. Property Acquisition and Land Use Considerations

The majority of the property was purchased under the Conservation and Recreation Lands Program (CARL), beginning with the first purchase on February 8, 1994, and continuing to the present. The NWFWMD, through the Surface Water Improvement and Management (SWIM) Program, initiated interest in the Tate's Hell property. Protection and improvement of the water quality and aquatic habitat of East Bay drove the decision to include THSF as a priority project under the Save Our Rivers Land Acquisition Program. Ultimately, the DEP led the acquisition effort under the CARL Program, utilizing some funds transferred from the NWFWMD for acquisition of approximately 24,706 acres. Subsequent to that purchase, the DEP acquired an additional 165,822.08 acres, under the CARL and Florida Forever Programs. FFS purchased an additional 11,908.50 acres with its Preservation 2000 and Florida Forever in-holdings and addition funds. Efforts to acquire additional lands in the area continue. Table 3 summarizes the acquisition history of the present state forest boundaries. These parcels are assigned to the FFS for management under Lease Agreement #4041.

Table 3. Parcel Acquisition

	Parcel Name	Deed Date	Lease Date	Acres (County)
1	Glawson	2/8/1994	3/13/1995	24,706.00 (Franklin)
2	MacDonald	6/14/1995	11/20/1995	42,727.28 (Franklin)
3	TPL/Glawson	1/27/1995	6/4/1996	1,308.90 (Franklin)
4	Coastal Timber	6/13/1996	8/8/1997	17,972.60 (Franklin)
5	Southern Pine Planation of Georgia	7/2/1996	8/8/1997	7,358.50 (Franklin)
6	Southern Pine Planation of Georgia	7/2/1996	8/8/1997	7,598.10 (Liberty)
7	Christian/Wooten	9/12/1996	8/8/1997	1,316.10 (Franklin)
8	Christian/Wooten	9/12/1996	8/8/1997	213.50 (Franklin)

9	New River (TNC/Dennis)	10/25/1996	8/8/1997	2,089.00 (Franklin)
10	New River (TNC/Dennis)	10/25/1996	8/8/1997	540.00 (Liberty)
11	Rex Lumber	10/28/1996	8/8/1997	20,691.00 (Franklin)
12	Rex Lumber	10/28/1996	8/8/1997	3,229.00 (Liberty)
13	H.K. Johnson	12/30/1996	8/8/1997	112.60 (Franklin)
14	J.E. Corry/UF	12/30/1996	8/8/1997	1,030.10 (Franklin)
15	Yent Bayou	2/14/1997	8/8/1997	363.00 (Franklin)
16	St. Joe	7/19/1999	1/21/2000	3,742.47 (Franklin)
17	St. Joe	7/19/1999	1/21/2000	2,971.68 (Franklin)
18	St. Joe	7/19/1999	1/21/2000	2,893.85 (Liberty)
19	St. Joe	7/19/1999	1/21/2000	3,644.45 (Liberty)
20	St. Joe	9/25/2001	3/11/2003	3,413.97 (Franklin)
21	Profundus Holdings INC.	6/16/2003	11/17/2003	503.00 (Liberty)
22	Profundus Holdings INC.	6/16/2003	11/17/2003	36,750.70 (Franklin)
23	St. Joe – Crooked River	12/24/2003	4/20/2004	13,260.10 (Franklin)
24	New River	4/5/2005	6/12/2018	4,000.68 (Franklin & Liberty)

DOF P2000	11,908.50
CARL/P2000	136,013.60
FLORIDA FOREVER	54,514.48
TOTAL ACRES	202,436.58

B. Management Authority, Purpose, and Constraints

1. Purpose for Acquisition / Management Prospectus

Acquisition of THSF began in 1994 and continued, utilizing funding from Preservation 2000, Conservation and Recreation Lands, and Florida Forever. The goals and objectives defined by these acquisitions include:

- Conservation of lands supporting native, relatively unaltered flora or fauna representing a natural area unique to, or scarce within, a region of Florida or larger geographical area,
- Conservation of lands supporting habitat critical to providing significant protection for an endangered or threatened species of plant or animal,
- Prevention of future degradation of the waters of the Apalachicola Bay Aquatic Preserve by preventing future commercial and residential development that might degrade water quality in the streams emptying into Apalachicola Bay,
- Provision of opportunities for recreational activities that are compatible with the protection of the rare and sensitive resources, and

- Restoration of altered ecosystems to correct environmental damage that has already occurred.
- Conservation of critical forest habitats.

2. Degree of Title Interest Held by the Board

The Board of Trustees of the Internal Improvement Trust Fund (TIITF) holds fee simple title.

3. Designated Single or Multiple-Use Management

THSF is managed under a multiple-use concept by the FFS, under the authority of Chapters 253 and 589, Florida Statutes. The FFS is the lead managing agency as stated in TIITF Management Lease Numbers 4041.

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

4. Revenue Producing Activities

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

- *Timber Harvests* – Timber harvests on THSF will be conducted on a regular basis to improve forest health, promote wildlife habitat, restore plant communities, and provide other benefits.
- *Recreation Fees* – Fees are currently collected for day use, camping (both walk-up and through online reservation system), annual hunt camps, off-highway vehicle trail use, and miscellaneous commercial vendor permits.
- *Apiaries* – Annual fees are currently collected for 79 apiaries on the forest.
- *Other miscellaneous* – Other miscellaneous forest products including but not limited to worm harvesting (grunting), and firewood permits are sold each year on the forest, and other miscellaneous forest products may be considered.

5. Conformation to State Lands Management Plan

Management of the forest under the multiple-use concept complies with the State Lands Management Plan and provides optimum balanced public utilization of the property.

Specific authority for the FFS's management of public land is derived from Chapters 589, 259 and 253, Florida Statutes.

6. Legislative or Executive Constraints

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

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

7. Aquatic Preserve / Area of Critical State Concern

The majority (91%) of THSF is located in Franklin County, with a smaller percentage (9%) located in Liberty County. Franklin County was designated an Area of Critical State Concern from 1985-1994 and continues to be monitored by the Department of Community Affairs for post designation implementation. Apalachicola Bay, including East Bay, is designated as a State Aquatic Preserve. Water from within the current THSF boundary drains into East Bay, St. George Sound, and the Apalachicola River, with the majority of the discharge into East Bay, the primary nursery area of Apalachicola Bay.

C. Capital Facilities and Infrastructure

1. Property Boundaries Establishment and Preservation

THSF boundary lines, 187 miles total, are managed by state forest personnel in accordance with the guidelines of the State Forest Handbook (Exhibit B).

2. Improvements

Major FFS facilities on THSF include the state forest headquarters/Carrabelle Forestry Station office, and equipment maintenance shop. Major recreation facilities include the Womack Creek Campground Bathhouse and multiple picnic pavilions. A complete list of facilities is attached to this plan [Exhibit E]

3. On-Site Housing

There are no residences located on THSF.

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

location with the possibility of more than one on-site housing location occurring if considered necessary by the Center Manager and approved by the Director.

4. Operations Infrastructure

a. Operations Budget

For Fiscal Year 2017-2018, the total annual budget for THSF was \$3,651,955.00. This amount includes salaries, expenses, contractual services, OPS, etc. A summary budget for THSF is contained in [Exhibit X]. Implementation of any of the activities within this management plan is contingent on availability of available funding, other resources, and other statewide priorities.

b. Equipment

To carry out the mission of the FFS, THSF maintains a diverse range of equipment such as road graders, loaders and backhoes, medium and heavy dozers, transports, two and four-wheel drive pickups, all-terrain vehicles, mowers, farm tractors, and a skiff. Additional equipment can be used from other resources throughout the Tallahassee Forestry Center, when needed, for management activities on THSF.

c. Staffing

Thirty (30) staff members are funded for THSF including an Operations Administrator, two (2) Forest Area Supervisors, two (2) Forestry Supervisor II's, three (3) Foresters, three (3) Forestry Technicians, three (3) Senior Forest Rangers and Forest Rangers, Park Rangers, and Equipment Maintenance Mechanics. THSF also currently employs two (2) OPS Park Ranger positions.

The Inmate Program plays a large part in many THSF projects. This cooperative effort is in conjunction with the Florida Department of Corrections, Franklin Correctional Institution. This four - to six-person crew is supervised by a Department Corrections Officer and is an effective way to achieve many of the objectives outlined in this plan.

D. Additional Acquisitions and Land Use Considerations

1. Alternate Uses Considered

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

2. Additional Land Needs

The acquisition of additional land within the optimal management boundary would facilitate restoration, maintenance, and management of the resources on THSF, and

would help ensure the protection of Apalachicola Bay, East Bay, St. George Sound, Ochlockonee Bay, and surrounding waters. [Exhibit C]

3. Surplus Land Assessment

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

It is the assessment of FFS staff that, at this time, all of the property within THSF is suitable and necessary for the management of THSF and none should be declared surplus.

4. Adjacent Conflicting Uses

There are two inholdings on the eastern side of the state forest that have been used, or are intended to be used, as either lime rock mines or for the mining of fossilized oyster shells. Potential conflicts include the effects of mining operations on the water and wetlands adjacent to the state forest.

Residential development of adjacent property and adjoining state roads may hinder prescribed burning due to smoke management concerns.

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

5. Compliance with Comprehensive Plan

This plan was submitted to the Board of County Commissioners in Franklin County and Liberty County for review and compliance with their local comprehensive plans. [Exhibit V]

6. Utility Corridors and Easements

There are currently three (3) entities that have easements on THSF. Duke Energy has several powerline right-of-way easements, Franklin County has a non-exclusive easement for ingress/egress on West River Road and a short portion of Gully Branch, and Carrabelle Rock has an ingress/egress easement located on SFR 16, Burnt Shanty Tram, and SFR 21 to access their property within THSF.

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. FFS does not consider THSF 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), to minimize habitat fragmentation, to limit disruption of

management activities, including prescribed burns, and to limit disruption of resource-based multiple use activities such as recreation.

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

E. Agency & Public Involvement

1. Responsibilities of Managing Agencies

The FFS is the lead agency responsible for the overall management of THSF. FWC has law enforcement responsibilities, enforces hunting regulations, cooperatively sets hunting season dates with FFS, and conducts other wildlife management activities with input from FFS.

FFS will cooperate with the DHR regarding appropriate management practices on historical or archaeological sites on the property as stated in Section 267.061, Florida Statutes. DHR will be notified prior to the initiation of any ground disturbing activities by the FFS or any other agency involved with the forest.

The NFWFMD will be consulted and involved in matters relating to water resources as appropriate.

2. Law Enforcement

Primary law enforcement responsibilities will be handled by law enforcement officers from FWC. Rules governing the use of THSF are stated in Chapter 5I-4 of the Florida Administrative Code. FWC will enforce fish and wildlife regulations and provide assistance in enforcing state forest rules. The FWC has an officer dedicated to patrol of and enforcement on THSF.

The Office of Agricultural Law Enforcement (OALE) will assist with open burning and wildfire investigations as needed. Additional assistance is provided by the Franklin County and Liberty County Sheriff's Offices as needed. In light of the current statewide budget limitations, FFS feels that law enforcement is adequate on THSF.

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

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

4. Public and Local Government Involvement

This plan has been prepared by FFS and will be carried out primarily by that agency. FFS responds to public involvement through liaison panels, 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 two reviews of management plan implementation in 2012 and 2017 [Exhibit U]. The review teams' recommendations were addressed in this plan, as appropriate.

The plan was developed with input from the THSF Management Plan Advisory Group and was reviewed at a public hearing on March 07, 2019. A summary of the advisory group's meetings and discussions, as well as written comments received on the plan, are included in [Exhibit W]. The Acquisition and Restoration Council (ARC) public hearing and meeting serve as an additional forum for public input and review of the plan.

5. Volunteers

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

6. Friends of Florida State Forest

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

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

III. Archaeological/Cultural Resources and Protection

A. Past Uses

Little commercial development occurred in the Tate's Hell area in the early 1800's with selective timber cutting and cattle grazing important to homesteaders. The present-day city of Carrabelle was essentially a hunting and fishing camp. By 1877, the town of Carrabelle was founded and catering to the growing timber industry which by the 1890s included turpentine extraction. From the early 1900's onward to the 1950's, cattle grazing, turpentine, and lumbering continued as major drivers of the local economy. In the 1920s, Harbeson City, north of Carrabelle, was the site of the county's largest sawmill with a peak capacity at 40,000 board feet per day. Tram lines reached out to blocks of old growth

longleaf and slash pine, but also included cypress and Atlantic white cedar to keep the mill supplied. Across the area, there were six (6) other small mills, but by 1939 the mills were operating at half capacity due to far fewer and more widely scattered blocks of old growth trees. Cattlemen continued to use pine savannahs for grazing, setting spring fires in the grassy understory to improve forage. About this time, the seafood industry developed commercial importance following improvements to refrigeration and transport.

In the early 1940's Camp Gordon Johnson was established in the locale as a sprawling U.S. Amphibious Training Center and became an important source of revenue and jobs during WWII. From the mid 1950's until state acquisition, forest industry owned and managed this land for timber production. During the 1960's and 1970's, the hydrology was substantially altered in an attempt to establish extensive tracts of pine plantations and to enhance the production of pine timber. These alterations involved the construction of roads and associated ditches, followed by planting of large dense stands of slash pine that were fertilized with phosphorus and nitrogen. Aerial photos from 1953 through 1999 illustrate the land alterations. Historic documents, aerial photographs, maps, and testimonies depict the Tate's Hell landscape prior to the 1950's as more open and grassy than at present. The network of roads established by forest industry has done much to increase public access to the area, making it a popular location for local residents to hunt and fish (FNAI, 2017).

B. Archaeological and Historical Resources

A review of information contained in the Florida Department of State, Division of Historical Resources, Florida Master Site file has determined there are 37 previously recorded archeological sites, one (1) bridge, two (2) historic cemeteries, and one (1) resource group on THSF. Currently, none of the known sites on THSF are listed in the National Register of Historic Places.

Table 4. Historical Sites on THSF

SITE ID	SITE NAME	SITE TYPE
FR00885	PILE OF CUPS	AR
FR00886	NORTH BEVERLY	AR
FR00887	BURNT BRIDGE DIPPING VAT	AR
FR00007	TOPSAIL BLUFF	AR
FR00751	PITCHER PLANT	AR
FR00753	WHISKEY GEORGE CREEK	AR
FR00785	DOT'S LANDING	AR
FR00827	USFS 90-3 APA/BUZZING WIRES	AR
FR00862	HIGH BLUFF HOMESTEAD	AR
FR00865	OXBOW BLUFF	AR
FR00866	OYSTER CAMP	AR
FR00869	TURTLE KILL	AR
FR00870	JOHN ALLEN RIDGE	AR
FR00871	POWERLINE RIDGE	AR
FR00872	CINDER PALACE	AR
FR00873	THOMPSON CEMETERY	CM
FR00874	APIARY POINT	AR
FR00875	LAURA'S CATTLE DIP	AR
FR00879	HARBESON CITY BRIDGE	AR

FR00880	AIRSTRIIP	AR
FR00900	CAMP GORDON JOHNSTON	RG
FR00920	GATOR CREEK BRIDGE	AR
FR00921	SPARKY'S GRAVE	AR
FR00923	BUCK SIDING	AR
FR00924	POPE PLACE	AR
FR00925	PARKER PLACE	AR
FR00926	DEEP CREEK STILL	AR
FR00927	LEWIS BLUFF BRIDGE REMAINS	AR
FR00929	NERO CREEK HOMESITE	AR
FR00930	OLD SCHOOL	AR
FR00931	GULLY BRANCH	AR
FR00932	ROCK LANDING	AR
FR00933	SQUIRREL ROAD DIPPING VAT	AR
FR00934	DEW DROP INN	AR
FR00935	MORGAN STILL	AR
LI00433	HIGH POINT HOMESTEAD	AR
LI00434	LOBLOLLY LANDING	AR
LI00435	COACHMAN LANDING	AR
LI00436	#97-02 APA	AR
FR01283	RIVER ROAD/TROUT CREEK	BR
LI00456	HENRY J. BROWN GRAVE SITE 1902	CM

See [Exhibit I] for a complete list of all archeological sites on THSF.

C. Ground Disturbing Activities

Representatives of DHR and Florida Natural Areas Inventory will be consulted prior to the initiation of any proposed significant ground disturbing activity, not listed in this plan, by FFS or any other public agency. 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" [Exhibit J] and will comply with all appropriate provisions of Section 267.061(2) Florida Statutes. Ground disturbing activities not specifically covered by this plan will be conducted under the parameters of the "List of ARC / Division of State Lands Approved Interim Management Activities".

D. Survey and Monitoring

Currently, four (4) THSF staff are trained by DHR as archaeological resource monitors. FFS will pursue opportunities for getting additional personnel trained. 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, as well as any protection measures that might be required. 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.

As information becomes available, and as staffing allows, any known archaeological and historical sites will be identified on maps to aid state forest and law enforcement personnel in patrolling and protecting sites. Applicable surveys will be conducted by FFS staff or

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

IV. Natural Resources and Protection

A. Soils and Geologic Resources

1. Resources

Soil information for THSF was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). The THSF lies within the boundaries of Franklin and Liberty Counties, which was surveyed by the United States Department of Agriculture, Natural Resource Conservation Service:

- Franklin County Survey Area Data – Version 13, Sep. 28, 2016
- Liberty County Survey Area Data – Version 21, Sep. 28, 2016

THSF consists of 71 different soils [Exhibit K]. The predominant soils listed by the NRCS include: Scranton fine sand, (Scranton sand, slough), and Rutledge fine sand.

2. Soil Protection

Currently, the only known soil erosion problem at THSF occurs on the bank of the Ochlockonee River at the Womack Creek Campground. This type of river bank erosion is common along the outside bends of significant rivers during major flood stage events and is not a direct result of management activities. Since this erosion is a potential threat to recreational infrastructure, it is discussed in the Public Recreation Section of this plan.

Management activities will be executed in a manner to minimize soil erosion. As problems arise, corrective action will be implemented by FFS staff under the direction of the FFS Forest Hydrology section in conjunction with recommendations as contained in the most current version of the Silviculture Best Management Practices Manual.

B. Water Resources

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

See [Exhibit M] for a map of the water resources at THSF.

1. Resources

The predominant hydrologic feature within the state forest is Tate's Hell Swamp, which drains into Apalachicola River and Bay. The New, Ochlockonee, and Crooked Rivers are the remaining major rivers that adjoin THSF. Numerous other creeks and drainages exist throughout the forest including such named creeks as: Alligator, Bear, Cow, Deep, Fish, Gully Branch, Graham, Sunday Rollaway, Pine Log, Roberts, Sanborn, Sandbank, Trout, Womack, and two Juniper Creeks.

There is only one natural lake on THSF, and the state property is actually only part of the bottom and a small piece of shoreline. Lake McKissack is located ½ mile east of the THSF Headquarters just north of Airport Road. Several ponds are scattered throughout the forest. Large, shallow ponds are found on the High Bluff Tract just inland from the old dunes. These ponds dry up completely during dry periods. Other smaller, but similar, ponds are found throughout the forest.

2. Water Classification

The Florida Department of Environmental Protection, Standards Development Section reports the Apalachicola River and Bay are designated as Outstanding Florida Waters (OFW's) and are the highest priority water bodies under the NFWFMD's SWIM Program. The Apalachicola River is classified as Class-III waterway with designated uses for recreation and propagation and maintenance of a healthy, well balanced population of fish and wildlife. Apalachicola Bay is a State Aquatic Preserve and Class II water with designated uses such as shellfish propagation and harvesting.

The tributaries to East Bay are designated as Class II waters. These include Cash Creek, High Bluff Creek, Rake Creek, Whiskey George Creek, Juniper Creek and Doyle Creek. All the other waters of the forest are designated as Class III waters. The main tributaries carrying water from the Tate's Hell Swamp to Apalachicola River include Graham Creek, Deep Creek, and Fort Gadsden Creek. [Exhibit L]

3. Water Protection

Water resource protection measures, at a minimum, will be accomplished through the use of Best Management Practices (BMPs) as described in the most current version of Silviculture Best Management Practices Manual. In addition, if future soil and water resource problems should arise, they will be immediately assessed, and the appropriate action will be proposed and implemented under the direction of the FFS's Forest Hydrologist and/or Watershed Specialist.

The THSF falls within the jurisdiction of the NFWFMD. The FFS, through its Forest Management Bureau, may work with the NFWFMD district to monitor levels and quality of ground and surface water resources. Any activities requiring water management district permits will be handled accordingly.

4. Swamps, Marshes, and Other Wetlands

The THSF contains approximately 153,754 acres of hydric communities such as wet prairie, basin, dome, and floodplain swamps, bottomland forest, baygall, floodplain and

depression marsh, and blackwater stream. Tate's Hell Swamp plays an important role in the function of the marshes found in the upper bays south of the forest. These marshes serve as nursery areas for Apalachicola Bay. The quality and quantity of freshwater discharged from the swamp to these marshes is critical to maintain conditions that sustain the larval and juvenile aquatic and estuarine organisms utilizing these areas. Impacts documented by Dr. Skip Livingston during the 1970's and 1980's indicate the close connection between land management activities and survival of the juvenile and larval species utilizing the marshes of the upper bay.

5. Wetlands Restoration

Wetland restoration objectives on the state forest include erosion control, restoration of hydrology and/or hydroperiod, 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, non-native invasive species control, site preparation and re-vegetation with native wetland species, and project monitoring. These activities may be conducted individually or concurrently; implemented by FFS personnel or by non-FFS personnel under mitigation or grant contractual agreements. Wetland restoration projects should be conducted in conjunction with other restoration activities indicated elsewhere in this plan.

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

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

Currently, THSF does not reside in an active BMAP zone.

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

A BMAP is developed as part of the Department's TMDL Program, and represents the collaborative efforts of stakeholders to identify current and planned management actions to achieve pollutant load reductions required by the TMDL.

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.

7. Tate's Hell Hydrologic Restoration Plan

In 2010, the FFS and NFWFMD completed the Tate's Hell State Forest Hydrologic Restoration Plan. Depending on funding, this comprehensive plan is intended to be implemented over a 10-20-year period, and outlines the work needed to accomplish the following overall goals:

- Improve the water quality of surface water flows and runoff discharged to East Bay, Apalachicola Bay, and surrounding waters
- Restore historical surface water drainage patterns
- Enhance wetland hydrology and function
- Restore a mix of native ecological communities

And with the following objectives:

- Prioritize areas within THSF for hydrologic restoration
- Develop hydrologic restoration plans for each surface water drainage basin, including locations for proposed hydrologic improvements and estimates of construction costs
- Develop guidelines for environmental monitoring and long-term management of restoration areas
- Improve interagency communication and coordination related to hydrologic restoration activities

To date, nine (9) hydrologic restoration projects have been completed, and funding has been awarded through the RESTORE Council for the restoration of an additional 13 high priority basins over the next five (5) years.

C. Wildlife Resources

1. Threatened and Endangered Species

The intent of FFS is to manage THSF in a fashion 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 will be used, as necessary, to protect or increase rare, threatened, and endangered species, as applicable for both plants and animals.

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

Scientific Name	Common Name	FNAI Global Rank	FNAI State Rank	Federal Status	State Status
AMPHIBIANS					

<i>Ambystoma cingulatum</i>	Frosted flatwoods salamander	G2	S2	T	FT
<i>Ambystoma tigrinum</i>	Tiger salamander	G5	S3	PS	N
<i>Desmognathus auriculatus</i>	Southern dusky salamander	G4	S1S2	N	N
<i>Lithobates capito</i>	Gopher frog	G3	S3	N	N
REPTILES					
<i>Alligator mississippiensis</i>	American alligator	G5	S2	N	FT(S/A)
<i>Crotalus adamanteus</i>	Eastern diamondback rattlesnake	G4	S3	N	N
<i>Drymarchon couperi</i>	Eastern indigo snake	G3Q	S3	T	FT
<i>Eumeces anthracinus pluvialis</i>	Southern coal skink	G5	S3	N	N
<i>Gopherus polyphemus</i>	Gopher tortoise	G3	S3	C	ST
<i>Lampropeltis getula meansi</i>	Apalachicola kingsnake	G5T2Q	S2	N	N
<i>Macrochelys temminckii</i>	Alligator snapping turtle	G3G4	S2	N	N
MAMMALS					
<i>Corynorhinus rafinesquii</i>	Southeastern big-eared bat	G3G4	S2	N	N
<i>Myotis austroriparius</i>	Southeastern bat	G4	S3	N	N
<i>Neovison vison halilimnetes</i>	Gulf salt marsh mink	G5T3	S3	N	N
<i>Peromyscus floridanus</i>	Florida mouse	G3	S3	N	N
<i>Sciurus niger niger</i>	Southeastern fox squirrel	G5T3	S3	N	N
BIRDS					
<i>Peucaea aestivalis</i>	Bachman's sparrow	G3	S3	N	N
<i>Ammodramus maritimus peninsulae</i>	Scott's seaside sparrow	G4T3Q	S3	N	ST
<i>Aramus guarauna</i>	Limpkin	G5	S3	N	N
<i>Cistothorus palustris marianae</i>	Marian's marsh wren	G5T3	S3	N	ST
<i>Egretta caerulea</i>	Little blue heron	G5	S4	N	ST
<i>Egretta rufescens</i>	Reddish egret	G4	S2	N	ST
<i>Egretta thula</i>	Snowy egret	G5	S3	N	N
<i>Egretta tricolor</i>	Tricolored heron	G5	S4	N	ST
<i>Elanoides forficatus</i>	Swallow-tailed kite	G5	S2	N	N
<i>Eudocimus albus</i>	White ibis	G5	S4	N	N
<i>Falco sparverius paulus</i>	Southeastern American kestrel	G5T4	S3	N	ST
<i>Haliaeetus leucocephalus</i>	Bald eagle	G5	S3	N	N
<i>Mycteria americana</i>	Wood stork	G4	S2	N	FT
<i>Pandion haliaetus</i>	Osprey	G5	S3S4	N	N

<i>Picoides borealis</i>	Red-cockaded woodpecker	G3	S2	E	FE
FISH					
<i>Acipenser oxyrinchus desotoi</i>	Gulf sturgeon	G3T2	S2	LT	FT
<i>Micropterus cataractae</i>	Shoal bass	G3	S1	N	N
PLANTS					
<i>Andropogon arctatus</i>	Pine-woods bluestem	G3	S3	N	T
<i>Asclepias viridula</i>	Southern milkweed	G2	S2	N	T
<i>Baptisia simplicifolia</i>	Scare weed	G3	S3	N	T
<i>Gentiana pennelliana</i>	Wiregrass gentian	G3	S3	N	E
<i>Hymenocallis henryae</i>	Henry's spider lily	G2	S2	N	E
<i>Justicia crassifolia</i>	Thick-leaved water willow	G3	S3	N	E
<i>Liatris provincialis</i>	Godfrey's blazing star	G2	S2	N	E
<i>Linum westii</i>	West's flax	G1	S1	N	E
<i>Lupinus westianus</i> var. <i>westianus</i>	Gulf coast lupine	G3T3	S3	N	T
<i>Lythrum curtissii</i>	Curtiss loosestrife	G1	S1	N	E
<i>Macbridea alba</i>	White birds-in-a-nest	G2	S2	T	E
<i>Macranthera flammea</i>	Hummingbird flower	G3	S2	N	E
<i>Nolina autopocarpa</i>	Florida beargrass	G3	S3	N	T
<i>Nyssa ursine</i>	Bog tupelo	G2	S2	N	N
<i>Parnassia caroliniana</i>	Carolina grass-of-parnassus	G3	S2	N	E
<i>Pheobanthus tenuifolius</i>	Narrow-leaved phoeobanthus	G3	S3	N	T
<i>Physotegia godfreyi</i>	Apalachicola dragon-head	G3	S3	N	T
<i>Pinguicula ionantha</i>	Godfrey's butterwort	G2	S2	T	E
<i>Polygonella macrophylla</i>	Large-leaved jointweed	G3	S3	N	T
<i>Rhexia parviflora</i>	Small flowered meadow beauty	G2	S2	N	E
<i>Rhynchospora stenophylla</i>	Narrow-leaved beakrush	G4	S2S3	N	LT
<i>Ruellia noctiflora</i>	Night flowering petunia	G3?	S2	N	E
<i>Sarracenia leucophylla</i>	White-top pitcher plant	G3	S3	N	LE
<i>Scutellaria floridana</i>	Florida skullcap	G2	S2	T	E

*** STATUS/RANK KEY**

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

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

Plants: LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered

or threatened pursuant to the U.S. Endangered Species Act; LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered; N = Not currently listed, nor currently being considered for listing.

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

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

2. Florida Natural Areas Inventory

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

a. Element Occurrences

The Florida Natural Inventories reports several documented Element Occurrences of rare or endangered species within the vicinity of the property. [Exhibit N]
Documented species are listed in Table 5.

b. Likely and Potential Habitat for Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the THSF. See [Exhibit N] for more information.

c. Land Acquisition Projects

THSF is located within the St. Joe Timberland – Tate’s Hell/Carrabelle Tract and the Dickerson Bay/Bald Point Florida Forever BOT Projects, which are part of the State of Florida’s Conservation and Recreation Lands land acquisition program. [Exhibit H]

Other Florida Forever Projects within Franklin County include: Pierce Mound Complex. Within Liberty County: Apalachicola River; Hosford Chapman’s Rhododendron Protection Zone, however, the additional Florida Forever projects in Franklin and Liberty Counties are not within the same Section, Township, and Range as THSF.

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 any expansions or alterations are made to any facilities.

3. Florida Fish and Wildlife Conservation Commission

The Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute (FWRI) reports numerous records of listed species occurrences or critical habitats within the confines of the property. This includes state and federally listed endangered or threatened species. [Exhibit O]

Other findings by the FWC include:

- a.** The property is located adjacent to and within multiple Strategic Habitat Conservation Areas.
- b.** THSF is located within an area of Species Richness.

- c. Multiple Priority Wetlands are located on and near THSF.
- d. FWC's response includes a map indicating multiple species locations.

These data represent only those occurrences recorded by FWC staff and other affiliated researchers. The database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species are not entered into the database on a site-specific basis. Therefore, one should not assume that an absence of occurrences in their database indicates that species of significance do not occur in the area. [Exhibit O]

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

The FWC recommends the review of management guidelines in FWC's published Species Action Plans for the management of imperiled, rare, and focal species. The FWC Species Action Plans provide beneficial resource guidelines for habitat management and monitoring of the respective species. For reference, the FWC Species Action Plans can be accessed at this web address:
<http://myfwc.com/wildlifehabitats/imperiled/species-action-plans/>

4. Game Species and Other Wildlife

Wildlife management will play an important role in the management of resources on THSF. Most of the state forest is part of the Tate's Hell Wildlife Management Area (THWMA), with the Womack Creek Tract a separate unit within the THWMA. About 3,900 acres of THSF lies within the Apalachicola River Wildlife and Environmental Area. FWC provides cooperative technical assistance in managing the wildlife and fish populations, setting hunting seasons, establishing bag and season limits, and overall wildlife and fish law enforcement.

Tate's Hell State Forest provides habitat for many different species of wildlife. More common species include: white tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), beaver (*Castor canadensis*), Florida black bear (*Ursus americanus*), bobcat (*Lynx rufus*), red fox (*Vulpes vulpes*), osprey (*Pandion haliaetus*), wild turkey (*Meleagris gallopavo*), as well as numerous species of wading birds, snakes, and turtles.

FFS and FWC cooperatively maintain approximately 105 acres of permanent wildlife openings and planted food plots on the THSF. Wildlife openings and food plots will be established and maintained in accordance with the FFS State Forest Handbook.

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

5. Survey and Monitoring

Species-specific surveys for state or federally listed wildlife species may be developed when necessary, with assistance from FWC. Such plans will be consistent with rule and statute promulgated for the management of such species. Continued biological surveys will be conducted to determine locations of these species. FFS may seek assistance from universities, FWC, FNAI, and other agencies to conduct surveys.

While no species-specific monitoring plans have been developed, information gathered has been used to prioritize stands for habitat improvement projects. Future species-specific management plans and monitoring protocols will be developed by the FFS Forest Management Bureau and/or State Forest Ecologist, with input from the NFWFMD and FWC, as needed.

a. Red-cockaded woodpecker

RCW clusters exist on portions of Tate's Hell and are believed to have colonized from the Apalachicola National Forest (ANF) population, though many clusters on the forest have formed around old, residual longleaf pines that were never cut by forest industry. Although a distinct population from those at ANF, the birds move freely between the THSF and ANF populations, thus reducing the potential for a genetic bottleneck of the THSF population. This population is managed in cooperation with FWC according to the THSF RCW Operation Plan, which outlines survey, monitoring, and management recommendations. This operational plan will feed into the RCW Management Plan currently under development.

b. Gopher Tortoises

Surveys for gopher tortoise burrows have been done by FFS and FWC staff intermittently, as needed. All surveys are done in cooperation with FWC. Surveys have been completed in upcoming timber sale areas.

c. Frosted flatwoods salamander

Surveys of ephemeral ponds have been conducted to detect breeding activity. Additional frosted flatwoods salamander and larval amphibian dip net surveys may be planned in cooperation with FWC as staffing allows.

d. Listed Plant Species

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

e. Other Biota Surveys

Surveys are done as time and staffing allow. High quality plant communities continue to have ad hoc surveys for both invasive weeds and listed plants.

Other surveys that have been conducted and may continue include; secretive marsh bird surveys in the breeding season (potential for identifying black rails), herpetofauna drift fence surveys in different habitat types, breeding bird point count surveys (trend data especially Bachman's sparrow), and white-tailed deer spotlight surveys.

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

D. Sustainable Forest Resources

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

E. Beaches and Dune Resources

No beaches and 0.90 acre of beach dune occur on the THSF.

F. Mineral Resources

There are outstanding mineral interests on portions of THSF. Mineral resources within this forest include sand and lime rock. No estimate of their quality and quantity is currently available. As indicated by the Franklin County Soil Survey, more than 3,000 acres of THSF have lime rock within five (5) feet of the surface.

G. Unique Natural Features and Outstanding Native Landscapes

There are at least ten (10) artesian wells within the state forest.

Dwarf Cypress – The Dwarf Cypress are one of the most unique features of this area. These are known as Dwarf, Bonsai, or Hat-Rack Cypress. Many of these trees are more than 250 years old, although they typically grow to a height of only 15 feet. No one is exactly sure what causes the cypress in this area to be dwarfed. The trees are not genetically different from other pond-cypress trees in the area, and seeds from these trees will grow to normal heights when planted on other sites. There are similar stands of cypress in southern Florida that are dwarfed due to a layer of bedrock close to the surface that does not allow the trees to grow properly. The soil in this area is very deep before hitting bedrock, but there is a layer of hard clay that may prevent the cypress roots from growing deeper. The soil here is also very low in nutrients, as evidenced by the many carnivorous plants in the area. This site is generally thought to have historically been flooded for the majority of the year, further reducing the ability of these trees to grow.

Scrub (Ancient Dunes) – There are 683 acres of scrub on the High Bluff Tract of THSF. These old dunes are sometimes as tall as 60' above sea level, making them some of the highest points in Franklin County. These dunes contain a wide variety of rare plants. Some of these plants are found only on the scrub of Franklin and Gulf Counties. Most of the scrub sites have been excluded from fire for many years. These areas have dense stands of sand pines that lean away from the coast. This is a result of the weak root system of the sand pines combined with the storms that hit the area every few years.

New River Headwaters – The headwaters of the New River are a spectacular and largely undisturbed landscape. The river meanders through areas of dwarf cypress, and along high banks with large old growth pines. Large areas of intact wet savannas are present in many areas just off of the banks of the river. There are very few access points to this section of river, and little, if any, sign of civilization is visible. The New River experiences drastic changes in water level depending on local rainfall. In dry periods, the river is a small trickle or a series of pools; however, after large rain events, it can expand to several hundred feet wide. The riverbed makes for an excellent hiking trail during dry periods and a good canoe trail during times of moderate flow.

Wet Savannas – The wet savannas of the southeastern Coastal Plain are one of the most biologically diverse plant communities in the world. These areas are dominated by thick wiregrass and pitcher plants. In the spring and fall, they are full of a wide variety of wildflowers. Walker and Peet (1983) stated that “savannas are remarkably species-rich with up to 42 species/0.25 m².” Draining and conversion to pine plantations have heavily damaged most of the wet savannas on the forest, but a few intact areas still remain. These areas are overgrown, but the repeated use of growing season fire and eventual restoration of natural hydrology will make these areas much like they were hundreds of years ago. As timber harvests have occurred in former savannah areas, they are being restored back to their previous condition.

Floodplain Forests – The Ochlockonee and Crooked Rivers make up much of the east boundary of THSF. These rivers are primarily fresh water, but they do get slightly saltier during dry periods or extreme tides. The floodplain forests along these rivers extend as much as a mile inland. There has been very little human influence in these areas other than limited timber removal in the late 1800's. The floodplain forests consist of dense stands of oaks, hickories, and other hardwoods. Some of these trees have diameters exceeding three feet. The understory is open in most areas except for where the older trees have been killed by storms or disease. Travel through these areas is difficult due to the very deep mud and the many meandering streams.

H. Research Projects / Specimen Collection

Research projects may be performed on the forest on a temporary or permanent basis for the purpose of obtaining information that furthers the knowledge of forestry and related fields. FFS cooperates with other governmental agencies, non-profit organizations, and

educational institutions, whenever feasible, on this type of research. FFS will consider assisting with research projects when funds and manpower are available.

All research to be considered on THSF must be considered in accordance with the guidelines stated in the State Forest Handbook. Any requests for research should be submitted in writing to the appropriate field staff to be forwarded to the Forest Management Bureau for approval. Requests must include: a letter outlining the purpose, scope, methodology, and location of the proposed research. Requests are subject to review by FFS Foresters, Biologists, 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 THSF staff. Other special conditions may be applicable, and the authorization may be terminated at any point if the study is not in compliance.

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

- Ortegren, Maxwell, & Masson, University of West Florida - Atlantic white cedar research May - December 2012
- Gerson & team, University of Massachusetts, Amherst – annual migratory bird surveys March 2016 - 2018
- Klassen & team, University of Connecticut – fungus growing ant research May - October 2016
- Fishbein & Ksepka, Oklahoma State University - Asclepias (milkweeds) sampling May - October 2016
- Kaplan & Team, University of Florida/Environmental Engineering - EPA wetland sampling May - October 2016
- McCown & team, FWC Research - Florida black bear demographic survey April 2016 - 2018
- Burkett-Cadena, University of Florida/IFAS – biting midges research June - November 2017
- Howell & McAlpin, FWC – alligator hatchlings collection September - November 2017
- King & team, Louisiana F&WL Research Unit, USGS – dwarf cypress site visit October 2017
- Miller & Gott, Florida Museum of Natural History – Florida Duskywings (Lepidoptera/butterflies) March - November 2018
- Weakley & team, North Carolina Botanical Garden, Chapel Hill - Trichostema (aromatic herb) March - November 2018

CFEOR Cooperative:

- Conserved Forests Ecosystems: Outreach & Research, University of Florida, FFS perennial member

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. This includes areas such as known sensitive species locations; archaeological, fossil, and historical sites; ecotones, and wetlands.

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

V. Public Access and Recreation

The primary recreation objective is to provide the public with dispersed outdoor recreational activities that are dependent on the natural environment. FFS will continue to promote and encourage public access and recreational use by the public while protecting resources and practicing multiple-use management. Recreation activities available on THSF include hunting, fishing, birding, nature study, picnicking, hiking, biking, horseback riding, and camping.

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 Recreational Opportunities

THSF provides public access via CR 67, SR 65 and US 98. There is also access to THSF from the north through the Apalachicola National Forest. There are a wide variety of recreational opportunities that are available at THSF. Hiking, horseback riding, biking, picnicking, birding, nature study, fishing, boating, and hunting can be enjoyed using existing service roads, old road beds, and established trails. THSF is part of the Big Bend Scenic Byway, and the FFS Trailwalker Program. See Exhibit E for a map of the Facilities and Improvements.

1. THSF currently has over 850 miles of non-paved roads.
2. Hunting on over 200,000 acres.
3. Fishing along seemingly endless miles of river and stream systems.
4. Numerous maintained boat launches for motorized or non-motorized entry.
5. Self-guided paddling opportunities.
6. The High Bluff Hiking trail runs along a set of ancient dunes paralleling the coast of St. George Sound. The trail has been expanded to create one (1) large (9.2 mile) or two (2) small (5.5 and 3.7 mile) loops and has multiple trailheads with parking at each end and can be accessed from US 98.
7. The Dwarf Cypress Boardwalk offers visitors a unique view of the rare dwarf cypress; some estimated to be over 250 years old. The boardwalk is approximately 300 ft. long with a covered deck that rises 30 ft. above the stand of dwarf cypress. The site also has a kiosk that provides information about dwarf cypress and local hydrology. The boardwalk is easily accessible off Dry Bridge Road from either SR 65 or US 98.

8. The Cash Creek Day Use Area / Campground is a popular destination for many local visitors and is directly off SR 65. This area offers three (3) primitive campsites, a boat ramp and dock with access to East Bay and the Apalachicola River. ADA accessible parking and a double-vault restroom are also available.
9. Womack Creek Recreation Area/Campground offers eight (8) primitive camping sites and three (3) electric RV accessible sites. The area has boat ramp access to the Ochlockonee River, and facilities include a bathhouse and picnic pavilion.
10. Miller Landing Day Use Area located at the end of Bear Creek Road offers a canoe launch to East Bay and the adjacent marsh, which is an excellent area for seasonal birding.
11. The Gully Branch Day Use Area is located on the New River and Gully Branch Road, off CR 67. This site contains a large pavilion with picnic tables, several sheltered picnic tables, a vaulted restroom, and a boat ramp.
12. There are currently 54 sites designated for primitive camping in THSF [Exhibit E]. Each campsite contains a picnic table, free standing grill, and campfire ring. Primitive campsites are located throughout the forest. Most are located on rivers or streams. Most campsites have canoe-launching areas. Twenty-nine of these campsites are leased as hunt camps during hunting season.
13. THSF has 150 miles of forest roads that are open to Off-highway Vehicles (OHV). The OHV trail, camp ground, and trail head were funded through the T. Mark Schmidt Off-Highway Vehicle Recreation Grant Program. This area is on the east/central portion of the forest and is accessible from Highway 67 north of Carrabelle. Riders may purchase annual permits or a three-day pass to ride in this area. Trail users are predominately UTV and enduro-motorcycles. Both prefer the open road systems and scenic vistas.

B. Planned Recreational Opportunities

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

Erosion to the bank of the Ochlockonee River at the Womack Creek Campground near the bathhouse will be monitored and evaluated for possible solutions. Options may include river bank stabilization or removal of the bathhouse and construction of a new facility in a more stable location.

Installing a vaulted restroom at the Vinard's Place Day Use Area may be considered depending on assessed needs and funding availability.

A wildlife and scenic viewing platform is being considered at the Billy's Road savannah site in the New River Tract.

A one-mile nature trail is planned along Cash Creek with trailhead at the Cash Creek Recreation Area. The trail will feature lookout vistas, benches, and potential fishing spots.

Further assessment, public interest, and funding availability will determine the addition of primitive camping at Miller's Landing on East Bay in the High Bluff Tract. Future plans may include improving the boat ramp.

Additional primitive campsites are planned at the Cash Creek Recreation Area. Electric hookups for RV's may be considered based on demand and depending on funding.

C. Hunter Access

Hunting is an important recreational activity on 100% of THSF. THSF is open to regulated hunting. The FWC recommends hunting season dates for FFS approval. The FWC is responsible for establishing bag and possession limits in consultation with FFS. There are three established Wildlife Management Areas on the forest; Tate's Hell WMA, Tate's Hell Womack Creek Unit WMA, and Apalachicola River WEA.

D. Education

FFS may create partnerships with local K-12 schools and/or universities for the purpose of development and implementation of educational opportunities on THSF. Additionally, FFS intends to establish an educational program for the public which will highlight to visitors the natural environment and the conservation of THSF.

FFS works with Franklin County Consolidated Schools offering forestry internships and mentoring programs for juniors and seniors. Students participate in various forest management activities during the summer, benefiting from hands-on experience and can earn credits on scholarship applications.

Recently, Franklin County Schools began offering scholarships for students interested in a forestry career, to earn a forestry degree from a Florida University, and start a career in Franklin County. Portions of THSF annual revenue that is returned to Franklin County Schools in lieu of taxes, is the funding source for this scholarship.

VI. Forest Management Practices

A. Prescribed Fire

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

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

A Fire History spreadsheet detailing the recent history of prescribed burns and wildfires at THSF is available in [Exhibit P].

Personnel and equipment stationed at THSF will be used for pre-suppression practices, establishment of firebreaks, rehabilitation of existing firelines, construction of new firelines, maintenance of perimeter firebreaks, and prescribed burning.

The annual forest prescribed burning program produces multiple benefits. The purposes of prescribed burning on THSF are to facilitate forest management operations; enhance wildlife and listed species habitat; decrease fuel loading; enhance public safety; and restore, maintain, and protect all native ecosystems, ecotones, and their ecological processes. FFS personnel are responsible for planning and implementing the annual prescribed burn program for THSF, which will consist of growing and dormant season burns. An update to the Five-Year Prescribed Burning Management Plan is developed each year by FFS staff. All burns conducted on THSF are executed by Florida Certified Prescribed Burn Managers in accordance with F. S. 590.125 and F.A.C. 5I-2.

According to FNAI, historic, fire dependent natural communities on THSF are estimated to have occupied approximately 115,000 acres and to have burned at approximately 2 to 35-year intervals. Currently, there are approximately 116,000 acres available to burn. Based on current conditions and management objectives, THSF will plan for 25,000 to 42,000 acres to be prescribed burned annually. Meeting prescribed fire goals will be largely dependent on weather conditions, available personnel, and statewide emergency situations such as wildfires, hurricanes, and other natural disaster response and relief.

1. Fire Management

FFS will develop a fire management plan that will serve as a working tool and an informational document for THSF. The plan will provide guidelines in regard to wildfire suppression and prescribed fire management. It will specify burn units, burn unit prescriptions, appropriate fire return intervals, and fire suppression planning. The plan may be reviewed and amended as necessary.

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

- a. Prescribed Fire:** Prescribed fire is the most important land management tool, both ecologically and economically, for managing vegetation and natural communities, and perpetuating existing wildlife populations in Florida. Forest Operation records and staff experience should be combined with the FNAI inventory and assessment (2017) to identify areas that may require mechanical/chemical treatments in conjunction with prescribed fire to restore a more natural vegetative structure.

- b. Burn Unit Plans:** Each prescribed fire will be conducted in accordance with FFS regulations and state law (Rule Chapter 5I-2 F.A.C., Chapter 590 F.S.) and have a burn unit plan (or prescription). Each prescription will contain, at a minimum, the information, as required by Section 590.125(3), F.S., needed to complete the FFS Prescribed Burn Plan Form FDACS 11461.

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

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

B. Wildfires, Prevention, Fire / Prescribed Fire 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 Tallahassee Forestry Center. Emphasis will be placed on consistent accomplishment of prescribed burning goals and community outreach to increase public understanding of wildfire prevention and the benefits of prescribed fire.

FFS has three (3) paramount considerations regarding wildfires, and these are listed 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 THSF Fire Management Plan.

1. Suppression Strategies

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

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

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

- b. Control** is defined as a suppression strategy where aggressive suppression tactics are used to establish firelines around a fire to halt its spread and to extinguish all hotspots. This alternative is used whenever there is a threat to human life, property, private lands, and/or critical natural or cultural resources. This strategy should also be used when the total district fire load dictates that crews not be involved with individual fires for any longer than absolutely necessary.

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

2. Smoke Management

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

3. Fire Breaks and Firelines

A system of permanent fire breaks will be developed and maintained around and within the boundaries of THSF to guard against fires escaping from and entering the forest. Such fire breaks will consist of natural barriers, roads, trails, permanent grass strips and where appropriate, well maintained harrowed lines. All pre-suppression fire breaks will meet the established Silvicultural Best Management Practices (BMP) criteria.

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

4. Sensitive Areas

THSF has on file in the state forest headquarters an Environmentally Sensitive Area Map that identifies protected sites such as critical wetlands and archaeological and historical sites known to occur on the state forest. 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 THSF. When possible, fire staff will avoid line construction in wetland ecotones throughout the forest.

5. Firewise Communities

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

6. Adjacent Neighbor Contacts

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

7. Post-Burn Evaluations

A post-burn evaluation is required for each wildfire and prescribed burn on the state forests to assess impacts on timber and habitat. Based on the evaluations, decisions will be made on timber salvage operations. An historical fire record for all fires and prescribed burns will be maintained. This will be accomplished using the burn plans in the Forester's files and through the maintenance of GIS data. These records are intended to provide data for future management decisions.

C. Sustainable Forestry & Silviculture

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

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

2. Silvicultural Operations

Silvicultural operations on THSF will be directed toward improving forest health, wildlife habitat, ecological and economical sustainability, as well as toward recovery from past management practices that are not in accordance with the objectives of this plan. Stands of off-site species with merchantable volume will be scheduled for harvest, followed by reforestation with the appropriate tree species. Herbicide applications may be necessary to control woody competition and to re-establish desired natural species of both overstory and groundcover. Site preparation methods may include prescribed fire, mechanical vegetation control, and/or herbicide applications. Herbicides used will be registered for forestry use by the U.S. Environmental Protection Agency (EPA) and will not adversely affect water resources.

Prescribed fire is the most desirable method of vegetation control in fire dependent ecosystems. However, due to the existence of areas where fuel loads have reached

dangerous levels or urban interface dictates prescribed fire is not suitable, mechanical or chemical vegetation control may be used. Mechanical and / or chemical vegetation control will be utilized where appropriate as determined by FFS staff for wildlife enhancement, fuel mitigation, and reforestation.

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

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

3. Forest Inventory

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

Timber / forestry resources available on the property include commercially important pine species such as slash, longleaf, loblolly, pond, and sand pines, as well as other significant species such as cypress, cedar, and mixed hardwoods.

4. Timber Sales

Timber sales are generally advertised for competitive bids and sold on a per unit or lump sum basis. All timber sales are conducted according to guidelines specified in the State Forest Handbook and in accordance with Forestry Policy and Procedures.

5. Sustainable Forestry Initiative (SFI)

The SFI 2015-2019 Forest Management Standard promotes sustainable forestry practices based on 13 Principles, 15 Objectives, 37 Performance Measures and 101 Indicators. These requirements include measures to protect water quality, biodiversity, wildlife habitat, species at risk, and forests with exceptional conservation value. The SFI 2015-2019 Forest Management Standard applies to any organization in the United States or Canada that owns or manages forestlands.

The SFI program is committed to continuously improve responsible forest management. SFI Program Participants must meet or exceed applicable water quality laws and regulations, with measures to manage and protect water wetlands and riparian zones on certified lands. Participants must continually evaluate habitat and biodiversity impacts from forest activities – which leads to improved habitat quality and protection of imperiled or critically imperiled species.

D. Non-Native Invasive Species Control

FFS employees continually monitor the forest for non-native invasive species while conducting management activities. FFS will locate, identify, and apply control measures with the intent to eradicate or control non-native invasive species. (Table 6, Exhibit Q)

On-going maintenance and monitoring strategies are outlined in the Five-Year Ecological Management Plan which is developed to locate, identify, and control non-native invasive plant species. Occurrences of non-native invasive species are recorded in the THSF 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 in an effort to cooperate on control measures. FFS works to control the spread of non-native invasive species by decontaminating agency equipment and equipment used by private contractors according to the State Forest Handbook.

FFS will enlist support from FWC in efforts to control non-native invasive animals. Feral hogs (*Sus scrofa*) have been present on some tracts of THSF in the past but are not known to occur in any substantial numbers at this time. FWC has issued a feral hog control permit to FFS for all state forests and FFS will allow for hog removal on THSF through trapping and hunting if necessary

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

Table 6. Non-Native Invasive Plant Species Occurring on THSF

Scientific Name	Common Name	Treatment Strategy	Acres Impacted	Increasing /Decreasing
<i>Albizia julibrissin</i>	Mimosa	Hack/squirt & Foliar	Minimal	Decreasing
<i>Sapium sebiferum</i>	Chinese tallow tree	Hack/squirt & Foliar	Minimal	Decreasing
<i>Lygodium japonicum</i>	Japanese climbing fern	Foliar	200	Stable
<i>Imperata cylindrica</i>	Cogon grass	Foliar	5	Stable
<i>Panicum repens</i>	Torpedo grass	Foliar	Minimal	Stable
<i>Sorghum halepense</i>	Johnson grass	Foliar	Minimal	Stable
<i>Dioscorea bulbifera</i>	Air potato	Foliar/cut or pull-up	Minimal	Decreasing
<i>Melia azedarach</i>	Chinaberry	Hack/squirt & Foliar	Minimal	Decreasing
<i>Cinnamomum camphora</i>	Camphor tree	Hack/squirt & Foliar	Minimal	Decreasing

E. Insects, Disease and Forest Health

Currently, there are no insect or disease problems on THSF. State forest staff also monitors incidental outbreaks of *Ips* bark beetles throughout the forest. These outbreaks generally run their course without involving more than a couple acres. Aerial surveys are conducted every June for southern pine beetle outbreaks. In the event of an outbreak of any disease or insects, consultation with the Forest Management Bureau's Forest Health Section will be sought to formulate an appropriate and effective response.

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

As a result, prior to conducting any arthropod control activities on THSF, 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 THSF. This public land control plan must be in compliance with DACS guidelines and using the appropriate DACS form. The plan must then be approved and mutually adopted by the county, FFS, and DACS, prior to initiation of any mosquito control work. Should the local mosquito control district not propose any mosquito control operations on the property, no arthropod control plan is required. See [Exhibit Y].

F. Use of Private Land Contractors

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

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

VII. Proposed Management Activities for Natural Communities

In 2017, FNAI completed a natural community mapping project on THSF and a historic natural community type map was created [Exhibits R and S].

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. Strategies may include thinning of pine plantations, mowing, or chopping in areas of heavy fuel buildup, application of both dormant and growing season fires, removal of off-site species, reforestation, the use of site preparation methods, both mechanically and/or the use of herbicides to control encroachment of the woody shrub component as appropriate. Fire return intervals are included as a guide (Table 7) and may vary depending upon specific conditions. The intention is to use prescribed fire in a manner and frequency that will attain the desired goals. Prescribed fire frequency and timing is generally adjusted depending upon the conditions of the specific area.

Table 7. Prescribed Fire Interval Guide on THSF

Habitat Type	Historic Fire Return Intervals**	THSF Fire Frequency Goal (Local)	Comments
Basin Marsh	N/A	N/A	
Basin Swamp	2-20 years	2-20 years	Dependent on adjacent pyrogenic habitat
Baygall	N/A	N/A	
Blackwater Stream	N/A	N/A	
Bottomland Forest	N/A	N/A	
Depression Marsh	N/A	N/A	
Dome Swamp	3-5 years	3-5 years	Dependent on adjacent pyrogenic habitat
Floodplain Marsh	3-5 years	3-5 years	Dependent on adjacent pyrogenic habitat
Floodplain Swamp	N/A	N/A	
Mesic Flatwoods	2-4 years	2-4 years	
Sandhill	1-3 years	2-4 years	
Scrub	6-19 years	3-19 years	
Scrubby Flatwoods	5-15 years	3-15 years	
Shrub Bog	10-20 years	N/A	
Swamp Lake	N/A	N/A	
Wet Flatwoods	3-10 years	2-5 years	
Wet Prairie	2-3 years	2-4 years	

** As determined by FNAI

The following community descriptions, existing condition descriptions, and management recommendations are taken from a 2017 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 THSF.

To achieve the objectives outlined in this plan, the following management activities will be performed in the natural communities at THSF 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.

Species composition is heterogeneous both within and between marshes but can generally be divided into submersed, floating-leaved, emergent, and grassy zones from deepest to shallowest portions; shrub patches may be present within any of these zones. Common species found in the floating leaved zone of basin marshes include white waterlily (*Nymphaea odorata*), American lotus (*Nelumbo lutea*), and yellow pondlily (*Nuphar advena*); the emergent zone may have pickerelweed (*Pontederia cordata*), bulltongue arrowhead (*Sagittaria lancifolia*), southern cattail (*Typha domingensis*), sawgrass (*Cladium jamaicense*), and softstem bulrush (*Scirpus tabernaemontani*); the grassy zone is typically characterized by maidencane (*Panicum hemitomon*), smooth beggarticks (*Bidens laevis*), dotted smartweed (*Polygonum punctatum*), and sand cordgrass (*Spartina bakeri*), accompanied by a diverse mixture of less common forbs such as sweetscent (*Pluchea odorata*), spadeleaf (*Centella asiatica*), and lemon bacopa (*Bacopa caroliniana*). Coastalplain willow (*Salix caroliniana*), common buttonbush (*Cephalanthus occidentalis*), elderberry (*Sambucus nigra* ssp. *canadensis*), and wax myrtle (*Myrica cerifera*) are common shrubby components.

Current Conditions:

The few basin marshes on THSF are either small inclusions in non-pyrogenic communities such as basin swamps or baygall, or large deep inclusions in flatwoods. Most of these basin marshes are in good condition.

Dominant shrub species in basin marshes include groundsel tree (*Baccharis halimifolia*) and yaupon (*Ilex vomitoria*). Sawgrass (*Cladium jamaicense*) and rushes (*Juncus* spp.) are common herbaceous species.

Fire Regimes:

Historically, natural fires likely burned basin marshes occasionally during dry conditions. Dense sawgrass and maidencane marshes can burn even when there is standing water. Frequency of fire varies depending on the hydrology of the marsh and its exposure to fire from surrounding areas.

Management Needs:

Restoring historic hydrological regimes and applying fire to adjacent uplands (where appropriate) is a recommended focus for forest management. Occasional fires within the basin marshes are necessary to remove encroaching woody vegetation and reduce the buildup of organic soils.

B. Basin Swamp**Description:**

Typically, basin swamps are forested depressions that are large and/or embedded in a non-pyrogenic community and thus are not heavily influenced by frequent fires from the surrounding landscape. The soils are generally acidic, nutrient-poor peats overlying an impervious soil layer. This community type is dominated by hydrophytic trees and shrubs that can withstand inundation for most or all of the year, including bald (or pond) cypress (*Taxodium distichum*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), and fetterbush (*Lyonia lucida*). Slash pine (*Pinus elliottii*) may infrequently be found on hummocks within the

swamp. Atlantic white cedar (*Chamaecyparis thyoides*) and pond pine (*Pinus serotina*) are occasional. Basin swamps have variable shrub layers and sparse to dense herbaceous species cover. A mature canopy is usually closed and dominated by pond cypress, swamp tupelo, slash pine, and to a lesser extent, red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanicus*), loblolly bay (*Gordonia lasianthus*), swamp bay (*Persea palustris*), and sweetbay (*Magnolia virginiana*). In most cases, shrubs do not form a dense layer below the canopy or in the ecotones of the swamps. Shrubs are typically scattered throughout the swamp, although some areas may have heavier concentrations. Subcanopy tree and shrub species primarily include black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), fetterbush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), sweetbay, bayberry (*Myrica heterophylla*), common buttonbush (*Cephalanthus occidentalis*), and swamp dogwood (*Cornus foemina*), as well as canopy and subcanopy saplings. In densely forested portions of basin swamps, herbs are sparse and consist mostly of netted chain fern (*Woodwardia areolata*), Virginia chain fern (*W. virginica*), royal fern (*Osmunda regalis*), cinnamon fern (*O. cinnamomea*), and lizard's tail (*Saururus cernuus*). Epiphytes and vines may be common and include Spanish moss (*Tillandsia usneoides*), resurrection fern (*Pleopeltis polypodioides*), poison ivy (*Toxicodendron radicans*), laurel greenbrier (*Smilax laurifolia*), and climbing hydrangea (*Decumaria barbara*).

On the 1953 aerial photographs, basin wetlands in THSF appear to be a complex mosaic of shrub bog (titi shrubs lacking a hardwood canopy), baygall (bay tree dominated), and basin swamp (cypress/tupelo dominated). The distinction between these communities is difficult to delineate, and the pattern has shifted over the last century due to changing hydrology and fire patterns. Basin swamp was primarily identified through current photographs. The distinction between basin swamp and floodplain swamp is somewhat arbitrarily drawn to separate swamps that are mainly in collection basins versus swamps that are more heavily influenced by seasonal upstream flooding events. Many of the historic basin swamps at THSF are large, irregularly shaped communities in a matrix of baygall and shrub bog, while others are linear features that resemble narrow floodplain swamps or cypress stringers.

Current Conditions:

Many of the THSF basin swamps have been converted to pine plantation. In general, these have an overstory of slash pine (*Pinus elliottii*) above a variable mid-story of wetland trees and shrubs, often with herbaceous weeds. In addition, large sections of these pine plantations that were former basin swamps have been cleared of all pines. These areas that were former basin swamps have little to no canopy of remnant cypress (*Taxodium* spp.), a weedy shrub layer of black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), St. John's wort (*Hypericum* spp.), and blackberry (*Rubus* spp.), and a moderate, and often weedy herb layer with bluestems (*Andropogon* spp.), Carolina redroot (*Lachnanthes carolina*), beaksedges (*Rhynchospora* spp.), and yellow-eyed grasses (*Xyris* spp.).

Most of the current basin swamps in THSF are large irregularly shaped matrices that include baygalls and shrub bogs. Smaller, linear portions of basin swamps occur as pure stands of cypress, including dwarf cypress swamps. In general, basin swamps are dominated by a mixture of wetland trees, particularly pond cypress (*Taxodium ascendens*),

bald cypress (*T. distichum*), slash pine (*Pinus elliottii*), sweetbay (*Magnolia virginiana*), Atlantic white cedar (*Chamaecyparis thyoides*), and tupelo (*Nyssa* spp.). The understory consists of smaller canopy species plus red maple (*Acer rubrum*), black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), sweetbay (*Magnolia virginiana*), and swampbay (*Persea palustris*). The shrub layer is usually sparse and includes wax myrtle (*Myrica cerifera*), sweet pepperbush (*Clethra alnifolia*), peelbark St. John's wort (*Hypericum fasciculatum*), myrtle leaved holly (*Ilex cassine* var. *myrtifolia*), large gallberry (*I. coriacea*), fetterbush (*Lyonia lucida*), and evergreen bayberry (*Myrica caroliniensis*). Climbing fetterbush (*Pieris phylllyreifolia*) is often found growing on cypress trunks in linear swamps.

Herbs are usually sparse and include beaksedges (*Rhynchospora* spp.), narrowfruit horned beaksedge (*R. inundata*), yellow eyed grass (*Xyris* spp.), clustered sedge (*Carex glaucescens*), flatsedge (*Cyperus* spp.), witchgrass (*Dicanthelium* spp.), tenangle pipewort (*Eriocaulon decangulare*), Carolina redroot (*Lachnanthes caroliniana*), royal fern (*Osmunda regalis* var. *spectabilis*), netted chain fern (*Woodwardia areolata*), bog white violet (*Viola lanceolata*), and common arrowhead (*Sagittaria latifolia*).

Vines are sparse to common and include yellow jessamine (*Gelsemium sempervirens*), greenbrier (*Smilax* spp.), laurel greenbrier (*S. laurifolia*), bristly greenbrier (*S. tamnoides*), and muscadine (*Vitis rotundifolia*).

There is some variation across the landscape of Tate's Hell in the structure and species composition of basin swamps. Smaller, linear stands of almost pure cypress occur in the central area of the forest including some stand of dwarf cypress. A second variation that does not fit classically into the above definition but occurs throughout the forest in large areas are regularly inundated swamps that have a mixed open canopy/shrub layer of scattered hydrophilic trees and shrubs and a fairly diverse and more prominent herbaceous layer than classic basin swamp. These more open canopied swamps are difficult to distinguish from and grade into the more typical closed canopied swamps as well as the much more open "cypress savanna" type of wet prairies.

Fire Regimes:

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

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

Often there is a successional interplay between shrub bogs, baygall, and basin swamp dependent on fire patterns; shrub wetlands may, if the hydrology is wet enough, succeed into basin swamps if unburned for long periods of time.

Management Needs:

Past silvicultural operations, particularly those including “bedding,” have severely altered many of the basin swamps. Bedding raised the root zone of pine seedlings above periodically flooded stands but the practice altered the hydrology and structure of the swamp habitat impacted. Historic basin swamps that have been planted in slash pine should be thinned, prescribed fire applied, and left for natural succession. Monitoring and control measures for non-native invasive plants should continue as planned. Removing feral hogs (*Sus scrofa*) is desirable in areas where these animals are impacting basin swamps and other wetlands.

For basin swamps in relatively good condition in THSF, management should focus on maintaining or restoring natural hydrology.

Prescribed fires in the flatwoods should be allowed to burn and extinguish naturally at or within the wetlands and encouraged to “push” into shrub wetlands in ecotones. Fires should be encouraged to burn completely smaller, isolated wetlands under dry conditions, when safety considerations allow.

Prior to state acquisition, cypress trees were harvested in many of the basin swamps in THSF. Although cypress is capable of resprouting from cut stumps, cypress regeneration is usually from seed. It is therefore important that at least a few seed trees be left in place for canopy regeneration.

C. Baygall

Description:

Baygall is a dense canopy evergreen forest that can develop at the bases of slopes with seepage from surrounding uplands or in basins where high water tables maintain saturated conditions. Soils are acidic and generally composed of peat.

Characteristic canopy trees include loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), pond pine (*Pinus serotina*), and slash pine (*P. elliottii*). Common shrubs and small trees include fetterbush (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), large gallberry (*Ilex coriacea*), and highbush blueberry (*Vaccinium corymbosum*). A dense overstory and low light levels typically restrict development of herbaceous plants. However, herbs such as Virginia chain fern (*Woodwardia virginica*), beaksedges (*Rhynchospora* spp.), sedges (*Carex* spp.), sphagnum moss (*Sphagnum* spp.), Carolina redroot (*Lachnanthes caroliniana*), and cinnamon fern (*Osmunda cinnamomea*) may be present. Epiphytes are infrequent to absent. Vines are found occasionally and may include laurel greenbrier (*Smilax laurifolia*) and muscadine (*Vitis rotundifolia*).

On the 1953 aerial photographs, basin wetlands in THSF appear to be a complex mosaic of shrub bog (titi shrubs lacking a hardwood canopy), baygall (bay tree dominated), and

basin swamp (cypress/tupelo dominated). The distinction between these communities is difficult to delineate, and the pattern has shifted over the last century due to changing hydrology and fire patterns. Most of the historic baygalls in THSF are irregularly shaped communities in a matrix of basin swamp, shrub bog, and wet flatwoods, but others are linear features along narrow drainages.

Current Conditions:

Significant portions of historic baygall in THSF have been converted to pine plantation. There also appears to have been some successional shifts between wetland community types (basin swamp/baygall/shrub bog) that have occurred over the last century due to intensive silviculture and resulting changes in hydrology and fire frequency.

Current baygalls are dominated by a hardwood canopy of sweetbay (*Magnolia virginiana*), Atlantic white cedar (*Chamaecyparis thyoides*), loblolly bay (*Gordonia lasianthus*), and swamp bay (*Persea palustris*). Cypress (*Taxodium* spp.), slash pine (*Pinus elliottii*), and swamp laurel oak (*Quercus laurifolia*) may also be present in the canopy. The understory may be sparse to dense and consists of smaller canopy species plus red maple (*Acer rubrum*), water oak (*Quercus nigra*), black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), and large gallberry (*Ilex coriacea*). Smaller shrubs include peelbark St. John's wort (*Hypericum fasciculatum*), sweet pepperbush (*Clethra alnifolia*), and gallberry (*Ilex glabra*).

The sparse herbaceous layer includes bluestem (*Andropogon* spp.), beaksedge (*Rhynchospora* spp.), clustered sedge (*Carex glaucescens*), witchgrass (*Dicanthelium* spp.), yellow-eyed grass (*Xyris* spp.), Carolina redroot (*Lacnathes caroliniana*), bracken fern (*Pteridium aquilinum*), and Virginia chain fern (*Woodwardia virginica*). Vines include laurel greenbrier (*Smilax laurifolia*), earleaf greenbrier (*S. auriculata*), and muscadine (*Vitis rotundifolia*).

Fire Regimes:

Baygall burns infrequently, perhaps only a few times each century in the deepest baygalls. Although the saturated soils and humid conditions within baygalls typically inhibit fire, droughts may create conditions that allow them to burn catastrophically. These fires not only destroy the canopy, but also may ignite the deep peat layers that can smolder for weeks, or even months. Caution is advised to avoid prescribed fire in baygall when insufficient soil moisture is available to keep fire in the ecotone areas when baygall occurs within larger burn blocks.

Management Needs:

Management activities for baygall in THSF should focus on maintaining historically occurring baygall. Avoid any further hydrologic alterations, such as the creation of ditches or roads. Where practical, restore natural hydrology and limit mechanical soil disturbance in ecotones between baygall and the adjacent uplands.

D. Blackwater Stream

Description:

Blackwater streams are watercourses that typically flow through forested communities. Tannins derived from swamps and marshes cause the water to be dark brown and often acidic. Blackwater streams are mostly free of vegetation except for occasional emergent herbs, submersed macrophytes, and algae. The adjacent canopy is dominated by baygall and swamp species.

On the 1953 geo-rectified photographs, some blackwater streams cannot be delineated under the dense canopy cover. The stream is identified as inclusions of the adjacent forested system.

Current Conditions:

The blackwater streams in THSF are generally in desired future conditions. Disturbances are limited to the conversion of adjacent land to agriculture and pine plantations and development that impact water quality.

Common canopy and subcanopy species include cypress (*Taxodium* spp.), sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), slash pine (*Pinus elliottii*), water oak (*Quercus nigra*), and red maple (*Acer rubrum*).

Fire Regimes:

Fire is not a component of this community.

Management Needs:

Management activities for blackwater streams in THSF should focus on following silvicultural BMP's, maintaining natural hydrologic patterns, and monitoring water quality.

E. 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. Characteristic canopy species of bottomland forests include water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), swamp laurel oak (*Q. laurifolia*), red maple (*Acer rubrum*), loblolly pine (*Pinus taeda*), and spruce pine (*P. glabra*).

More flood tolerant species that are often present include American elm (*Ulmus americana*) and red maple (*Acer rubrum*), as well as occasional swamp tupelo (*Nyssa sylvatica* var. *biflora*) and bald cypress (*Taxodium distichum*). Evergreen bay species such as loblolly bay (*Gordonia lasianthus*), and sweetbay (*Magnolia virginiana*) are often mixed in the canopy and understory in acidic or seepage systems. Smaller trees and shrubs often include American hornbeam (*Carpinus caroliniana*), swamp dogwood (*Cornus foemina*), possumhaw (*Ilex decidua*), dahoon (*I. cassine*), dwarf palmetto (*Sabal minor*), swamp bay (*Persea palustris*), wax myrtle (*Myrica cerifera*), and highbush blueberry

(*Vaccinium corymbosum*). The understory is either dense shrubs with little ground cover, or open, with few shrubs and a groundcover of ferns, herbs, and grasses. In the drier forests of this type, American holly (*Ilex opaca*), Gulf Sebastian bush (*Sebastiania fruticosa*), and sparkleberry (*Vaccinium arboreum*) may be frequent. Ground cover is also variable in composition and abundance, often with species overlap between herbs suited to either mesic or hydric conditions. Characteristic species include witchgrasses (*Dichanthelium* spp.), slender woodoats (*Chasmanthium laxum*), and sedges (*Carex* spp.).

Current Conditions:

Bottomland forest within THSF occurs along the New and Ochlockonee River drainages. It grades into floodplain swamp, flatwoods, and wet prairie. Most of the bottomland forest communities on Tate's Hell are in good condition, though some were disturbed by planted pines prior to state acquisition.

Current bottomland forests are dominated by sweetbay (*Magnolia virginiana*), southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), swamp laurel oak (*Quercus laurifolia*), water oak (*Q. nigra*), and tupelo (*Nyssa* spp.). Common understory species include red maple (*Acer rubrum*), spruce pine (*Pinus glabra*), slash pine (*P. elliotii*), and cabbage palm (*Sabal palmetto*). The shrub layer is usually sparse and includes saw palmetto (*Serenoa repens*), horse sugar (*Symplocos tinctoria*), wax myrtle (*Myrica cerifera*), fetterbush (*Lyonia lucida*), rusty staggerbush (*Lyonia ferruginea*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), American holly (*I. opaca*), American hornbeam (*Carpinus caroliniana*), St. Andrew's cross (*Hypericum hypercoides*), and sparkleberry (*Vaccinium arboreum*). Common herbs include bluestem (*Andropogon* spp.), longleaf woodoats (*Chasmanthium laxum* var. *sessiliflorum*), (*Dicanthelium* spp.), and sedges (*Carex* spp.). Vines are occasional and include yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier (*Smilax auriculata*), and bristly greenbrier (*S. tamnoides*).

Fire Regimes:

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

Management Needs:

Conversion to pine plantations prior to state acquisition has altered species composition in some areas. Activities that alter the surrounding hydrology, including ditches and canals, are highly detrimental to bottomland forest. Restoration projects should focus on restoring historic hydrologic flow pathways in conjunction with timber harvesting to favor a mixed pine, cypress, hardwood canopy where possible.

F. Depression Marsh

Description:

Depression marshes are isolated, non-forested wetland basins that are imbedded in a pyrogenic matrix community such as pine flatwoods or sandhill. These marshes typically have concentric zones of vegetation related to the length of hydroperiod and depth of

flooding. Depression marshes are distinguished from basin marshes principally by their landscape position which subjects them to more frequent fires.

Trees and shrubs are generally sparse or absent. The herbaceous layer is moderate to dense, especially where fire frequency and woody plant mortality is high. Typical species include graminoids such as maidencane (*Panicum hemitomon*), Walter's sedge (*Carex striata*), rushes (*Juncus* spp.), beakrushes (*Rhynchospora* spp., especially *R. inundata*), wool grass (*Scirpus cyperinus*), and sawgrass (*Cladium jamaicense*); flag species such as pickerelweed (*Pontederia cordata*) and bulltongue arrowhead (*Sagittaria lancifolia*); and floating aquatics such as white waterlily (*Nymphaea odorata*). Peelbark St. John's wort (*Hypericum fasciculatum*) frequently forms a zone around the edge of the marsh along with herbs such as beaksedges (*Rhynchospora* spp.), Elliott's yellow-eyed grass (*Xyris elliotii*), blue maidencane (*Amphicarpum muhlenbergianum*), fringed yellow-eyed grass (*Xyris fimbriata*), pipeworts (*Eriocaulon* spp.), and Baldwin's spikerush (*Eleocharis baldwinii*). The depression marshes within the flatwoods in the southwestern portion of the forest, near the tidally influenced floodplain marshes, tend to be composed of almost entirely sawgrass (*Cladium jamaicense*).

Current Conditions:

Most depression marshes at THSF occur on the High Bluff Tract. Most of the mesic and scrubby flatwoods communities surrounding these marshes have been planted with pines, causing some disturbance along the marsh edges, allowing the marsh to be surrounded by a ring of shrubs.

Canopy species are usually absent, but slash pine (*Pinus elliotii*) was often present at marsh edges, due to surrounding uplands being pine plantation. The herb layer includes sawgrass (*Cladium jamaicense*), flattened pipewort (*Eriocaulon compressum*), rushes (*Juncus* spp.), big floatingheart (*Nymphoides aquatica*), maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), and beaksedges (*Rhynchospora* spp.).

Fire Regimes:

Frequency of fire in depression marshes is dependent on the fire return interval of the surrounding community. Fire is important in limiting hardwood encroachment and peat buildup, while encouraging herbaceous growth in depression marshes.

Management Needs:

Management of the depression marshes in THSF should focus on allowing fires from the surrounding landscape to burn into the marsh and extinguish naturally. Firebreaks should be avoided as they damage the herbaceous ecotone between the marsh and upland. Hydrology projects should focus on monitoring water quality parameters.

G. Dome Swamp

Description:

Dome swamps are isolated, shallow, forested wetland basins that are imbedded in a pyrogenic matrix community such as pine flatwoods. These swamps have domed profiles resulting from smaller trees growing around the edges and larger trees growing in the

interior. Dome swamps have peat soils that are thickest toward the center and are generally underlain with acidic soils and a limestone layer. Dome swamps are distinguished from basin swamps principally by their often more circular shape, smaller size, and higher historical fire frequency due to landscape position.

The mature canopy is dominated by pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), and/or ogeechee tupelo (*Nyssa ogeche*), along with other hydrophytic trees such as red maple (*Acer rubrum*). The subcanopy and shrub layers are sparse. Typical dominant shrubs include Virginia willow (*Itea virginica*), fetterbush (*Lyonia lucida*), common buttonbush (*Cephalanthus occidentalis*), coastalplain willow (*Salix caroliniana*), wax myrtle (*Myrica cerifera*), titi (*Cyrilla racemiflora*), and St. John's wort (*Hypericum* spp.). The herbaceous layer is sparse to dense, especially where fire frequency and woody plant mortality is high.

Dome swamps usually have a diverse herbaceous ecotone with the surrounding pine dominated community, created through frequent fires that extinguish naturally along the edge of the dome.

Current Conditions:

Numerous dome swamps are scattered throughout THSF. Most of these isolated depressions are embedded in historic mesic or wet flatwoods. Many of these dome swamps have now been planted through with slash pines or have been reduced in size due to their edges being converted to pine plantation.

The canopy is composed of cypress (*Taxodium ascendens*), tupelo (*Nyssa* spp.), and slash pine (*Pinus elliotii*). Subcanopy species include red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*), and swamp bay (*Persea palustris*). Shrubs may be dense at swamp edges and include black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), large gallberry (*I. coriacea*), Virginia willow (*Itea virginica*), wax myrtle (*Myrica cerifera*), sweet pepperbush (*Clethra alnifolia*), and St. John's wort (*Hypericum* spp.). Herbs are generally sparse and include purple bluestem (*Andropogon glomeratus* var. *glaucopsis*), bluestem (*A. spp.*), smallfruit beggarticks (*Bidens mitis*), clustered sedge (*Carex glaucescens*), sawgrass (*Cladium jamaicense*), witchgrass (*Dichanthelium* spp.), warty panicgrass (*Panicum verrucosum*), beaksedge (*Rhynchospora* spp.), and Virginia chain fern (*Woodwardia virginica*).

Fire Regimes:

Fire is important in limiting hardwood encroachment and peat buildup, while encouraging herbaceous growth in dome swamps. Fire frequency is greatest at the periphery of a dome swamp, where a normal fire cycle might be as short as 3 to 5 years.

Management Needs:

Past silvicultural operations, particularly those including “bedding,” have altered many of the dome swamps. This practice alters the hydrology and structure of the swamp; unnaturally raising the root above any standing water. It is important to maintain natural hydroperiods and natural (both seasonal and long term) fluctuations in water level in dome

swamps. Extended hydroperiods can limit tree growth and prevent reproduction. Shortened hydroperiods can permit the invasion of mesophytic species, which can change the character of the understory and eventually allow hardwoods to replace cypress.

Management of dome swamps in THSF should focus on the restoration of surrounding pine communities, primarily through thinning of planted pines and the reestablishment of a frequent fire return interval to be determined by the needs of the surrounding community. Hydrologic restoration may further aid in the re-establishment of cypress or tupelo stands.

H. Floodplain Marsh

Description:

Floodplain marshes are freshwater, non-forested wetlands that occur along river floodplains. These marshes are directly influenced by river flooding on an annual or semi-annual basis, and may also be tidally influenced.

Trees are generally sparse or absent, although shrubs such as coastalplain willow (*Salix caroliniana*) may form thickets. The herbaceous layer is moderate to dense, with species composition varying by flooding depth and duration. Typical species include graminoids such as sawgrass (*Cladium jamaicense*) and maidencane (*Panicum hemitomon*), flag species such as pickerelweed (*Pontederia cordata*) and bulltongue arrowhead (*Sagittaria lancifolia*), and floating aquatics such as yellow pondlily (*Nuphar advena*).

Floodplain marshes are typically underlain by sand or a thin to thick organic layer over sand and may be saturated for most of the year.

Current Conditions:

Floodplain marshes at THSF fall into the freshwater tidal marsh variant of floodplain marsh as they have some elements of salt marsh but are mostly dominated by sawgrass (*Cladium jamaicense*). Salt and freshwater marsh species intermingle as salt water is diluted by freshwater inflow and tidal fluctuation is damped (Thompson 1977; Clewell 1997). These marshes are occasionally influenced by salt water during storms, seasonal high tides, and periods of low river flow. Sawgrass is dominant, forming large stands either directly adjacent to the river, or just behind slightly raised levees of floodplain swamp or flatwoods vegetation.

Most floodplain marshes at THSF are in good condition. Canopy species are restricted to marsh edges and include slash pine (*Pinus elliottii*) and pond cypress (*Taxodium ascendens*). Shrubs are sparse and include groundsel tree (*Baccharis halimifolia*), yaupon (*Ilex vomitoria*), St. John's wort (*Hypericum* spp.), water toothleaf (*Stillingia aquatica*), and wax myrtle (*Myrica cerifera*). Herbs are dense and include sawgrass (*Cladium jamaicense*), cordgrass (*Spartina* spp.), needle rush (*Juncus roemerianus*), primrosewillow (*Ludwigia* spp.), pickerelweed (*Pontederia cordata*), beaksedge (*Rhynchospora* spp.), and yellow-eyed grass (*Xyris* spp.).

Fire Regimes:

The natural fire return interval in floodplain marshes may vary widely from one situation to the next, but fire has been shown to be a useful tool for improving wildlife habitat and reducing fuel loads. Floodplain marshes may burn as frequently as every 3 years. Frequent fires in tidally influenced floodplain marshes maintain sawgrass dominance.

Management Needs:

When conducting prescribed burns, it may be beneficial to leave a patchwork of unburned habitat to provide shelter for wildlife. Although succession of marshes into forested wetlands is likely a natural phenomenon, if maintenance of the current sawgrass marshes is desired, then prescribed fire is recommended.

I. Floodplain Swamp**Description:**

Floodplain swamp is a forest of hydrophytic trees occurring on frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains. The canopy is typically dominated by pond cypress (*Taxodium ascendens*) and/or bald cypress (*Taxodium distichum*), with occasional red maple (*Acer rubrum*), water hickory (*Carya aquatica*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), swamp laurel oak (*Quercus laurifolia*), and American elm (*Ulmus americana*). Sub-canopy species often include younger canopy species as well as Carolina ash (*Fraxinus caroliniana*), water locust (*Gleditsia aquatica*), and coastalplain willow (*Salix caroliniana*). Shrubs can be infrequent to dense and include common buttonbush (*Cephalanthus occidentalis*) and wax myrtle (*Myrica cerifera*). Herb species may include spiderlily (*Hymenocallis* spp.), royal fern (*Osmunda regalis* var. *spectabilis*), pickerelweed (*Pontederia cordata*), common arrowhead (*Sagittaria latifolia*), lizard's tail (*Saururus cernuus*), climbing aster (*Symphotrichum carolinianum*), and Virginia chain fern (*Woodwardia virginica*).

Floodplain swamp is often associated with and grades into floodplain marsh, bottomland forest, basin swamp, and occasionally baygall. Floodplain swamp is often found in a mosaic with bottomland forest where the ridge and swale topography of the floodplain creates a mixture of habitats including low depressions that hold water most of the year.

In floodplain swamps located within tidal influence, flooding patterns, tidal range, and storm events are major driving factors. These swamps are subject to daily freshwater inundation associated with tidal fluctuations. As a river approaches the coast, increasing stresses from daily tidal-driven inundation and occasional saltwater intrusion gradually influence vegetation structure. At the lower end of this gradient, cypress becomes much less dominant, replaced by water hickory, swamp tupelo, and American elm.

The distinction between basin swamp and floodplain swamp is somewhat arbitrarily drawn to separate swamps that are mainly in collection basins versus swamps that are more heavily influenced by seasonal upstream flooding events.

Current Conditions:

Floodplain swamps at THSF occur along the Ochlockonee, New, and Crooked River floodplains and the Pine Log Creek floodplain. Most floodplain swamps are in good condition, with the exception of some edge loss due to planted pines in adjacent uplands, especially along the New River floodplain.

Floodplain swamps at Tate's Hell have a canopy and subcanopy of swamp tupelo (*Nyssa sylvatica* var. *biflora*) and pond cypress (*Taxodium ascendens*). Less frequent hydrophytic trees include red maple (*Acer rubrum*), slash pine (*Pinus elliottii*) sweetgum (*Liquidambar styraciflua*), and sweetbay (*Magnolia virginiana*). Shrubs are sparse and usually limited to raised areas around cypress knees. Common shrubs include black titi (*Cliftonia monophylla*), wax myrtle (*Myrica cerifera*), St. John's wort (*Hypericum* spp.) and fetterbush (*Lyonia lucida*). Herbs are patchy and include switchcane (*Arundinaria gigantea*), clustered sedge (*Carex glaucescens*), sawgrass (*Cladium jamaicense*), woolly witchgrass (*Dichanthelium scabriusculum*), royal fern (*Osmunda regalis* var. *spectabilis*), camphorweed (*Pluchea* spp.), beaksedge (*Rhynchospora* spp.), sugarcane plumegrass (*Saccharum giganteum*), netted chain fern (*Woodwardia areolata*), and Virginia chain fern (*W. virginica*). Vines are infrequent and include laurel greenbrier (*Smilax laurifolia*).

Fire Regimes:

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

Management Needs:

The maintenance of natural hydrologic regimes is critical to the health of floodplain swamps and to the downstream systems with which they are connected. Species composition and the functional relationship throughout a river system are negatively impacted by hydrological alterations such as artificial impoundments, river diversion projects, and other high-intensity land use operations.

J. Mesic Flatwoods**Description:**

Mesic flatwoods are forests of southern pine species with even and uneven-aged structure. There is little or no subcanopy and very few tall shrubs, but a dense ground cover of herbs and short shrubs is typically present. The latter help maintain community structure by fueling growing-season fires. Common shrubs include saw palmetto (*Serenoa repens*), coastalplain staggerbush (*Lyonia fruticosa*), gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), tarflower (*Bejaria racemosa*), dwarf huckleberry (*Gaylussacia dumosa*), blue huckleberry (*G. frondosa* var. *tomentosa*), shiny blueberry (*Vaccinium myrsinites*), running oak (*Quercus elliottii*), and dwarf live oak (*Q. minima*). Mesic flatwoods are noted for their herbaceous diversity, including many rare species. Herbaceous species include wiregrass (*Aristida stricta* var. *beyrichiana*), arrowfeather threeawn (*A. purpurascens*), bottlebrush threeawn (*A. spiciformis*), lopsided Indiangrass (*Sorghastrum secundum*), witchgrasses (*Dichanthelium* spp.), beaksedges (*Rhynchospora* spp.), queensdelight

(*Stillingia sylvatica*), narrowleaf silkgrass (*Pityopsis graminifolia*), and Curtiss' dropseed (*Sporobolus curtissii*).

The ecotone between mesic flatwoods and wetland communities is an important area for many rare species and is maintained with frequent, low-intensity fires, typically every 2-4 years. Soils are mainly in the spodosol family, bearing a spodic horizon (i.e., a clay hardpan) that develops under poorly drained conditions. These low pH soils are characterized by low levels of nutrients and organic matter.

Current Conditions:

Most historic mesic flatwoods in THSF have been planted with slash pine (*Pinus elliottii*) and managed as pine plantations with varying degrees of disturbance from site preparation (bedding, herbicides, etc.). Stands mapped as current mesic flatwoods have been significantly thinned, retain a mostly natural understory composition, and are managed with prescribed fire. These are in fair to good condition. Stands that have received some thinning and fire, but that remain highly disturbed, indicate that management is moving the community towards a more natural structure. Mesic flatwoods in THSF are often intermixed with historical wet flatwoods, wet prairies, and scrubby flatwoods.

In recently disturbed sites and restoration areas, weedy species, primarily broomsedge (*Andropogon* spp.) are prevalent. Gallberry (*Ilex glabra*), large gallberry (*I. coriacea*), titi (*Cyrilla racemiflora*), and black titi (*Cliftonia monophylla*) are likely to dominate the understory and make a dense subcanopy when factors such as fire suppression, soil compaction, silvicultural beds, and proximity to shrub bogs have promoted the encroachment of these wetland shrubs.

The canopy layer of the mesic flatwoods community is dominated by slash pine (*Pinus elliottii*). Sand pine (*Pinus clausa*), and longleaf pine (*P. palustris*) are less frequent canopy species. The sub-canopy may include red maple (*Acer rubrum*), Atlantic white cedar (*Chamaecyparis thyoides*), black titi (*Cliftonia monophylla*), sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), swamp laurel oak (*Quercus laurifolia*), and water oak (*Q. nigra*).

Shrubs are generally shorter than 3 feet in well-burned areas. The shrub layer may be moderate to dense and includes saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), large gallberry (*I. coriacea*), black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), rusty staggerbush (*Lyonia ferruginea*), coastalplain staggerbush (*L. fruticosa*), fetterbush (*L. lucida*), wax myrtle (*Myrica cerifera*), myrtle oak (*Quercus myrtifolia*), dwarf huckleberry (*Gaylussacia dumosa*), blue huckleberry (*G. frondosa* var. *tomentosa*), woolly huckleberry (*G. mosieri*), peelbark St. John's wort (*Hypericum fasciculatum*), flatwoods St. John's wort (*H. microsepalum*), myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), yaupon (*I. vomitoria*), hairy wicky (*Kalmia hirsuta*), evergreen bayberry (*Myrica caroliniensis*), red chokeberry (*Photinia pyrifolia*), October flower (*Polygonella polygama*), dwarf live oak (*Quercus minima*), runner oak (*Q. pumila*), sand blackberry (*Rubus cuneifolius*), horse sugar (*Symplocos tinctoria*), highbush blueberry (*Vaccinium corymbosum*), Darrow's blueberry (*V. darrowii*), and shiny blueberry (*V. myrsinites*). In

drier areas that are transitional to scrubby flatwoods and sandhill, xeric species such as sand live oak (*Quercus geminata*), bluejack oak (*Q. incana*), Chapman's oak (*Q. chapmanii*), and turkey oak (*Q. laevis*) may be occasional.

The herbaceous layer is generally sparse, although higher quality areas may have a significant cover of wiregrass (*Aristida stricta* var. *beyrichiana*). Common herbs include bluestems (*Andropogon* spp.), bottlebrush threeawn (*Aristida spiciformis*), coastalplain chaffhead (*Carphephorus corymbosus*), vanillaleaf (*C. odoratissimus*), toothache grass (*Ctenium aromaticum*), witchgrass (*Dichanthelium* spp.), pink sundew (*Drosera capillaris*), flattop goldenrod (*Euthamia graminifolia* var. *hirtipes*), yaupon (*Ilex vomitoria*), rush (*Juncus* spp.), whitehead bogbutton (*Lachnocaulon anceps*), blazing star (*Liatris* spp.), primrosewillow (*Ludwigia* spp.), foxtail club-moss (*Lycopodiella alopecuroides*), clustered mille grains (*Oldenlandia uniflora*), warty panicgrass (*Panicum verrucosum*), narrowleaf silkgrass (*Pityopsis graminifolia*), drumheads (*Polygala cruciata*), orange milkwort (*P. lutea*), bracken fern (*Pteridium aquilinum*), blackroot (*Pterocaulon pycnostachyum*), savannah meadowbeauty (*Rhexia alifanus*), beaksedges (*Rhynchospora* spp.), whip nutrush (*Scleria triglomerata*), Florida dropseed (*Sporobolus floridanus*), Virginia chain fern (*Woodwardia virginica*), and yellow-eyed grass (*Xyris* spp.). Vines are occasional and include yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier (*Smilax auriculata*), saw greenbrier (*S. bona-nox*), cat greenbrier (*S. glauca*), laurel greenbrier (*S. laurifolia*), bristly greenbrier (*S. tamnoides*), eastern poison ivy (*Toxicodendron radicans*), and muscadine (*Vitis rotundifolia*).

Fire Regimes:

Mesic flatwoods require repeated applications of prescribed fires on a 2-4-year cycle.

Management Needs:

A prescribed fire return interval of every 2-4 years is recommended. Past silvicultural activities and lack of frequent prescribed fires have damaged native groundcover and allowed for woody encroachment in many areas. It may be necessary to apply fire more frequently in flatwoods where fuel levels are high due to a history of fire exclusion. Herbaceous plant flowering responses and growth are greatest if fires are applied in the late spring and early summer (March - June), however winter burning will be necessary for initial fuel reduction. During all stages of growth, pine canopies should be open enough to allow abundant light to reach the forest floor, to support a lush groundcover of shrubs, oaks, and grasses that can be burned every 2-4 years.

Priority should be given to burning areas of higher quality groundcover using both dormant and growing-season fires to encourage herbaceous species, especially wiregrass, to reproduce naturally. Groundcover plants may need to be seeded in areas of heavy disturbance.

K. 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 is important for aquifer recharge because the porous sands allow water to percolate rapidly with little runoff and minimal evaporation. The deep, sandy soils and a lack of near surface hardpan or water table contribute to a xeric environment. Sandhills are forests consisting of longleaf pine (*Pinus palustris*) trees, typically with a sparse subcanopy of turkey oak (*Quercus laevis*), bluejack oak (*Q. incana*) and/or sand post oak (*Q. margaretta*), and a fairly dense groundcover of herbs, particularly wiregrass (*Aristida stricta*). The greatest plant diversity within sandhill is in the herbaceous groundcover. Dominant grasses, in addition to wiregrass, include other three-awns (*Aristida* spp.), pineywoods dropseed (*Sporobolus junceus*), lopsided indiagrass (*Sorghastrum secundum*), several species of bluestems (*Andropogon* spp.), and little bluestem (*Schizachyrium scoparium*). Sandhills are fire-maintained communities that occur on relatively well-drained, deep sands.

Tate's Hell State Forest contains a few areas of historic sandhill occupying sandy rises predominantly within the High Bluff Tract. Some of these areas are intermediate with scrubby flatwoods and have a shrubbier understory with sometimes dense scrub oaks such as sand live oak (*Quercus geminata*), Chapman's oak (*Q. chapmanii*), myrtle oak (*Q. myrtifolia*), and less herbaceous groundcover than typical sandhill communities.

Current Conditions:

Most of the historic sandhills in THSF are in good condition. Though most sandhills were planted with slash pine (*Pinus elliotti*), thinning and prescribed fire has allowed many of these communities to recover and retain a mostly natural understory composition and structure. Stands classified as sandhill in the current map have had significant thinning of the slash pine, retain a mostly natural understory composition, and are managed with frequent prescribed fire. Stands mapped as restoration sandhills are similar to the natural condition, but with a denser canopy of slash pines that will likely need to be thinned.

Current sandhills in THSF have a canopy of slash pine (*Pinus elliottii*), sand pine (*P. clausa*), and less frequently, longleaf pine (*P. palustris*). The subcanopy consists of smaller canopy species, turkey oak (*Quercus laevis*), and bluejack oak (*Q. incana*). The relatively open shrub layer is mostly less than 3 feet tall and includes sand live oak (*Quercus geminata*), Chapman's oak (*Q. chapmanii*), myrtle oak (*Q. myrtifolia*), yaupon (*Ilex vomitoria*), false rosemary (*Conradina canescens*), woolly huckleberry (*Gaylussacia mosieri*), St. Andrew's cross (*Hypericum hypericoides*), gopher apple (*Licania michauxii*), fetterbush (*Lyonia lucida*), rusty staggerbush (*L. ferruginea*), pricklypear (*Opuntia humifusa*), dwarf live oak (*Quercus minima*), runner oak (*Q. pumila*), saw palmetto (*Sereinoa repens*), and Adam's needle (*Yucca filamentosa*). Herbs are common but form a sparse cover. Species observed include bluestems (*Andropogon* spp.), wiregrass (*Aristida stricta* var. *beyrichiana*), vanillaleaf (*Carphephorus odoratissimus*), witchgrass (*Dichanthelium* spp.), blazing star (*Liatris* spp.), lupine (*Lupinus* spp.), narrowleaf silkgrass (*Pityopsis graminifolia*), October flower (*Polygonella polygama*), and sandyfield beaksedge (*Rhynchospora megalocarpa*).

Fire Regimes:

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

Management Needs:

Groundcover restoration projects should focus on practices that will increase wiregrass abundance. Seasonal burns at a 1-3-year interval will be the most effective at accomplishing this. During all management activities, every effort should be made to minimize any detrimental effects to the gopher tortoise (*Gopherus polyphemus*) population (and its burrows) within this community, as this species is considered a keystone ecosystem component.

L. Scrub**Description:**

Scrub is a community composed of evergreen shrubs, with or without a canopy of pines, and is found on dry, infertile, sandy ridges. Signature scrub species include three species of shrub oaks: myrtle oak (*Quercus myrtifolia*), sand live oak (*Q. geminata*), and Chapman's oak (*Q. chapmanii*), Florida rosemary (*Ceratiola ericoides*), and sand pine (*Pinus clausa*). The oaks form a dense cover interspersed with patchy openings that consist of bare sand with a sparse cover of herbs, particularly threeawns (*Aristida* spp.), hairsedges (*Bulbostylis* spp.), and sandyfield beaksedge (*Rhynchospora megalocarpa*), as well as subshrubs such as pinweeds (*Lechea* spp.) and jointweeds (*Polygonella* spp.), and ground lichens (*Cladonia leporina*, *C. prostrata*, *Cladina subtenuis*, and *C. evansii*).

Scrubs occur on either white or yellow low-nutrient, acid sands with little organic matter. The dry ridges where scrub occurs often marks the location of former Plio-Pleistocene shorelines.

Current Conditions:

Scrub on THSF primarily occupies ancient high sand dunes along the mainland coast of Franklin County. These relict dunes formed during a dry period in the late Pleistocene when deposits of river sand were exposed by lower sea levels and then shaped by wind into low, often crescent or U-shaped dunes. Also known as eolian dunes, similar formations are also found near Cedar Key but are otherwise rare along the Florida coastline, since most dune formation occurs on beaches where sand is collected by marine processes and then built up by sea oats into linear features oriented parallel to the shore.

Scrub and scrubby flatwoods communities on relict dunes at THSF harbor several rare coastal plant species including Godfrey's blazing star (*Liatris provincialis*), Gulf Coast lupine (*Lupinus westianus*), and large-leaved jointweed (*Polygonella macrophylla*). Godfrey's blazing star is listed by the state of Florida as endangered. Gulf Coast lupine and large-leaved jointweed are listed as threatened. The large-leaved jointweed plants on the Tate's Hell dunes are unique in that they have deep scarlet flowers. All other large-leaved jointweeds have white or pinkish flowers and are found only west of the

Apalachicola River, separated by a 70-mile wide gap from the red-flowered Tate's Hell plants. Tate's Hell State Forest supports by far the largest population of the red-flowered form, consisting of approximately 150 plants at 17 sites.

Much of the historic scrub in THSF has been planted with slash pine (*Pinus elliottii*) in the past. Areas classified as scrub in the current map retain a mostly natural understory composition. Current scrubs are in fair to good condition.

The canopy consists of sand pine (*Pinus clausa*), slash pine (*P. elliottii*), and less frequently longleaf pine (*P. palustris*). Tall and short shrubs are moderate to dense and dominated by scrub oaks: Chapman's oak (*Quercus chapmanii*), sand live oak (*Q. geminata*), and myrtle oak (*Q. myrtifolia*). Other shrubs include Florida rosemary (*Ceratiola ericoides*), false rosemary (*Conradina canescens*), gopher apple (*Licania michauxii*), rusty staggerbush (*Lyonia ferruginea*), fetterbush (*L. lucida*), pricklypear (*Opuntia humifusa*) and saw palmetto (*Serenoa repens*). Herbs are sparse with capillary hairsedge (*Bulbostylis ciliatifolia*), frostweed (*Helianthemum* spp.), Gulf Coast lupine (*Lupinus westianus*), narrowleaf silkgrass (*Pityopsis graminifolia*), tall jointweed (*Polygonella gracilis*), and beaksedge (*Rhynchospora* spp.). Vines are infrequent and include earleaf greenbrier (*Smilax auriculata*) and sarsaparilla vine (*S. pumila*).

Fire Regimes:

Scrub fire regimes are highly variable, depending on landscape settings and dominant vegetation. Current scientific research suggests oak-dominated scrub would have naturally burned every 3 to 19 years. Scrub fires are often high intensity and require careful application.

Management Needs:

A mosaic of scrub of varying shrub heights is desirable. Encourage fires from adjacent flatwoods to burn into the scrub. A fire prescription targeting scrub should be used if shrub height or density, or bare soil percentage are outside of desired ranges. Mechanical treatments should be used only if necessary to burn safely or achieve desired conditions. Chopping may reduce shrub cover in problem areas.

M. Scrubby Flatwoods

Description:

Scrubby flatwoods are a well-drained, pine-dominated community intermediate between scrub and mesic flatwoods. Good quality scrubby flatwoods have a canopy of longleaf pines (*Pinus palustris*) or slash pine (*Pinus elliottii*) and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. The shrub layer consists of a variety of mesophytic and xerophytic species, including rusty staggerbush (*Lyonia ferruginea*), coastalplain staggerbush (*L. fruticosa*), fetterbush (*L. lucida*), Chapman's oak (*Quercus chapmanii*), sand live oak (*Q. geminata*), myrtle oak (*Q. myrtifolia*), winged sumac (*Rhus copallinum*), saw palmetto (*Serenoa repens*), and shiny blueberry (*Vaccinium myrsinites*). Unlike scrub, a herbaceous layer dominated by wiregrass (*Aristida stricta* var. *beyrichiana*) is present and helps to carry fire through the community more regularly than in scrub. Typical herbs include witchgrass (*Dichanthelium*

spp.), tall elephantsfoot (*Elephantopus elatus*), narrowleaf silkgrass (*Pityopsis graminifolia*), blackroot (*Pterocaulon pycnostachyum*), and lopsided indiagrass (*Sorghastrum secundum*).

Scrubby flatwoods occur on slight rises within mesic flatwoods and in transitional areas between scrub and mesic flatwoods. Soils of scrubby flatwoods are moderately well-drained sands with or without a spodic horizon.

Current Conditions:

The majority of scrubby flatwoods at THSF have been converted to pine plantation in the past. Most of these stands are now mapped as scrubby flatwoods, due to significant thinning, retention of a mostly natural understory composition, and management with prescribed fire. Restoration scrubby flatwoods are similar to the natural condition, but with a denser canopy of slash pines that will likely need to be thinned. The condition for all of these sites is fair to good, partly because the xeric soils were not deeply bedded for site preparation.

At THSF the canopy is composed of sand pine (*Pinus clausa*) and slash pine (*P. elliotii*) with occasional longleaf pine (*P. palustris*) and loblolly pine (*P. taeda*). The sparse subcanopy may include southern red oak (*Quercus falcata*), sand live oak (*Q. geminata*), and bluejack oak (*Q. incana*). Small inclusions of sandhill with a subcanopy of turkey oak (*Quercus laevis*) are common on THSF, especially in the High Bluff Tract. The shrub understory is diverse with Florida rosemary (*Ceratiola ericoides*), false rosemary (*Conradina canescens*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), rusty staggerbush (*Lyonia ferruginea*), coastalplain staggerbush (*L. fruticosa*), fetterbush (*L. lucida*), wax myrtle (*Myrica cerifera*), Chapman's oak (*Quercus chapmanii*), sand live oak (*Q. geminata*), dwarf live oak (*Q. minima*), myrtle oak (*Q. myrtifolia*), saw palmetto (*Serenoa repens*), sweet pepperbush (*Clethra alnifolia*), dwarf huckleberry (*Gaylussacia dumosa*), woolly huckleberry (*G. mosieri*), American holly (*Ilex opaca*), and pricklypear (*Opuntia humifusa*).

Herbs are diverse, but typically sparse with Elliott's bluestem (*Andropogon gyrans*), wiregrass (*Aristida stricta* var. *beyrichiana*), coastalplain chaffhead (*Carphephorus corymbosus*), vanillaleaf (*Carphephorus odoratissimus*), witchgrass (*Dichanthelium* spp.), blazing star (*Liatris* spp.), Gulf Coast lupine (*Lupinus westianus*), maidencane (*Panicum hemitomon*), narrowleaf silkgrass (*Pityopsis graminifolia*), tall jointweed (*Polygonella gracilis*), October flower (*Polygonella polygama*), bracken fern (*Pteridium aquilinum*), sandyfield beaksedge (*Rhynchospora megalocarpa*), and lopsided indiagrass (*Sorghastrum secundum*). Vines are infrequent with earleaf greenbrier (*Smilax auriculata*) and sarsaparilla vine (*S. pumila*).

Fire Regimes:

A fire return interval of 3 - 5 years is generally recommended for scrubby flatwoods. However, scrubby flatwoods within THSF are mostly smaller patch communities embedded in mesic flatwoods and have vegetation intermediate with sandhill communities. It is likely that these flatwoods burned more frequently with the surrounding landscape.

Variability in season and frequency of prescribed fires should produce a mosaic of burned and unburned patches desirable for maintaining high biotic diversity in this community.

Management Needs:

Maintain a fire interval between 3 - 5 years with more fires toward the shorter end of the range. Encourage fires from adjacent flatwoods to burn into the scrubby flatwoods. A fire prescription targeting the scrubby flatwoods should be used if shrub height or density, or bare soil percentage are outside of desired ranges.

N. Shrub Bog

Description:

Shrub bogs are dense stands of broadleaved evergreen shrubs, vines, and short trees, one to five meters tall depending on time since fire, with or without an overstory of scattered pine or bay trees, growing in mucky soil where water is usually less than a foot deep. Characteristic shrubs include titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), fetterbush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), wax myrtle (*Myrica cerifera*), and sweet pepperbush (*Clethra alnifolia*), often laced together with laurel greenbrier (*Smilax laurifolia*). Taller pines, either pond (*Pinus serotina*), slash (*P. elliotii*), or loblolly (*P. taeda*), may be present and in some cases of long unburned stands, form dense clumps. Other occasional trees that may extend above the shrub layer are loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), pond cypress (*Taxodium ascendens*), and stunted red maple (*Acer rubrum*). Herbs are sparse and patchy, confined to sunny openings, and often include tenangle pipewort (*Eriocaulon decangulare*), Virginia chain fern (*Woodwardia virginica*), and pitcher plants (*Sarracenia* spp.). Soils of shrub bogs frequently have an organic muck layer of varying depth at the surface underlain by sand or loamy sands. Sphagnum moss (*Sphagnum* spp.) is common on the ground surface.

On the 1953 aerial photographs, basin wetlands in THSF appear to be a complex mosaic of shrub bog (titi shrubs lacking a hardwood canopy), baygall (bay tree dominated), and basin swamp (cypress/tupelo dominated). The distinction between these communities is difficult to delineate, and the pattern has shifted over the last century due to changing hydrology and fire patterns. Basin wetlands with a smooth grey signature were assumed to be historic shrub bogs. Many are rounded to irregularly shaped communities in a matrix of basin swamp, baygall, and wet flatwoods, but others are linear features along narrow drainages. This community is common throughout THSF.

Current Conditions:

The pattern of shrub bogs at THSF has changed substantially over the past several decades due to intensive silviculture that has converted large areas to planted slash pine stands. At the same time, shrub bog vegetation has expanded into former pine flatwoods following site preparation and hydrology alteration. Some basin swamps, baygalls, wet flatwoods, and wet prairies appear to have shifted to shrub bog vegetation, possibly due to either logging or a shift in fire pattern and hydrology.

Many shrub bogs that were converted to pine stands have been thinned and burned recently, and somewhat resemble wet flatwoods. These areas are mapped as pine plantations, but may regenerate a shrub bog understory over time. Current shrub bogs have a dense shrub layer of black titi (*Cliftonia monophylla*) and/or titi (*Cyrilla racemiflora*). Other shrubs include sweet pepperbush (*Clethra alnifolia*), woolly huckleberry (*Gaylussacia mosieri*), peelbark St. John's wort (*Hypericum fasciculatum*), myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), large gallberry (*I. coriacea*), gallberry (*I. glabra*), yaupon (*I. vomitoria*), coastal doghobble (*Leucothoe axillaris*), swamp doghobble (*L. racemosa*), fetterbush (*Lyonia lucida*), evergreen bayberry (*Myrica caroliniensis*), wax myrtle (*M. cerifera*), groundsel tree (*Baccharis halimifolia*), and red chokeberry (*Photinia pyrifolia*).

Herbs are patchy, usually occurring in openings where a road or other disturbance intersects the bog. Common herbs include bluestems (*Andropogon* spp.), clustered sedge (*Carex glaucescens*), witchgrass (*Dichanthelium* spp.), pink sundew (*Drosera capillaris*), pipewort (*Eriocaulon* spp.), slender flattop goldenrod (*Euthamia caroliniana*), Carolina redroot (*Lachnanthes caroliana*), primrosewillow (*Ludwigia* spp.), foxtail club-moss (*Lycopodiella alopecuroides*), beaksedge (*Rhynchospora* spp.), yellow hatpins (*Syngonanthus flavidulus*), netted chain fern (*Woodwardia areolata*), Virginia chain fern (*W. virginica*), and yellow-eyed grass (*Xyris* spp.). Sphagnum moss commonly occurs in these openings among herbs. Vines are moderate to dense with yellow jessamine (*Gelsemium sempervirens*), earleaf greenbrier (*Smilax auriculata*), laurel greenbrier (*S. laurifolia*), and muscadine (*Vitis rotundifolia*).

Fire Regimes:

Fires starting in the surrounding pinelands burn to the edges of shrub bogs, but burn through them only during drought periods, probably on the order of every 10-20 years. The shrubs and bay trees respond to fire by re-sprouting, either from root crowns or rhizomes. During droughts, the peat may become dry enough to burn completely.

Management Needs:

Management should focus on hydrology restoration. Remaining planted pines in shrub bogs could be clearcut but will likely not be detrimental to the bog over time. If possible, fires should be allowed to burn into shrub bog edges to limit titi encroachment into surrounding communities.

O. Swamp Lake

Description:

Swamp lakes are generally characterized as shallow open water zones, with or without floating and submerged aquatic plants that are surrounded by swamp. They are generally permanent water bodies, although water levels often fluctuate substantially, and they may become completely dry during extreme droughts. They are typically lentic water bodies occurring in confined basins or depressions. However, during floods or following heavy rains, they may exhibit decidedly lotic characteristics, flowing with the flood water or overflowing their banks into lower topographic areas. Some may even exhibit a slow perennial sheet flow, but water movement is generally so slow that lentic conditions prevail.

Except for the fringe of hydrophytic trees, shrubs, and scattered emergents, plants may be absent altogether, or they may almost completely cover the water surface. Scattered emergent plants may also occur.

One area of open water embedded in a basin swamp is mapped as a swamp lake on the High Bluff Tract.

Current Conditions:

Currently, the swamp lake mapped on THSF appears similar to the 1953 aerial photographs.

Fire Regimes:

Fire is not required to maintain this community.

Management Needs:

Management should focus on restricting hydrological manipulations and avoiding land clearing within the surrounding swamp.

P. Wet Flatwoods

Description:

Wet flatwoods are characterized by a canopy of pines with a thick shrubby understory and very sparse ground cover, or a fire-maintained, sparse understory and dense ground cover of hydrophytic herbs. Wet flatwoods exist on relatively flat, poorly drained land. The soils are generally 0.3 to 1 m (ca. 1 to 3 ft.) of acidic sands overlying an organic hardpan or clay layer. The hardpan substantially reduces the percolation of water below and above its surface, and therefore wet flatwoods can be inundated for 1 or more months per year. Wet flatwoods often grade into basin swamps, shrub bogs, and mesic flatwoods.

Although the forest structure of wet flatwoods is similar to mesic flatwoods, species composition in wet flatwoods has more hydrophytic species. Shrub species that tend to occupy wet flatwoods are gallberry (*Ilex glabra*), myrtle dahoon (*I. cassine* var. *myrtifolia*), fetterbush (*Lyonia lucida*), saw palmetto (*Serenoa repens*), loblolly bay (*Gordonia lasianthus*), and titi (*Cyrilla racemiflora*). As in mesic flatwoods, the herbaceous layer in wet flatwoods includes species that help to maintain community structure by fueling growing-season fires; wiregrass (*Aristida stricta* var. *beyrichiana*) is dominant in herb-dominated understories. Other typical species include meadowbeauties (*Rhexia* spp.), yellow-eyed grasses (*Xyris* spp.), and several species of beak-sedges (*Rhynchospora* spp.). Shrubby wet flatwoods may have a more continuous cover of hydrophytic shrubs and may be very similar to shrub bogs. However, the slightly drier conditions and more frequent fire regime should limit the height of these shrubs.

On the 1953 geo-rectified photographs, wet flatwoods appear similar to mesic flatwoods. The distinction between the two is difficult to make on the historic aerials. All of the wet and mesic flatwoods areas should be treated similarly for desired future conditions. Flatwoods imbedded in shrub bogs or adjacent to them are also very difficult to delineate.

Current Conditions:

Most historic wet flatwoods in THSF have been planted with slash pine (*Pinus elliottii*) and managed as pine plantations with varying degrees of disturbance from site preparation. Stands mapped as current wet flatwoods have been significantly thinned, retain a mostly natural understory composition, and are managed with prescribed fire. Wet flatwoods with a history of silviculture activities and lack of prescribed fire are extremely susceptible to woody encroachment, particularly by black titi (*Cliftonia monophylla*) and titi (*Cyrilla racemiflora*). These areas need frequent prescribed fire to decrease shrub abundance and increase herbaceous diversity. In recently disturbed sites, weedy species, primarily broomsedge (*Andropogon* spp.) and Carolina redroot (*Lachnanthes carolina*) are prevalent. Silvicultural beds are common. Dense, unthinned planted pine stands on historic wet flatwoods also exist but are mapped as pine plantations.

The dominant canopy species in wet flatwoods is slash pine (*Pinus elliottii*). Some large portions of wet flatwoods at THSF contain a significant cover of pond cypress (*Taxodium ascendens*) and/or bald cypress (*Taxodium distichum*) in the canopy and understory (visible on historic aerals). Other common subcanopy species include red maple (*Acer rubrum*), Atlantic white cedar (*Chamaecyparis thyoides*), sweetbay (*Magnolia virginiana*), swamp laurel oak (*Quercus laurifolia*), and water oak (*Q. nigra*). Shrubs are moderate to dense with black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), yaupon (*I. vomitoria*), sweet pepperbush (*Clethra alnifolia*), woolly huckleberry (*Gaylussacia mosieri*), peelbark St. John's wort (*Hypericum fasciculatum*), myrtle-leaved holly (*Ilex cassine* var. *myrtifolia*), coastalplain staggerbush (*Lyonia fruticosa*), fetterbush (*L. lucida*), wax myrtle (*Myrica cerifera*), swamp bay (*Persea palustris*), sparkleberry (*Vaccinium arboreum*), dwarf huckleberry (*Gaylussacia dumosa*), coastal doghobble (*Leucothoe axillaris*), swamp doghobble (*L. racemosa*), evergreen bayberry (*Myrica caroliniensis*), and highbush blueberry (*Vaccinium corymbosum*).

Herbs are sparse to moderate with bluestems (*Andropogon* spp.), smallfruit beggarticks (*Bidens mitis*), clustered sedge (*Carex glaucescens*), spadeleaf (*Centella asiatica*), woolly witchgrass (*Dichanthelium scabriusculum*), dogfennel (*Eupatorium capillifolium*), flattop goldenrod (*Euthamia graminifolia* var. *hirtipes*), Carolina redroot (*Lachnanthes carolina*), whitehead bogbutton (*Lachnocaulon anceps*), golden crest (*Lophiola aurea*), primrosewillow (*Ludwigia* spp.), camphorweed (*Pluchea* spp.), bracken fern (*Pteridium aquilinum*), meadowbeauty (*Rhexia* spp.), beaksedge (*Rhynchospora* spp.), sugarcane plumegrass (*Saccharum giganteum*), Florida dropseed (*Sporobolus floridanus*), yellow hatpins (*Syngonanthus flavidulus*), netted chain fern (*Woodwardia areolata*), Virginia chain fern (*W. virginica*), and yellow-eyed grass (*Xyris* spp.). Some areas of wet flatwoods that border marsh communities contain a significant groundcover of sawgrass (*Cladium jamaicense*). Higher quality portions of wet flatwoods and restoration wet flatwoods contain a diversity of herbs such as wiregrass (*Aristida stricta* var. *beyrichiana*), yellow colic-root (*Aletris lutea*), pink sundew (*Drosera capillaris*), tenangle pipewort (*Eriocaulon decangulare*), and foxtail club-moss (*Lycopodiella alopecuroides*). Vines are infrequent to dense with earleaf greenbrier (*Smilax auriculata*), saw greenbrier (*S. bona-nox*), cat

greenbrier (*S. glauca*), laurel greenbrier (*S. laurifolia*), eastern poison ivy (*Toxicodendron radicans*), and muscadine (*Vitis rotundifolia*).

Fire Regimes:

Historically, the fire return interval in wet flatwoods is 3 to 10 years. However, in areas of heavy fire exclusion and/or densely planted slash pine, mechanical vegetation removal and/or a more frequent fire interval may need to be applied for initial restoration.

Management Needs:

Management of the wet flatwoods at THSF should focus on returning a more natural fire regime to historic wet flatwoods. Areas with remnant or restored herbaceous vegetation should be high priorities for burning and burned with late spring/early summer fires to stimulate wiregrass flowering and seed viability. Dense slash pine canopies may be thinned to promote a more herbaceous understory.

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

Q. Wet Prairie**Description:**

Wet prairie is a herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods. Trees and shrubs are absent or very sparse. It is typically dominated by dense wiregrass (*Aristida stricta* var. *beyrichiana*) in the drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly (*Muhlenbergia expansa*), yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty (*Rhexia alifanus*). In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*), plus longleaved threeawn (*Aristida palustris*). Also, common in wetter areas are carnivorous species, such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia* spp.). Other characteristic species in this community include toothache grass (*Ctenium aromaticum*), pineland rayless goldenrod (*Bigelovia nudata*), flattened pipewort (*Eriocaulon compressum*), water cowbane (*Oxypolis filifolia*), and coastalplain yellow-eyed grass (*Xyris ambigua*).

Historically at Tate's Hell, wet prairies commonly occurred as both small, linear ecotones between uplands (flatwoods) and forested wetlands and large flat basins covering significant acreage. In the 1953 aerial photographs, large portions of historic wet prairie at THSF appear to contain scattered cypress trees (*Taxodium* spp.) in the canopy. These areas were groundtruthed and classified as wet prairie in the maps and have "cypress savanna" noted in the comments.

Current Conditions:

Most of the historic wet prairies at THSF have been bedded and planted with commercial stands of slash pine (*Pinus elliottii*). In recent years, some of these stands have been thinned and prescribed fire has been returned to the community, promoting an increase in native groundcover. However, weedy species are still common, and soil disturbance is continuing to disrupt natural processes.

The canopy of intact and restoration contain a sparse to moderate canopy of slash pine (*Pinus elliottii*). Pond (or bald) cypress (*Taxodium ascendens*) is scattered in the canopy and subcanopy of wet prairie cypress savannas. Tall shrubs are sparse to moderate and include black titi (*Cliftonia monophylla*), titi (*Cyrilla racemiflora*), large gallberry (*Ilex coriacea*), gallberry (*I. glabra*), fetterbush (*Lyonia lucida*), sweetbay (*Magnolia virginiana*), and wax myrtle (*Myrica cerifera*). Common short shrubs include sweet pepperbush (*Clethra alnifolia*), woolly huckleberry (*Gaylussacia mosieri*), St. John's wort (*Hypericum* spp.), evergreen bayberry (*Myrica caroliniensis*), and bog tupelo (*Nyssa ursina*).

Herbs are often dense and diverse, with typical species including wiregrass (*Aristida stricta* var. *beyrichiana*), toothache grass (*Ctenium aromaticum*), flattened pipewort (*Eriocaulon compressum*), tenangle pipewort (*Eriocaulon decangulare*), meadowbeauty (*Rhexia* spp.), beaksedges (*Rhynchospora* spp.), yellow pitcherplant (*Sarracenia flava*), white-top pitcherplant (*Sarracenia leucophylla*), parrot pitcherplant (*Sarracenia psittacina*), yellow hatpins (*Syngonanthus flavidulus*), yellow-eyed grasses (*Xyris* spp.).

The state endangered wiregrass gentian (*Gentiana pennelliana*) was found in several higher quality, large open wet prairies. Godfrey's butterwort (*Pinguicula ionantha*, federally threatened, state endangered) and Chapman's butterwort (*Pinguicula planifolia*, state threatened) were occasionally found in sections of intact wet prairie often bordering basin swamps.

Fire Regimes:

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

Management Needs:

Management of the restoration wet prairie in THSF should focus on returning a more natural fire regime to historic wet prairie and restoring hydrology. Pine stands could potentially be thinned further. Pine needle drape may also assist with carrying fire through the silviculture furrows and areas of sparse herbaceous cover.

Prescribed burning should be applied to historic wet prairie on a 2-3-year cycle, with frequent growing season burns when possible. This will reduce woody encroachment, sustain herbaceous species, and aid in prevention of catastrophic wildfires.

VIII. **References**

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

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

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

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

IX. **Glossary of Abbreviations**

ARC	Acquisition and Restoration Council
BMP	Best Management Practice
CARL	Conservation and Recreation Lands
DACS	Department of Agriculture and Consumer Services
DEP	Department of Environmental Protection
DHR	Division of Historical Resources
DRP	Division of Recreation and Parks
FCT	Florida Communities Trust
FFS	Florida Forest Service
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
NRCS	Natural Resources Conservation Service
NFWFMD	Northwest Florida Water Management District
OALE	DACS Office of Agricultural Law Enforcement
OFW	Outstanding Florida Water
OGT	DEP Office of Greenways & Trails
P2000	Preservation 2000
TIITF	Board of Trustees of the Internal Improvement Trust Fund
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
THSF	Tate's Hell State Forest
TNC	The Nature Conservancy
WMA	Wildlife Management Area

TATE'S HELL STATE FOREST
2019 LAND MANAGEMENT PLAN

EXHIBITS

Exhibit A

Ten Year Management Accomplishment Summary

TATE'S HELL STATE FOREST 10-YEAR ACCOMPLISHMENT REPORT

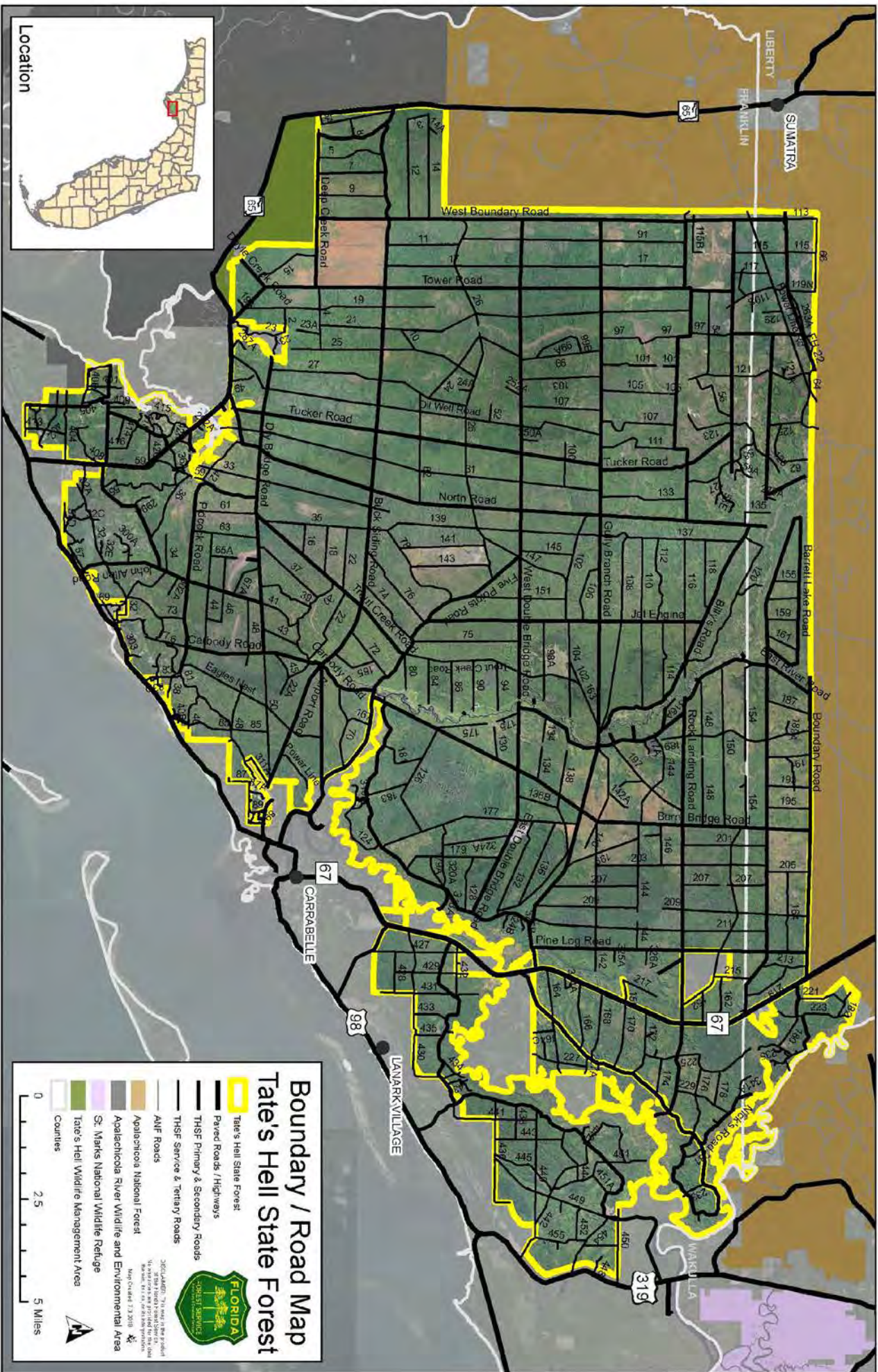
PLANTING		ACTIVITIES		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	TOTAL
Planting (Indicate Species & Bareroot (B) or Containerized (C))	Slash Bareroot	No.		1,214,645	420,000	0	0	0	0	0	0	0	366,232	0	20,208,777
		Acres		1,723	529	0	0	0	0	0	0	0	532	0	2,780
	Containerized LL	No.		458,505	151,000	0	4,000	0	0	0	123,420	32,000	18,150	68,362	885,437
		Acres		645	207	0	10	0	0	0	170	83	25	100	1,297
	Hardwood	No.		0	0	0	6,000	0	0	0	0	0	0	0	6,000
		Acres		0	0	0	23	0	0	0	0	0	0	0	20
	OTHER	No.		0	0	0	0	0	0	0	0	0	0	0	0
	Acres		0	418	0	0	0	0	0	0	0	0	0	0	418
Seedling Survival Checks	Survival Checks	Acres		1,759	2,372	732	703	0	0	0	0	170	0	557	6,293
Timber Inventory	Inventory update	Acres		4,943	18,992	127,515	0	0	17,910	14,318	13,523	16,689	19,663		233,559
	New Inventory	Acres		0	0	0	18,308	17,498	0	0	0	0	0	14,011	50,404
	Plots	Plots			1,051	0	0	894	755	833	722	755	667	1003	6,664
Site Preparation (pre-plant)	Chop Single Pass	Acres		438	1,254	0	92	0	0	0	170	0	70	37	2,579
	Chop Tandem	Acres		0	0	0	0	0	0	0	0	0	391	43	434
	Herbicide	Acres		1,768	0	0	0	0	0	170	0	0	591	0	2,489
	Burn	Acres		0	0	0	92	0	0	0	170	0	576	0	898
	Mowing	Acres		0	219	0	10	0	30	0	40	0	25	11	335
Control (Indicate Species)	Air Potato	Acres		0	0	0	0	0	0	0	2	2	0	0	4
	Chinese Tallow	Acres		0	0	0	0	0	0	4	0	0	0	0	4
	Cogon Grass	Acres		0	0	2	1	0	0	20	5	8	5	10	51
	Japanese Climbing Fern	Acres		81	8	73	63	0	33	145	54	170	151	755	1,036
	Torpedo Grass	Acres		0	0	0	0	0	0	0	0	1	0	0	1
	Mimosa Tree	Acres		0	0	0	0	0	0	0	0	0	2	0	2
Timber Stand Improvement	Mechanical Treatments - Chopping	Acres		0	7	0	0	0	0	0	0	0	0	0	7
TIMBER SALES		ACTIVITIES		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	TOTAL
Preparation for next Fiscal Year	Marking - FFS	Acres		1,280	91	3	0	15	30	0	0	0	0	0	1,419
	Sale Acreage to Cruise	Acres		9,195	171	140	571	4,126	4,148	4,431	1,697	99	198	503	24,919
Current Year Sales	Harvest	Acres		0	3597	1,168	5,487	7,123	2,564	3,442	4,110	5,602	6,872	3,753	41,196
		Tons		229,426	100,703	32,784	153,645	201,322	73,715	120,197	144,068	196,142	240,526	131,307	1,550,121
	Sale Acreage to Cruise	Acres		0	0	0	0	0	0	0	0	0	0	0	0
		Tons		0	0	0	0	0	0	0	0	0	0	0	0
Recreation	Day Use	No.		378	30,028	36,729	245,724	563,835	230,047	386,650	256,379	252,336	254,936	247,496	2,504,697
	Overnight- Primitive	No.		341	339	418	1,353	1,665	1,336	1,020	15,238	13,808	14,283	13,880	64,258
	Annual OHV/Motorcycle Permits	No.		0	0	0	0	0	0	0	4	5	2	6	11
	Day/3Day OHV/Motorcycle Permits	No.		31	22	15	90	60	98	114	138	99	58	83	809
Fire	Wildfire	No.		27	6	3	11	2	0	0	1	2	3	2	575
	Wildfire	Acres		2,418	29	31	561	5	0	0	209	46	135	509	3,943
	Prescribed burning	Acres		55,203	44,957	46,270	25,471	41,508	32,228	30,393	31,923	30,762	39,269	34,623	411,571
Roads & Bridges	Roads Graded	Miles		704	517	679	1,092	1,076	737	721	608	818	888	935	8,285
	Roads Constructed	Miles		0	3	0	0	0	0	0	0	0	0	0	3
	Roads Rebuilt / Repaired	Miles		22	32	43	31	40	79	75	34	54	49	43	501
	Bridges Built	No.		0	0	0	1	0	0	0	0	0	0	0	1
	Bridges Repaired	No.		34	1	2	0	1	0	0	0	0	0	4	82
	Culverts Installed	No.		8	13	23	16	15	22	13	13	49	21	16	209
	Low W. Cross. Inst.	No.		2	1	0	0	0	0	0	0	13	0	0	15
	Other	No.		251	0	57	5	0	0	0	0	0	0	0	313
Boundary Maint.	Maintenance/Marking	Miles		23	60	74	10	55	35	30	74	45	102	54	562
I&E Activities	Programs/Tours	No.		1	9	6	2	1	3	0	3	3	3	2	31
	Radio - TV - Articles	No.		4	7	4	9	0	0	0	2	2	2	1	31
	Ed./Research Projects	No.		2	1	2	3	0	2	0	0	1	2	1	14
OTHER ACTIVITIES (Fill in Type)	Road Chopping/Disking/Mowing (total Rx burn prep and road maintenance)	Miles		538	551	516	693	438	612	524	269	68	170	237	4,617
	Irrigate crew hours	No.		5,862	5,828	6,510	5,804	7,318	6,772	6,636	5,894	6,376	6,598	6,313	69,902
	Apiary Permits	No.		68	73	93	35	53	33	53	74	84	82	83	735
	Wood Permits	No.		7	8	18	22	5	9	9	9	4	6	2	99
	Worm Permits	No.		3	43	19	24	13	4	16	15	15	10	7	169
	Road Box Blade	No.		18	0	0	22	0	0	0	0	0	0	0	40
	Food Plots Planted	Acres		0	0	50	51	99	105	105	92	92	89	0	684
	Endangered Species Mowing	Acres		0	0	80	153	65	175	0	0	63	93	0	631
	Hunt Camp Permits	No.		32	27	28	26	28	25	29	29	29	29	29	317
	Salamander Pond Restoration	Acres		0	0	0	0	0	0	0	0	4	0	0	4
	RCW Recruitment Clusters	No.		0	0	0	0	0	0	0	0	2	0	0	2
	Mowing (road shoulders/service roads)	Miles		0	0	0	0	0	624	506	0	721	522	689	3,064

Exhibit B

Boundary Maps



Location



Boundary / Road Map

Tate's Hell State Forest

- Tate's Hell State Forest
- Paved Roads / Highways
- THSF Primary & Secondary Roads
- THSF Service & Tertiary Roads
- ANF Roads
- Apalachicola National Forest
- Apalachicola River Wildlife and Environmental Area
- St. Marks National Wildlife Refuge
- Tate's Hell Wildlife Management Area

FLORIDA
DEPARTMENT OF
NATURAL RESOURCES
FOREST SERVICE

0 2.5 5 Miles

2020 ADDED: The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow.

2020 ADDED: The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow.

2020 ADDED: The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow. The boundary of the forest is shown in yellow.

Exhibit C

Optimum Management Boundary Map

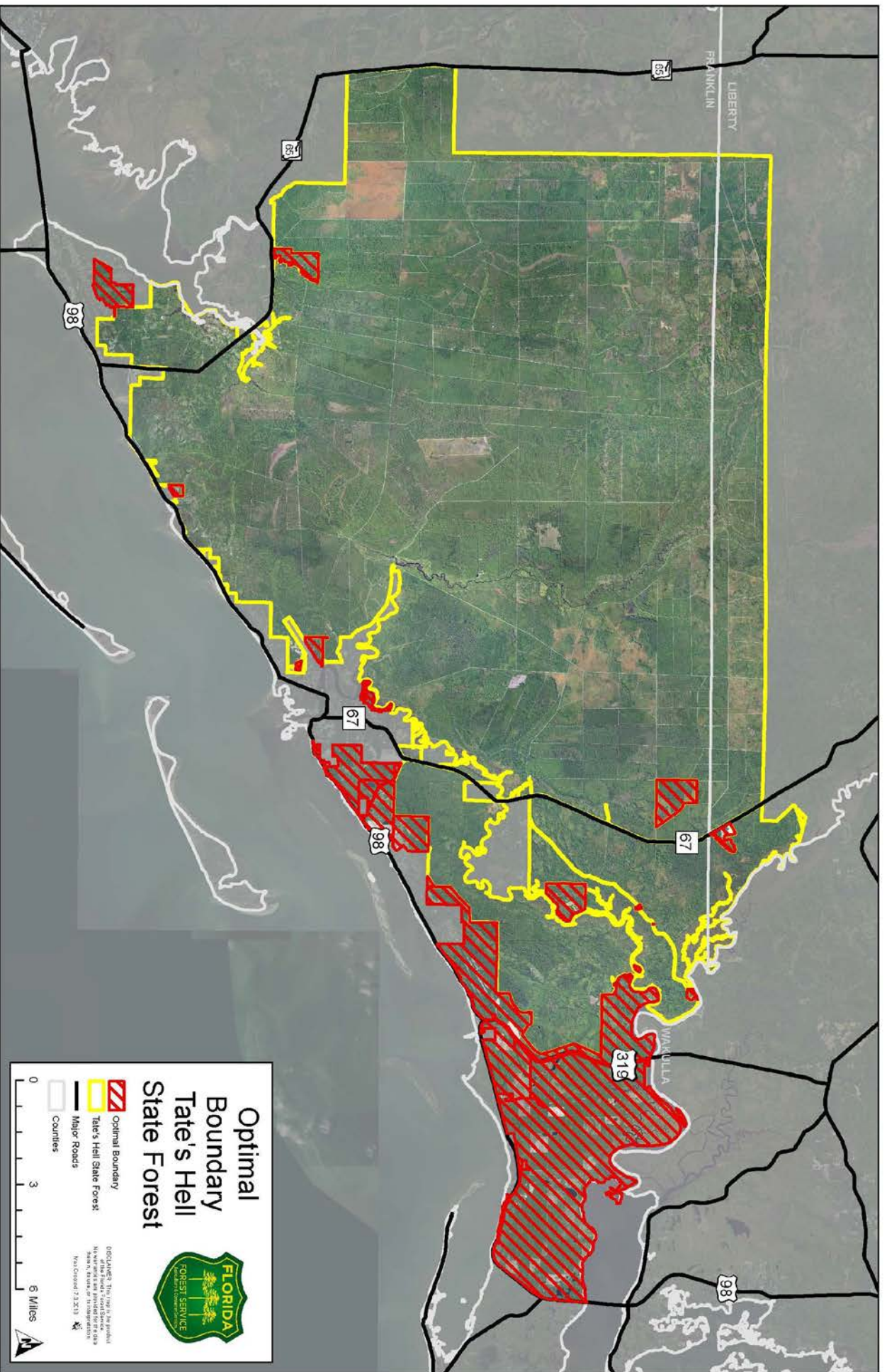


Exhibit D

Road Map

Exhibit E

Facilities, Recreation, and Improvements

Exhibit F

Tract & Acreage Maps

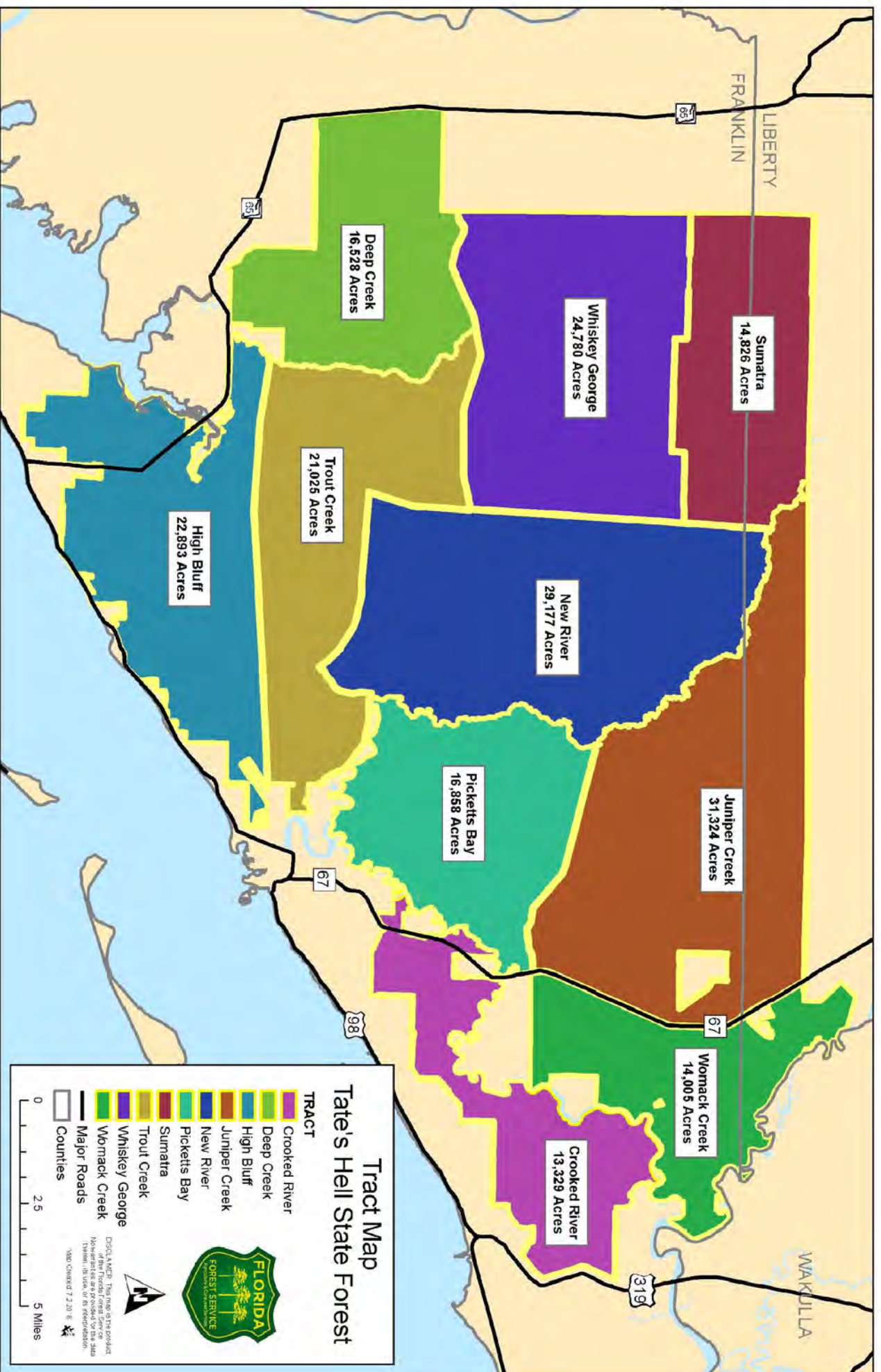


Exhibit G

Proximity to Significant Managed Lands

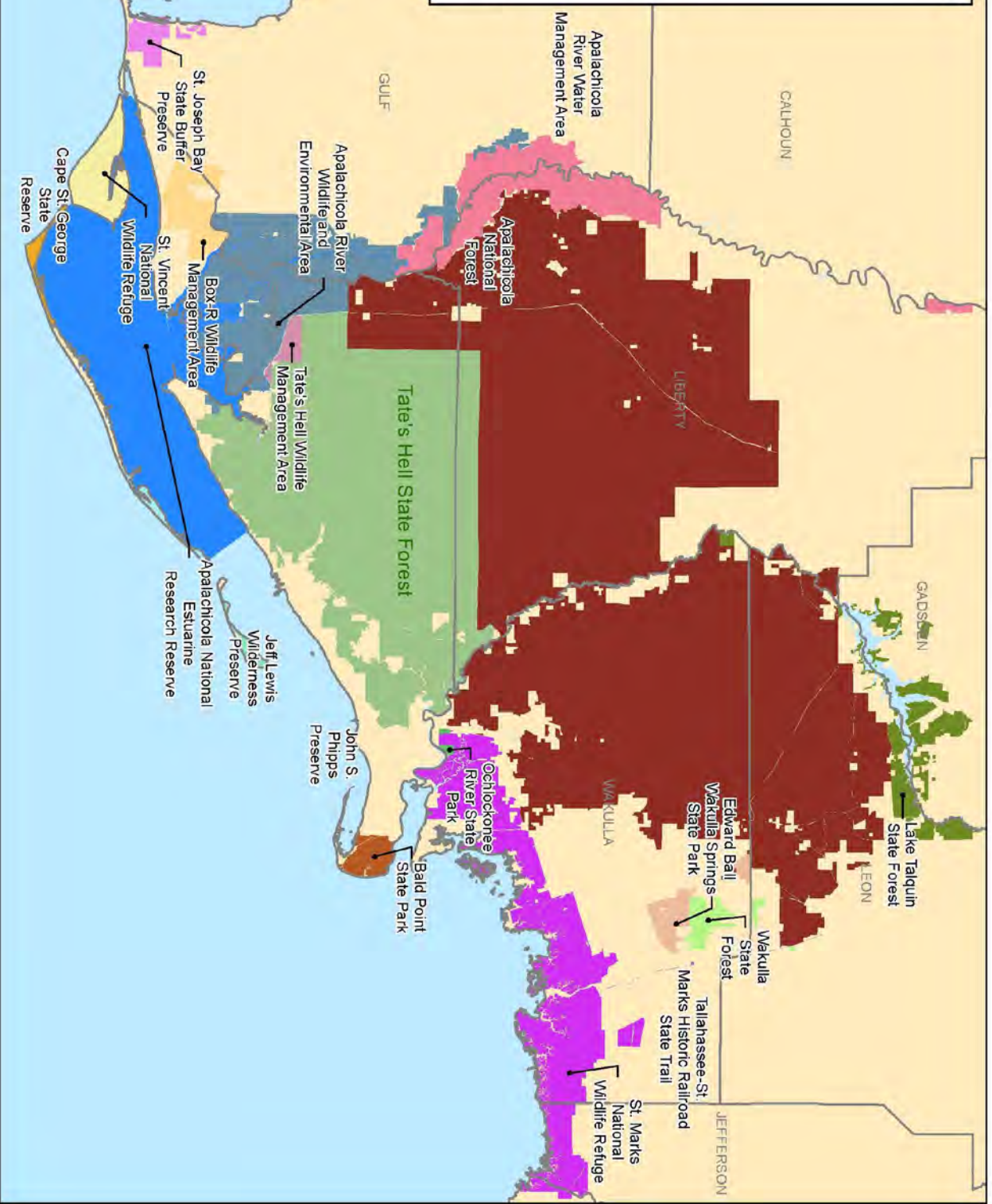
[illegible]

Exhibit H

Florida Forever Projects

St. Joe Timberland

Bay, Franklin, Gadsden, Jefferson, Leon, Liberty,
Taylor, Wakulla, Walton and Washington Counties

Climate Change Lands

Purpose for State Acquisition

The St. Joe Company is one of the largest landowners in Florida. The St. Joe Timberland project will consolidate the St. Joe ownerships already included in other projects, thus helping to preserve large undeveloped tracts of land for native plants and animals and giving the public an opportunity to experience large natural areas throughout north Florida. This project may also help complete the Florida National Scenic Trail, a statewide non-motorized trail that crosses a number of Florida Forever project sites.

Manager

The sites will be managed by various agencies. See the summaries for the projects listed below.

General Description

The St. Joe Timberland project includes the St. Joe Company ownerships in the following projects: Apalachicola River (Sweetwater Creek 7,040 acres, Gadsden Glades 360 acres, and Aspalaga Landing 600 acres sites); Brevard Coastal Scrub Ecosystem (Tico site 1,780 acres); Dickerson Bay/Bald Point (Bald Point site 3,840 acres); Florida's First Magnitude Springs (River Sink 40 acres and St. Marks 700 acres springs sites); Lake Powell 600 acres; St. Joseph Bay Buffer 250 acres; Sand Mountain 1,680 acres; Tates Hell/Carrabelle Tract

St. Joe Timberland FNAI Elements	
<i>Florida Torreya</i>	G1/S1
Florida Black Bear	G5T2/S2
Gopher Tortoise	G3/S3
Swallow-tailed Kite	G5/S2
<i>Apalachicola Rosemary</i>	G1/S1
Big Blue Spring Cave Crayfish	G1/S1
<i>Chapman's Rhododendron</i>	G1/S1
<i>Curtiss' Loosetrife</i>	G1/S1
<i>Gholson's Blazing Star</i>	G1/S1
Southern Elktoe	G1/S1
<i>Telephus Spurge</i>	G1/S1
Woodville Karst Cave Crayfish	G1/S1
93 rare species are associated with the project	

16,000 acres; Wacissa/Aucilla River Sinks 19,840 acres; and Wakulla Springs Protection Zone 2,240 acres. The sites lie in the Panhandle from Bay and Washington Counties to Taylor County, except for the Tico site in Brevard County. They include samples of almost all the natural communities of north and central Florida, from scrub to swamps and springs. See the general descriptions for the projects listed above.

Public Use

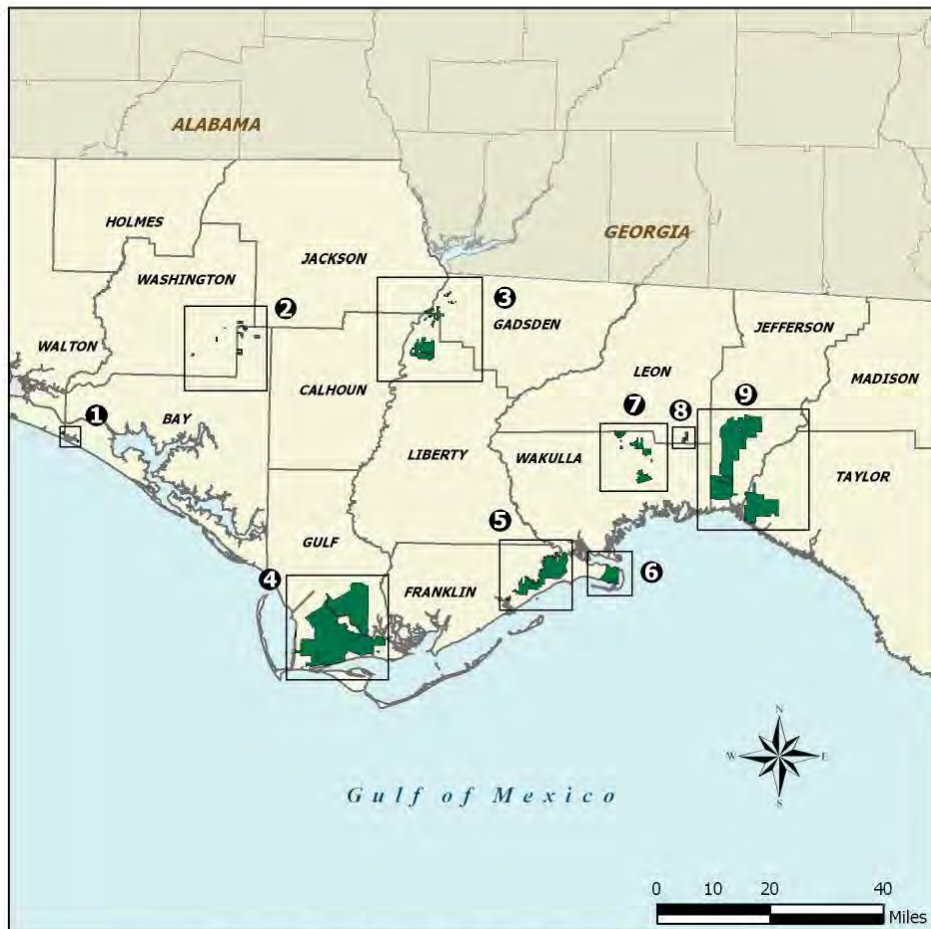
The sites are designated for various public uses. See the summaries for the projects listed above.

Acquisition Planning

On December 9, 1999, the Land Acquisition Management Advisory Council (LAMAC) approved the creation of the St. Joe Timberland project and added it to the Conservation and Recreation Lands (CARL) Priority list. The project was sponsored by the St. Joe Company, Division of State Lands (DSL), and The Nature Conservancy (TNC), and initially consisted of individual tracts owned by St. Joe Company within existing projects. Other sites will be proposed for addition to the project. Approval was given to add an additional 1,318 acres (18 to the Wacissa/Aucilla River Sinks project and approximately 1,300 to the Apalachicola River Project – Lake Wimico site) to the project boundary as essential parcels. The initial project consisted of approximately 56,218 acres. The Northwest Florida Water Management District (NFWFMD) has acquired the majority of the Sand Mountain site.

Placed on List	2000
Project Area (GIS Acres)	163,459
Acres Acquired (GIS)	81,228*
at a Cost of	\$76,054,595
Acres Remaining (GIS)	82,231
with Estimated (Tax Assessed) Value of	\$48,576,562

*NFWFMD has purchased acreage in project boundary.



ST. JOE TIMBERLAND: OVERVIEW

BAY, WALTON, WASHINGTON, GADSDEN, LIBERTY, GULF, FRANKLIN, WAKULLA, LEON, JEFFERSON, AND TAYLOR COUNTIES

Map 1

- A. Lake Powell Site

Map 2

- A. Sand Mountain Site

Map 3

- A. Apalachicola River - Gadsden Glades Site
- B. Apalachicola River - Aspalaga Landing Site
- C. Apalachicola River - Crooked/Short Creek Site
- D. Apalachicola River - Sweetwater Creek Site

Map 4

- A. St. Joseph Bay Buffer Site
- B. St. Vincent Sound-to-Lake Wimico Ecosystem Site
- C. Lake Wimico Site

Map 5

- A. Tates Hell/Carrabelle Site

Map 6

- A. Dickerson Bay/Bald Point Site

Map 7

- A. Wakulla Springs Protection Zone Site
- B. Florida's First Magnitude Springs - River Sink Spring Site

Map 8

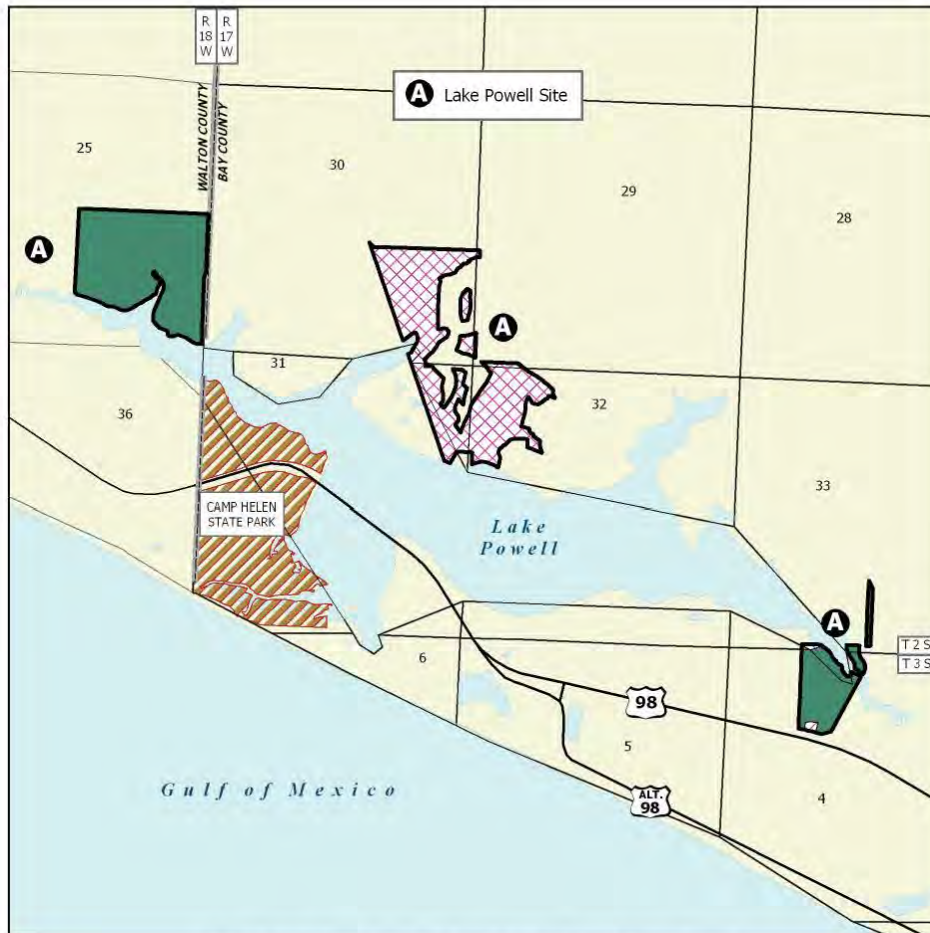
- A. Florida's First Magnitude Springs - St. Marks Springs Site

Map 9

- A. Wacissa/Aucilla River Sinks Site



MAY 2006



ST. JOE TIMBERLAND: MAP 1 OF 9

BAY AND WALTON COUNTIES

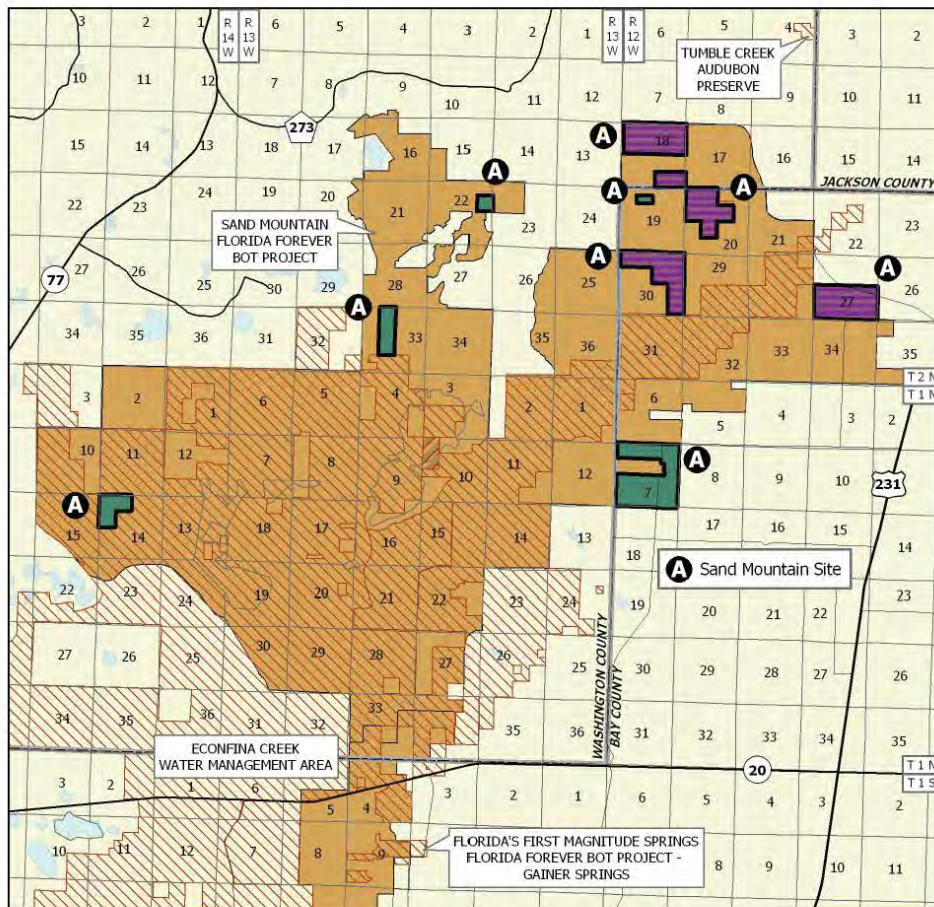
-  Florida Forever BOT Project Boundary
-  Essential Parcel(s) Remaining
-  Change in Ownership*
-  State Owned Lands

* Ownership boundary has changed since project was first placed on State List.

0 0.25 0.5 1
Miles



MAY 2006



ST. JOE TIMBERLAND: MAP 2 OF 9

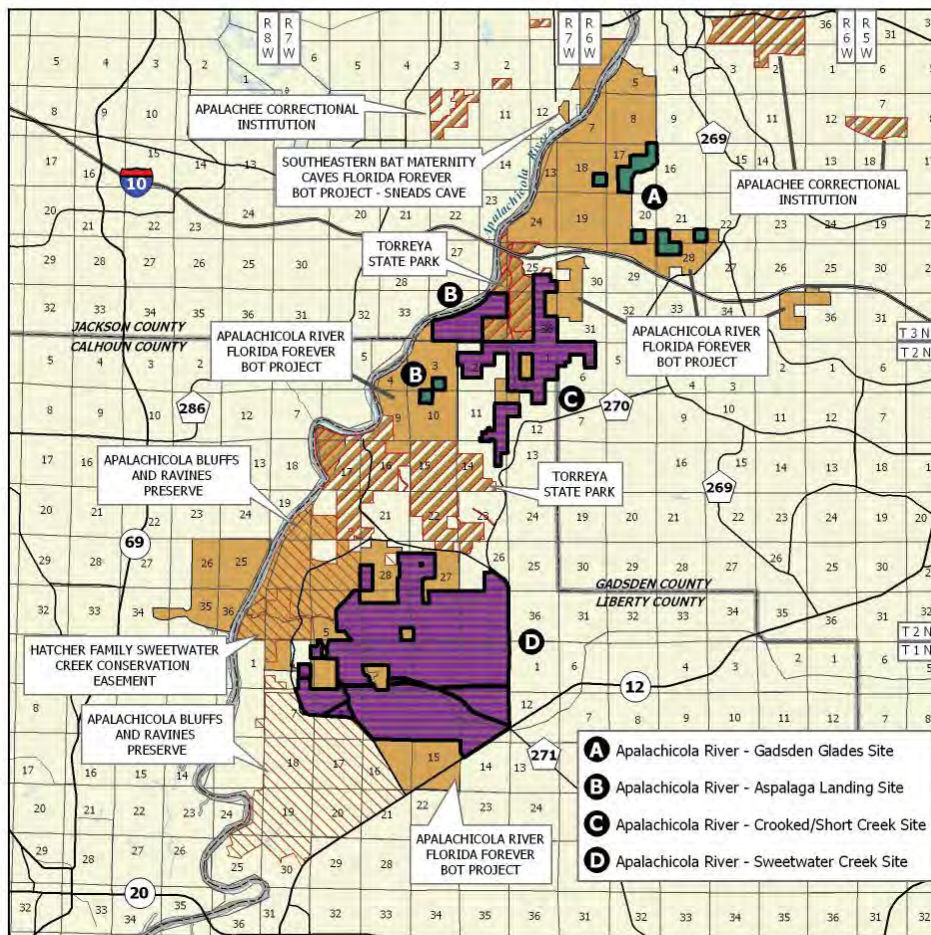
BAY AND WASHINGTON COUNTIES

- Florida Forever BOT Project
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 1 2 4
Miles



JUNE 2007



ST. JOE TIMBERLAND: MAP 3 OF 9

GADSDEN AND LIBERTY COUNTIES

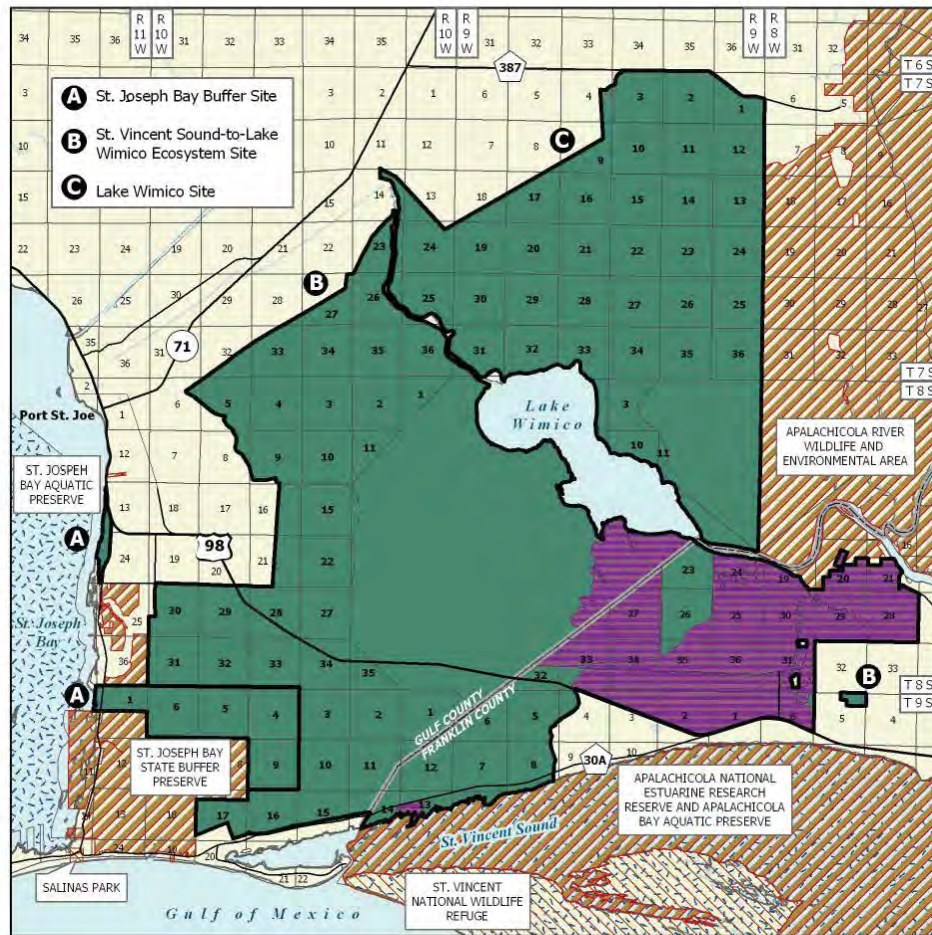
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands



0 1.5 3 6
Miles



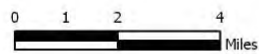
MAY 2006



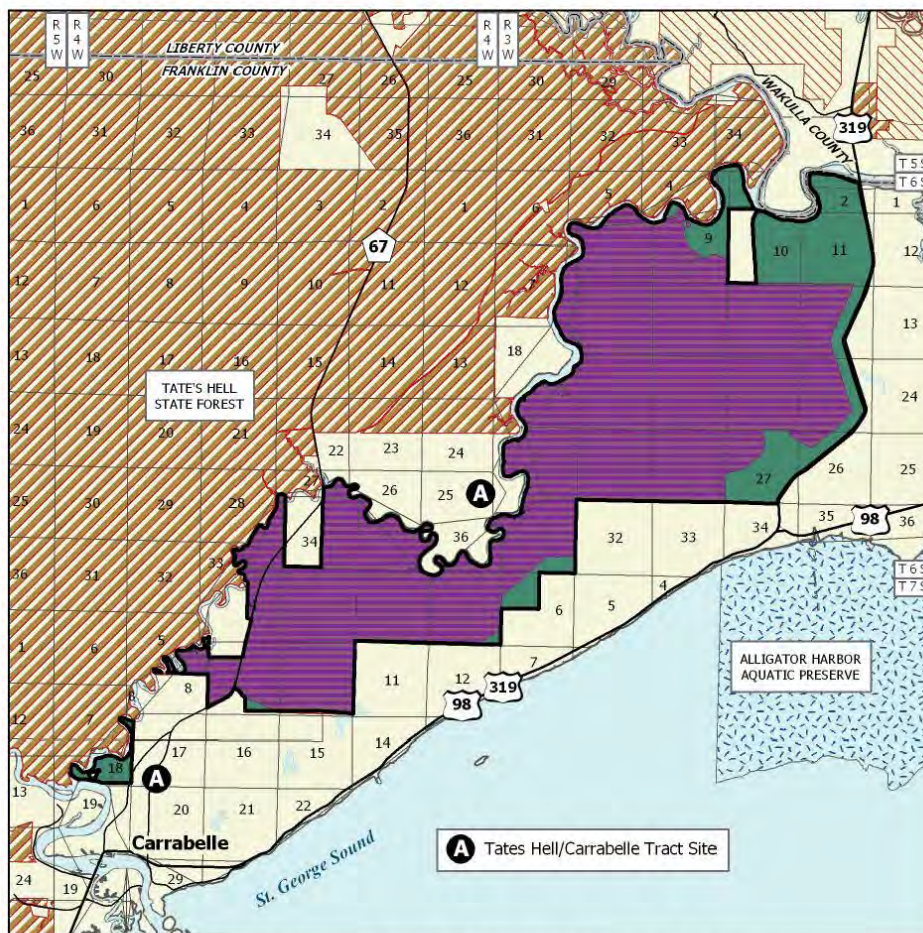
ST. JOE TIMBERLAND: MAP 4 OF 9

GULF AND FRANKLIN COUNTIES

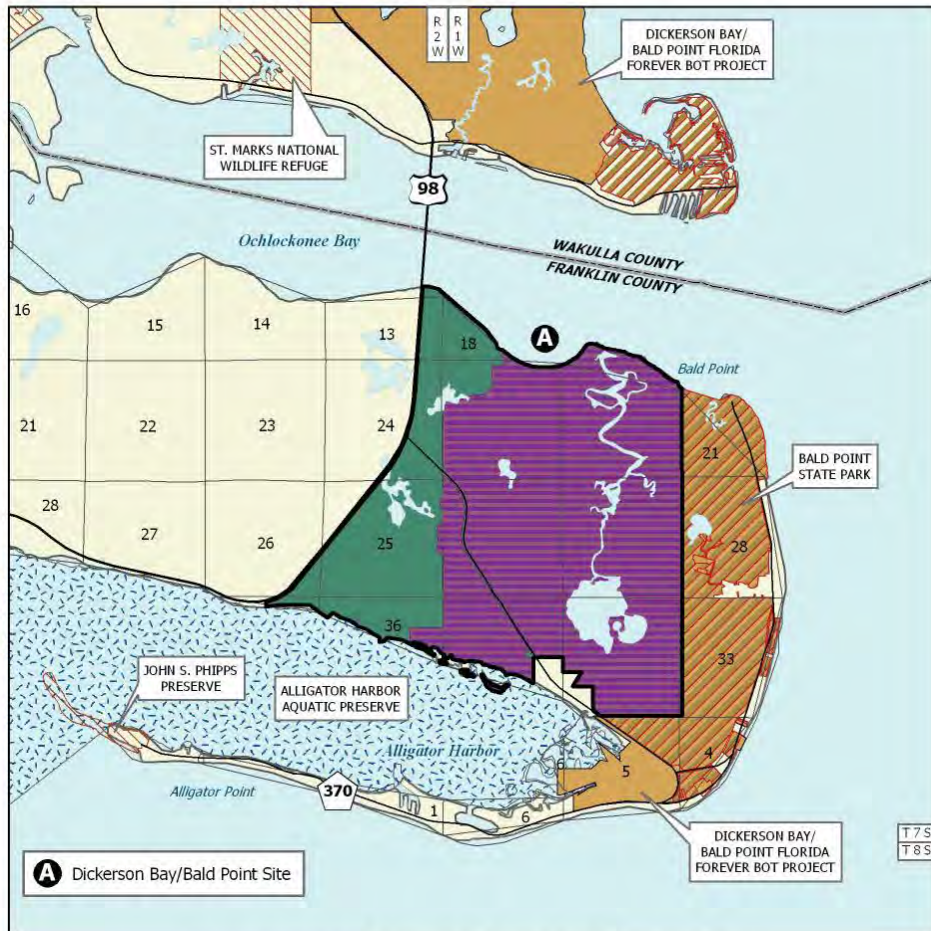
-  Florida Forever BOT Project Boundary
-  Acquired
-  Essential Parcel(s) Remaining
-  State Owned Lands
-  Other Conservation Lands
-  State Aquatic Preserve

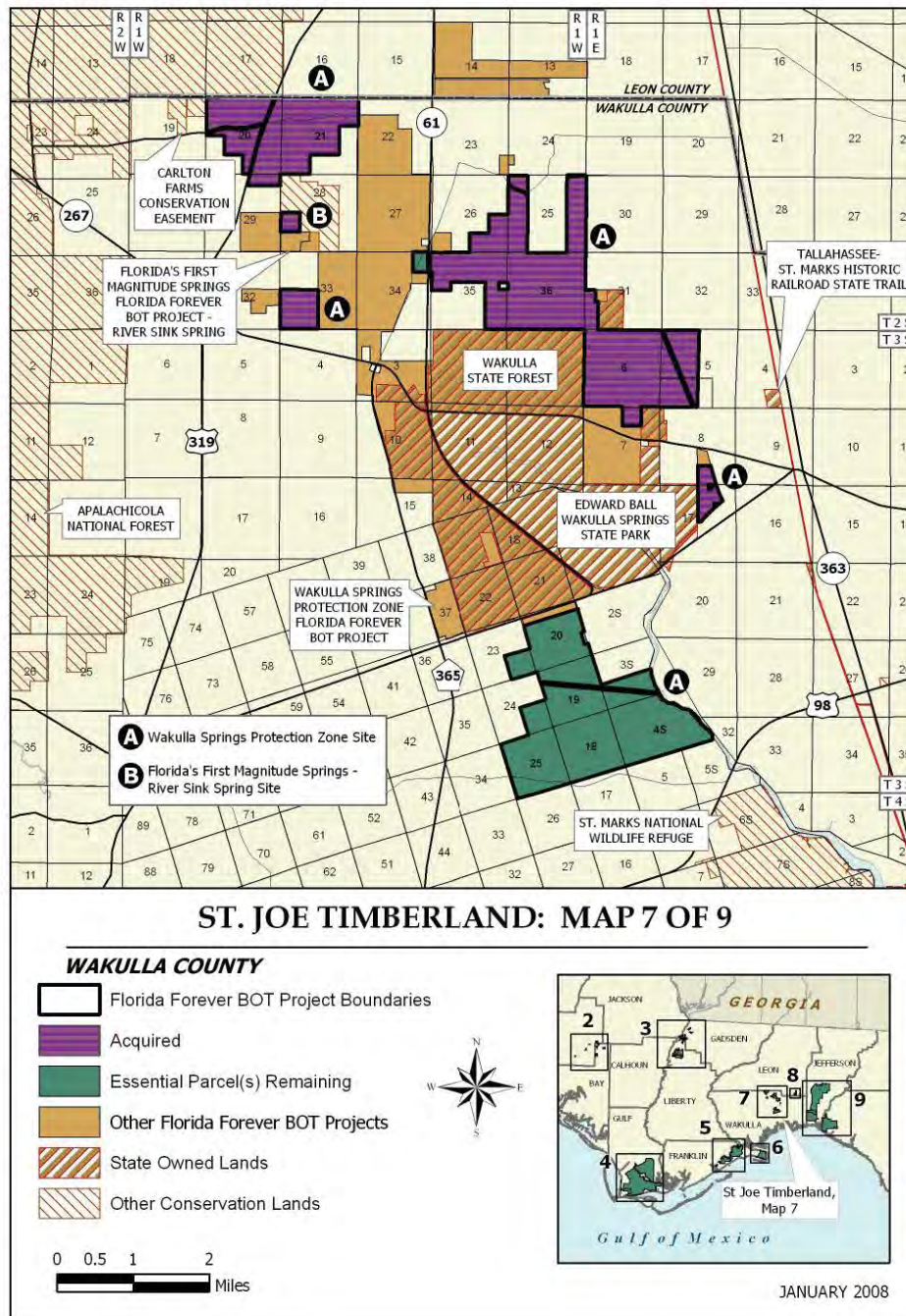


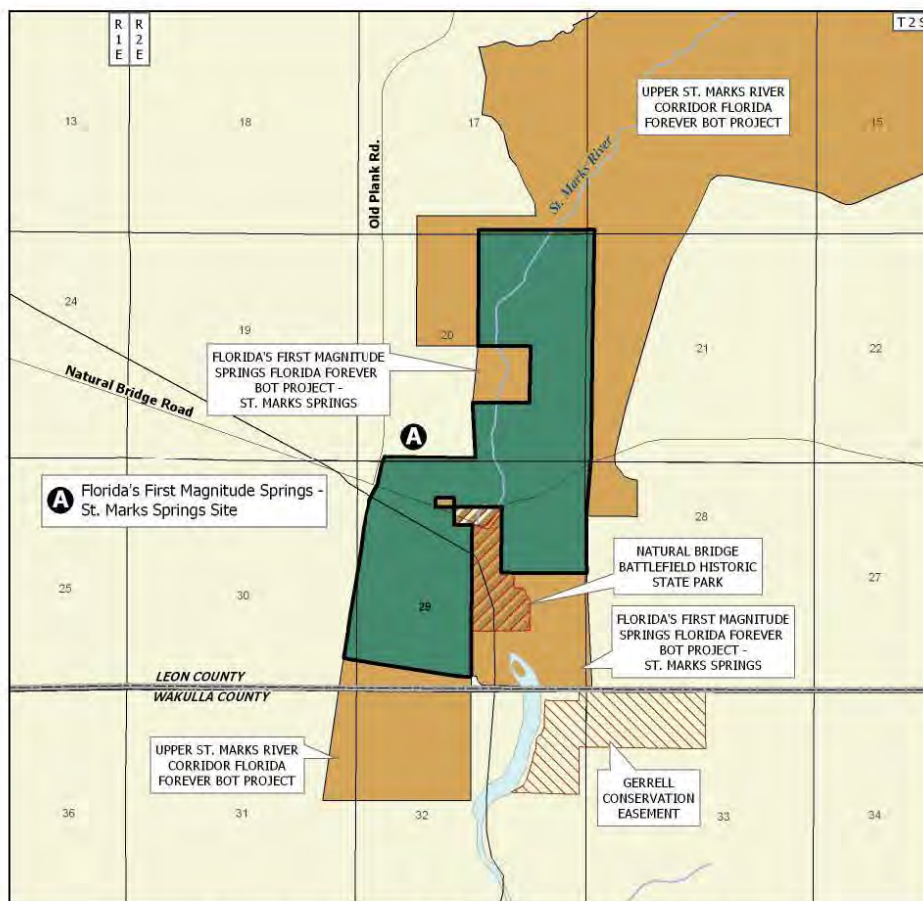
APRIL 2007



MAY 2006







ST. JOE TIMBERLAND: MAP 8 OF 9

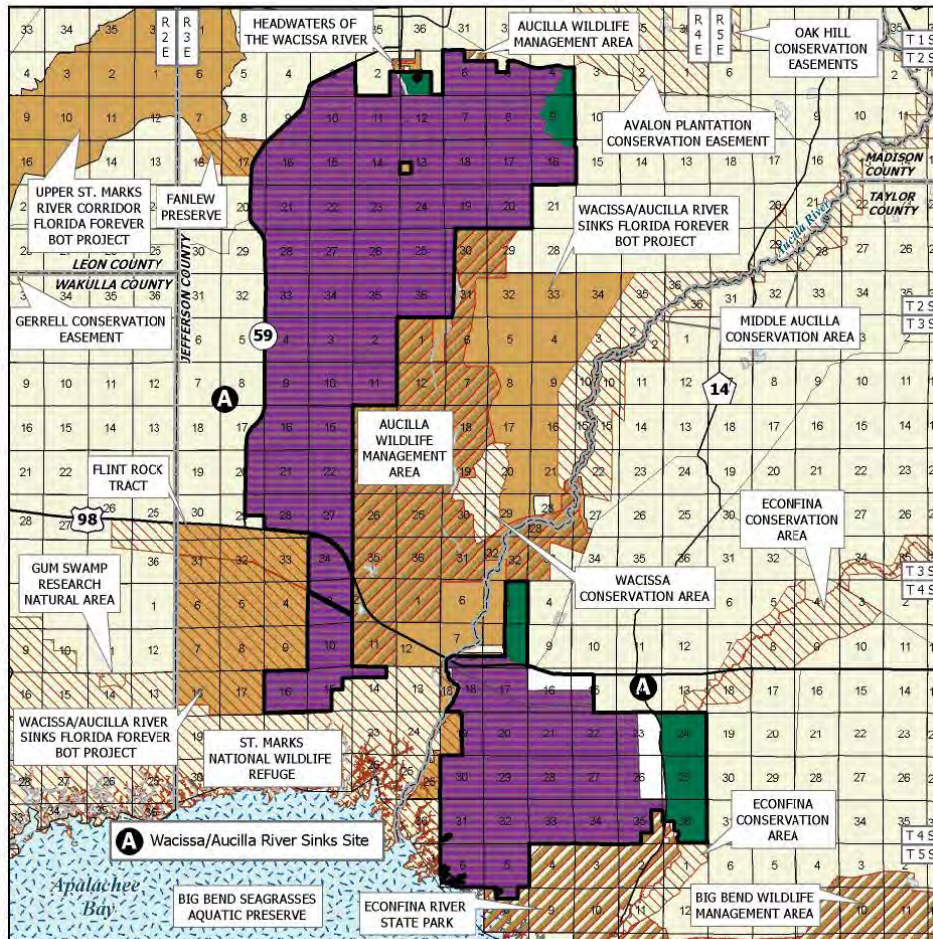
LEON COUNTY

- Florida Forever BOT Project Boundary
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 0.25 0.5 1
Miles



JULY 2009



ST. JOE TIMBERLAND: MAP 9 OF 9

JEFFERSON AND TAYLOR COUNTIES

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve

0 1 2 4
Miles



MAY 2012

On August 22, 2000, the Acquisition and Restoration Council (ARC) approved a fee-simple, 12,360-acre addition, known as Lake Wimico site in Gulf County, to the project boundary. It was sponsored by the Florida Fish and Wildlife Conservation Commission (FWC), consisted of one owner, the St. Joe Company. Also on August 22, 2000 the ARC approved a fee-simple, 1,592-acre addition, known as Snipe Island, to the project boundary. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On July 12, 2001, the ARC approved a fee-simple, 22,260-acre addition to the project boundary. It was sponsored by the FWC, consisted of one owner, the St. Joe Company. About 19,445 acres are located in Jefferson County, the remainder in Taylor County. Also at that meeting, the ARC approved a fee-simple, 2,560-acre addition, to the St. Joseph Bay buffers project boundary. It was sponsored by the FWC, consisted of one owner, the St. Joe Company. The property is located in Gulf County.

On April 25, 2002, the ARC approved a fee-simple, 2,194-acre addition, known as the Tiger Hammock Conservation Area, to the project boundary. It was sponsored by Dr. John Epler and consisted of one owner, the St. Joe Company.

Also, the ARC approved a fee-simple, 1,656-acre addition, known as Crooked Creek (1,365 acres, Gadsden/Liberty Counties) and Short Creek (291 acres, Liberty County), to the project boundary. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On June 6, 2003, the ARC approved a fee-simple, 49,565-acre addition, known as St. Vincent Sound to Lake Wimico, to the project boundary in Gulf and Franklin counties. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On June 4, 2004, the ARC approved a fee-simple, 10,444-acre addition in Jefferson County, known as the Flint Rock tract, to the project boundary. It was sponsored by the TNC and consisted of one owner, the St. Joe Company.

In January 2008 TNC acquired 10,905 acres known as Flint Rock.

On April 6, 2010, the FWC acquired from TNC approximately 2,836 acres of the Flint Rock site for \$5,246,371.

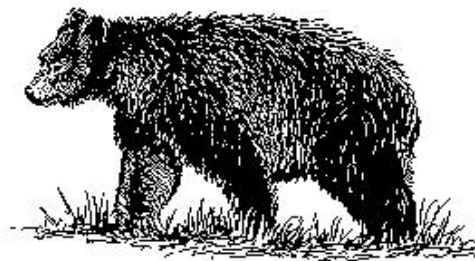
On December 9, 2011 ARC voted to place this project in the Climate Change Lands category of Florida Forever.

On April 20, 2012, the ARC approved transferring the Flint Rock tract to the Wacissa/Aucilla River Sinks Florida Forever project, as this was no longer in St. Joe ownership.

Coordination

TNC is an acquisition intermediary for this project.

Updated April 1, 2015



Dickerson Bay / Bald Point

Franklin and Wakulla Counties

Critical Natural Lands

Purpose for State Acquisition

On the coast of Wakulla and Franklin Counties, the shallow, Gulf of Mexico laps against the westernmost Big Bend salt marshes and the easternmost white sand beaches of the Panhandle. The St. Marks National Wildlife Refuge already protects much of this coast; the Dickerson Bay/Bald Point project will protect more including areas critical to the survival of the endangered Kemp's ridley sea turtle. In so doing, it will also protect the fishery in the area by protecting its foundation - rich mud flats and seagrass beds - and will add land to Mashes Sands County Park where people may enjoy the beauty of this little-disturbed coast.

Manager

The Division of Recreation and Parks (DRP), Florida Department of Environmental Protection will manage that portion of the project in Franklin County; U.S. Fish and Wildlife Service and Wakulla County will separately manage individual parcels in Wakulla County.

General Description

The project, comprising three separate areas, includes uplands around Dickerson, Levy, and Ochlockonee Bays. These bays provide foraging habitat for juvenile Kemp's ridley sea turtles, the world's most endangered sea turtle, and other state or globally rare birds (e.g.,

wood stork, bald eagle) and sea turtles (e.g., loggerhead). The uplands surrounding the three bays are an intricate mosaic of lakes, depression marshes, mesic flatwoods (high quality to disturbed) that support populations of such rare animals as Sherman's fox squirrel and gopher tortoise, scrubby flatwoods, and scrub connected with the marine communities by numerous tidal creeks, salt flats, and salt marshes. The Bald Point site includes beach dunes used by many species of shore birds. The condition of these uplands might be expected to play a larger role in maintaining the quality of the marine communities than would be the case with a straight shoreline. The natural upland communities adjoin similar communities in St. Marks National Wildlife Refuge to the north and west. Twelve archaeological sites are known from Bald Point. The Bald Point site is threatened by development.

Public Use

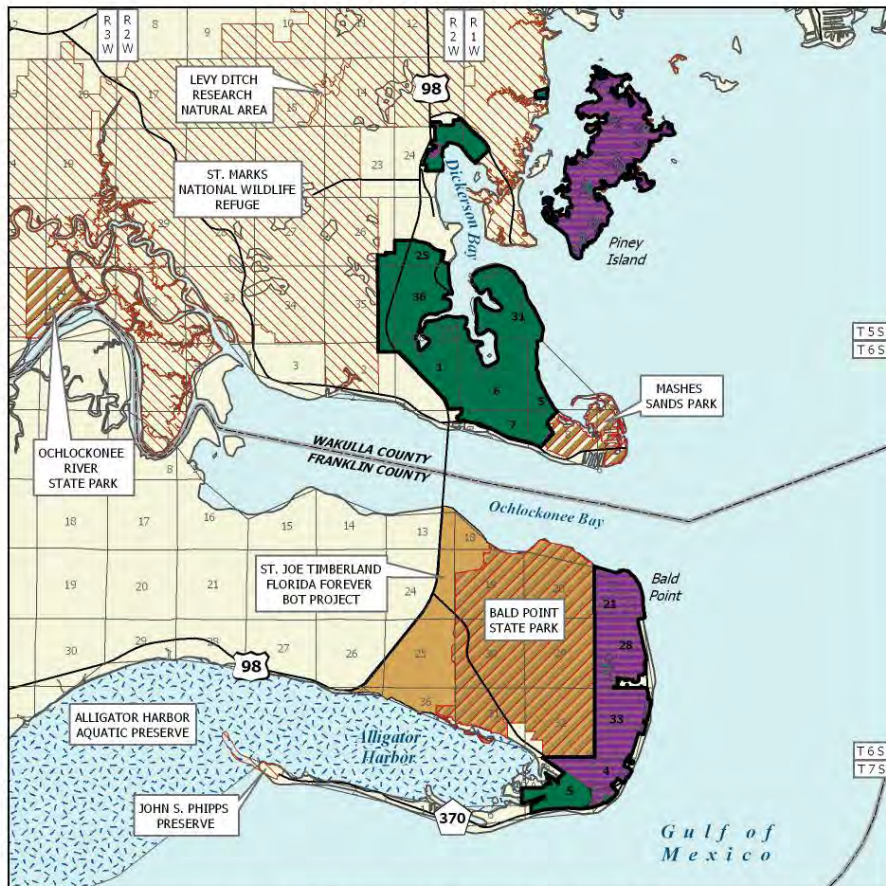
The southern part of this project (i.e., Bald Point and southern Dickerson Bay) is designated for use as a state park that will augment the recreational opportunities of the adjacent Mashes Sands County Park with areas for picnicking, hiking, camping, and canoeing. The beaches of Bald Point are suitable for swimming and other activities. The northern part of this project will be incorporated into the St. Marks Wildlife Refuge. This portion is suitable for boating.

Acquisition Planning

Dickerson Bay: Larger ownerships should be negotiated before the smaller ones. The essential parcels are McMillan, Brunstad, Nichols, JDN Enterprises, Meara, Cobleigh, Panacea Coastal Properties and Metcalf. Piney Island, also an essential parcel, was donated to the USFWS in 1996.

Dickerson Bay/Bald Point FNAI Elements	
Kemp's Ridley	G1/S1
Florida Black Bear	G512/S2
Green Sea Turtle	G3/S2S3
Gopher Tortoise	G3/S3
Loggerhead Sea Turtle	G3/S3
Swallow-tailed Kite	G5/S2
Lobeless Spiny Burrowing Beetle	G1G2/S1S2
<i>Godfrey's Blazing Star</i>	G2/S2
Merlin	G5/S2
Black-crowned Night-heron	G5/S3
Southeastern Fox Squirrel	G5T5/S3
11 rare species are associated with the project	

Placed on List	1996
Project Area (GIS Acres)	5,554
Acres Acquired (GIS)	2,439
at a Cost of	\$9,424,365
Acres Remaining (GIS)	3,115
with Estimated (Tax Assessed) Value of	\$4,561,186



DICKERSON BAY/BALD POINT

WAKULLA AND FRANKLIN COUNTIES

-  Florida Forever BOT Project Boundary
-  Acquired for Conservation (Fee Simple)
-  Essential Parcel(s) Remaining
-  Other Florida Forever BOT Projects
-  State Owned Lands
-  Other Conservation Lands
-  State Aquatic Preserves



0 1 2 4
Miles



OCTOBER 2009

Bald Point: All parcels are essential. The LGR Investment Fund, LTD. has been acquired.

On October 15, 1998, the LAMAC redesignated the Jer Be Lou Development Co. parcel as essential. The parcel has been acquired. Initial acquisition started in 1999 with funds from the CARL/P2000 acquisition program along Apalachee Bay.

On August 30, 1999 the Board of Trustees purchased 1,349 acres in Franklin County from the Trust for Public Land which later became the Bald Point State Park. In 2003 the park was expanded when 3,485 acres were purchased from the St. Joe Company. As of January 2006, the park contained 4,859 acres, and is jointly administered with the Ochlockonee River State Park.

On September 6, 2011, DRP purchased to manage .77 acres (Kennedy-\$67,500).

On December 9, 2011, ARC placed this project in the Critical Natural Lands category.

Coordination

The USFWS is an acquisition partner, and coordination between the state and federal government should be maintained.

On August 27, 1998, a portion of the Bald Point project was selected to receive Florida Communities Trust grant money.

Management Policy Statement

The primary objectives of management of the Dickerson Bay/Bald Point project are to maintain and restore the natural communities around Dickerson and Levy Bays and to give the public an area for hiking, fishing, camping, and other recreation compatible with protection of the natural resources. Protecting the natural communities of the area is critical to the survival of the endangered Kemp's ridley sea turtle and will also help protect habitat for wading birds and shore birds. It will also help protect a recreational and commercial fishery that depends on the marine life of the bays. The project should be managed under the single-use concept: management activities should be directed toward the preservation of the salt marshes, flatwoods, and other communities around the bays. Consumptive uses such as hunting or logging should not be permitted. Managers should control public access to the project; limit public motor vehicles to one or a few main roads; thoroughly inventory the resources; burn the fire-dependent flatwoods in a pattern mimicking natural

lightning-season fires, using natural firebreaks or existing roads for control; and monitor management activities to ensure that they are actually maintaining or improving the quality of the natural communities. Managers should limit the number and size of recreational facilities, such as hiking trails, ensure that they avoid the most sensitive resources, and site them in already disturbed areas when possible.

The project includes nearly all of the undeveloped, privately-owned land along Dickerson and Levy Bays and adjoins the Mashles Sands county park on its southeast border. It therefore has the configuration and location to achieve its primary objectives.

Management Prospectus

Qualifications for state designation The large south parcel of the Dickerson Bay portion of the project has the capacity to provide an effective buffer for the protection of the marine communities of Levy and Dickerson Bays. The Kemp's ridley sea turtle frequents the waters of these bays. The parcel is also capable of providing resource based recreational opportunities, particularly in support of the adjacent county park at Mashles Island. For these reasons, the property would be suitable as a state park within the state park system.

Manager In Franklin County, the Division of Recreation and Parks. In Wakulla County, the U.S. Fish and Wildlife Service and Wakulla County.

Conditions affecting intensity of management The property will be a high-need management area. Public recreational use and development compatible with resource management will be an integral aspect of management.

Timetable for implementing management and provisions for security and protection of infrastructure Upon acquisition and assignment to the Division, public access will be provided for low intensity, non-facility related outdoor recreation activities. Also, management will concentrate on site security, fire management and developing a resource inventory and public use plan. Vehicle access by the public will be confined to designated points and routes. Protecting the adjacent marine environment will be a primary focus for the property. Over the long term, however, a wide range of resource-based recreation and environmental education facilities may be promoted. The nature, extent and location of infrastructure will be defined by the management plan for the property. Restoring and maintaining natural communities will be incorporated into long range management efforts and disturbed areas will be restored to conditions that would be expected to occur in natural systems, to the extent practical.

Revenue-generating potential No significant revenue is expected to be generated from this property initially.

After acquisition, it will probably be several years before any significant public facilities might be developed. The amount of any future revenue will depend on the nature and extent of public use in the management plan for the property. The property has potential for generating local economic benefits. The pine plantation that covers a large portion of the Bald Point project will be managed with the assistance of the Florida Forest Service (aka Division of Forestry/DOF) has considerable value and can be expected to provide significant revenue if acquired with the land. No other significant revenues would be expected over the shortterm after acquisition. The amount of future revenues from other than timber sales will depend on the nature and extent of public use and facilities developed.

Cooperators in management activities Due to the potential for enhancement of the adjacent county park by this project area, coordination of management efforts may be desirable. On the Bald Point site, the FFS, will be consulted on forest management and timber issues related to planning and implementation of a forest resource management plan. Other federal, state, and local government agencies will be consulted, as appropriate, to further resource management, recreational and educational opportunities, and the development of the project lands for state park purposes.

Updated February 26, 2016

Management Cost Summary/USFWS
Management Cost Summary/DRP

Category	Startup	Recurring	Category	Startup	Recurring
Source of Funds	USFWS	USFWS	Source of Funds	CARL	CARL
Salary	\$7,800	N/A	OPS	\$7,092	\$7,092
OPS	\$0	N/A	Expense	\$13,269	\$13,269
Expense	\$500	N/A	OCO	\$80,000	\$1,000
OCO	\$0	N/A	FCO	\$13,269	\$0
FCO	\$0	N/A	TOTAL	\$262,132	\$72,361
TOTAL	\$8,300	N/A			

Exhibit I

Department of State Report on Archeological Sites and Historical Sites



This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333 for project review information.

July 20, 2017

Alan L. Davis
Land Planning Coordinator
Florida DA&CS
3125 Conner Boulevard
Tallahassee, FL 32399-1650
E-mail: Alan.Davis@freshfromflorida.com



Re: Tate's Hell State Forest

In response to your inquiry of July 17, 2017, the Florida Master Site File lists 37 archeological sites, two cemeteries, one bridge and one resource group found at the designated area for Tate's Hell State Forest, Franklyn County, Florida.

When interpreting the results of our search, please consider the following information:

- 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 850-245-6333.

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

Sincerely,

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



AR=37
 SS=0
 CH=2
 RG=1
 BR=1
 Total=41

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
FR0007	AR	TOPSAIL BLUFF	CARRABELLE			
FR00751	AR	PITCHER PLANT	EAST POINT			
FR00753	AR	WHISKEY GEORGE CREEK	EAST POINT			
FR00785	AR	DOT'S LANDING	CARRABELLE			
FR00827	AR	USFS 90-3 APA/BUZZING WIRES				
FR00862	AR	HIGH BLUFF HOMESTEAD	EAST POINT			
FR00865	AR	OXBOW BLUFF	CARRABELLE			
FR00866	AR	OYSTER CAMP	CARRABELLE			
FR00869	AR	TURTLE KILL				
FR00870	AR	JOHN ALLEN RIDGE	EAST POINT			
FR00871	AR	POWERLINE RIDGE				
FR00872	AR	CINDER PALACE	NA			
FR00873	CM	THOMPSON CEMETERY	Carrabelle	Established 1813		
FR00874	AR	APIARY POINT	EAST POINT			
FR00875	AR	LAURA'S CATTLE DIP	Eastpoint			
FR00879	AR	HARBESON CITY BRIDGE	HARBESON CITY			
FR00880	AR	AIRSTRIIP	CARRABELLE			
FR00885	AR	PILE OF CUPS	CARRABELLE			
FR00886	AR	NORTH BEVERLY	BEVERLY			
FR00887	AR	BURNT BRIDGE DIPPING VAT	CARRABELLE			
FR00900	RG	CAMP GORDON JOHNSTON		Archaeological District	Eligible	
FR00920	AR	Gator Creek Bridge	Carrabelle			
FR00921	AR	Sparky's Grave	Eastpoint	Human Remains May Be Present		
FR00923	AR	Buck Sidine	Carrabelle			
FR00924	AR	Papa Place	Carrabelle			
FR00925	AR	Parker Place	Carrabelle			
FR00926	AR	Deep Creek Still	Carrabelle			
FR00927	AR	Lewis Bluff Bridge Remains	Carrabelle			
FR00929	AR	Nero Creek Homestead	Carrabelle			
FR00930	AR	Old School	Carrabelle			
FR00931	AR	Gully Branch	Carrabelle			
FR00932	AR	Rock Landing	Carrabelle			
FR00933	AR	Squirrel Road Dipping Vat	Carrabelle			
FR00934	AR	Dew Drop Inn	Carrabelle			
FR00935	AR	Morgan Still	Carrabelle			
FR01283	BR	River Road / Trout Creek	River Road / Trout Creek	1959 - FDOT #494096		
L100433	AR	HIGH POINT HOMESTEAD	TELOGIA			
L100434	AR	LOBLOLLY LANDING	TELOGIA			
L100435	AR	COACHMAN LANDING	TELOGIA			
L100436	AR	#97-02 APA	UNSP		Insufficient Info	
L100456	CM	HENRY J. BROWN GRAVE SITE	NONE	Established 1902, Graves = 1	Insufficient Info	

Exhibit J

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 March 2013)

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

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, *'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 State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, 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 project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:
<http://www.flheritage.com/preservation/compliance/guidelines.cfm>

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

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. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:

http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf.

* * *

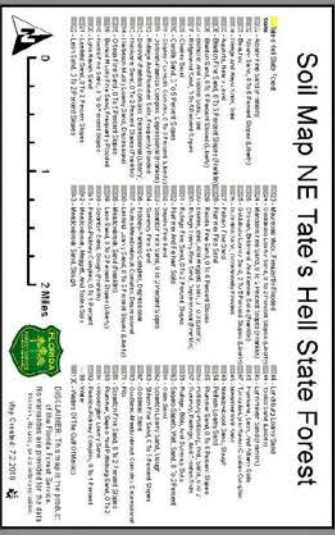
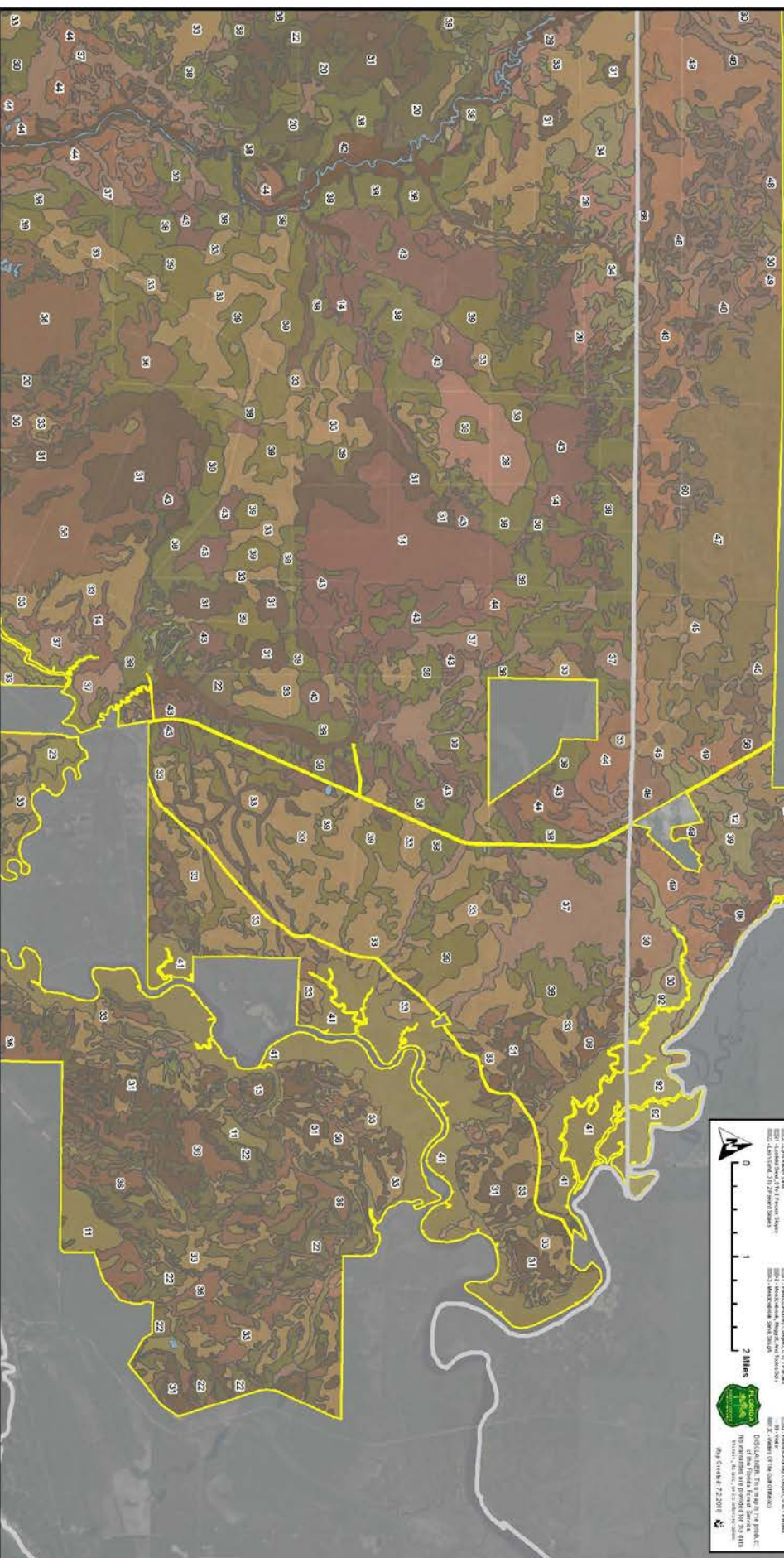
Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

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

Phone: (850) 245-6425
Toll Free: (800) 847-7278
Fax: (850) 245-6435

Exhibit K

Soil Maps and Descriptions



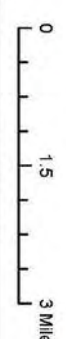
Tate's Hell State Forest

- [illegible]



Soil Map SW Tate's Hell State Forest





Soils

- 21 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 22 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 23 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 24 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 25 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 26 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 27 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 28 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 29 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 30 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 31 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 32 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 33 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 34 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 35 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 36 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 37 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 38 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 39 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 40 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 41 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 42 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 43 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 44 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 45 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 46 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 47 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 48 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 49 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 50 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 51 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 52 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 53 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 54 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 55 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 56 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 57 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 58 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 59 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 60 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 61 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 62 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 63 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 64 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 65 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 66 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 67 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 68 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 69 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 70 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 71 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 72 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 73 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 74 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 75 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 76 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 77 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 78 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 79 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 80 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 81 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 82 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 83 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 84 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 85 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 86 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 87 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 88 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 89 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 90 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 91 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 92 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 93 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 94 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 95 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 96 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 97 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 98 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 99 - Albany Sand, 0 to 2 Percent Slopes (Liberty)
- 100 - Albany Sand, 0 to 2 Percent Slopes (Liberty)

Legend

- 1 - Water
- 2 - Wetlands
- 3 - Forest
- 4 - Pasture
- 5 - Agriculture
- 6 - Developed
- 7 - Barren
- 8 - Shrubland
- 9 - Grassland
- 10 - Wetland
- 11 - Forest
- 12 - Pasture
- 13 - Agriculture
- 14 - Developed
- 15 - Barren
- 16 - Shrubland
- 17 - Grassland
- 18 - Wetland
- 19 - Forest
- 20 - Pasture
- 21 - Agriculture
- 22 - Developed
- 23 - Barren
- 24 - Shrubland
- 25 - Grassland
- 26 - Wetland
- 27 - Forest
- 28 - Pasture
- 29 - Agriculture
- 30 - Developed
- 31 - Barren
- 32 - Shrubland
- 33 - Grassland
- 34 - Wetland
- 35 - Forest
- 36 - Pasture
- 37 - Agriculture
- 38 - Developed
- 39 - Barren
- 40 - Shrubland
- 41 - Grassland
- 42 - Wetland
- 43 - Forest
- 44 - Pasture
- 45 - Agriculture
- 46 - Developed
- 47 - Barren
- 48 - Shrubland
- 49 - Grassland
- 50 - Wetland
- 51 - Forest
- 52 - Pasture
- 53 - Agriculture
- 54 - Developed
- 55 - Barren
- 56 - Shrubland
- 57 - Grassland
- 58 - Wetland
- 59 - Forest
- 60 - Pasture
- 61 - Agriculture
- 62 - Developed
- 63 - Barren
- 64 - Shrubland
- 65 - Grassland
- 66 - Wetland
- 67 - Forest
- 68 - Pasture
- 69 - Agriculture
- 70 - Developed
- 71 - Barren
- 72 - Shrubland
- 73 - Grassland
- 74 - Wetland
- 75 - Forest
- 76 - Pasture
- 77 - Agriculture
- 78 - Developed
- 79 - Barren
- 80 - Shrubland
- 81 - Grassland
- 82 - Wetland
- 83 - Forest
- 84 - Pasture
- 85 - Agriculture
- 86 - Developed
- 87 - Barren
- 88 - Shrubland
- 89 - Grassland
- 90 - Wetland
- 91 - Forest
- 92 - Pasture
- 93 - Agriculture
- 94 - Developed
- 95 - Barren
- 96 - Shrubland
- 97 - Grassland
- 98 - Wetland
- 99 - Forest
- 100 - Pasture



Disclaimer: This map is for general information only. It is not intended to be used for legal purposes. The Alabama Department of Conservation and Forestry is not responsible for any errors or omissions on this map.

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)

Franklin County, Florida

Map Unit: 2—Albany fine sand

Component: Albany (86%)

The Albany component makes up 86 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. 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: Stilson (2%)

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

Component: Sapelo (2%)

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

Component: Ridgewood (2%)

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

Component: Plummer (2%)

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

Component: Pelham (2%)

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

Component: Blanton (2%)

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

Component: Leefield (2%)

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

Map Unit: 4—Dirego and Bayvi soils, tidal**Component:** Dirego (50%)

The Dirego component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes 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 very 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 January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 43 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 40 within 30 inches of the soil surface.

Component: Bayvi (40%)

The Bayvi component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes 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 very 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 January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 14 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 60 within 30 inches of the soil surface.

Component: Maurepas (10%)

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

Map Unit: 5—Aquents, nearly level

Component: Aquents (50%)

The Aquents component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, December. This soil meets hydric criteria.

Component: Aquents (50%)

The Aqueuts component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, December. This soil does not meet hydric criteria.

Map Unit: 6—Blanton fine sand, 0 to 5 percent slopes

Component: Blanton (84%)

The Blanton component makes up 84 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 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 January, February, March, December. 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: Ortega (4%)

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

Component: Mandarin (3%)

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

Component: Ridgewood (3%)

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

Component: Stilson (3%)

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

Component: Albany (3%)

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

Map Unit: 7—Bohicket and Tisonia soils, tidal**Component: Bohicket (45%)**

The Bohicket component makes up 45 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 30 within 30 inches of the soil surface.

Component: Tisonia (40%)

The Tisonia component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of organic material over clayey 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 low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 48 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 4 within 30 inches of the soil surface.

Component: Dirego (5%)

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

Component: Maurepas (5%)

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

Component: Chowan (3%)

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

Component: Brickyard (2%)

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

Map Unit: 8—Ridgewood sand, 0 to 5 percent slopes**Component:** Ridgewood (90%)

The Ridgewood component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy 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 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: Albany (3%)

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

Component: Hurricane (3%)

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

Component: Scranton (2%)

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

Component: Ortega (2%)

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

Map Unit: 9—Chaires sand**Component:** Chaires, non-hydric (70%)

The Chaires, non-hydric component makes up 70 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Chaires, hydric (15%)

The Chaires, hydric component makes up 15 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 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (4%)

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

Component: Meadowbrook (3%)

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

Component: Scranton (3%)

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

Component: Tooles (3%)

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

Component: Rutledge (2%)

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

Map Unit: 10—Corolla sand, 0 to 5 percent slopes

Component: Corolla (88%)

The Corolla component makes up 88 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on dunes 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 very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 13 within 30 inches of the soil surface.

Component: Beaches (3%)

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

Component: Newhan (3%)

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

Component: Mandarin (2%)

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

Component: Duckston (2%)

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

Component: Hurricane (2%)

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

Map Unit: 11—Dorovan-Pamlico complex, depressional

Component: Dorovan, depressional (55%)

The Dorovan, depressional component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (30%)

The Pamlico, depressional component makes up 30 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (5%)

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

Component: Pickney (5%)

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

Component: Scranton (3%)

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

Component: Lynn Haven (2%)

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

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

Component: Hurricane (90%)

The Hurricane component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY004FL North Florida Flatwoods ecological site. 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: Foxworth (5%)

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

Component: Chipley (5%)

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

Map Unit: 14—Harbeson mucky loamy sand, depressional**Component:** Harbeson, depressional (88%)

The Harbeson, depressional component makes up 88 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 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 January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (3%)

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

Component: Pamlico (3%)

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

Component: Bonsai (2%)

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

Component: Meadowbrook (2%)

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

Component: Rutlege (2%)

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

Map Unit: 15—Ortega fine sand, 0 to 5 percent slopes

Component: Ortega (78%)

The Ortega component makes up 78 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of 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 January, February, March, April, May, June, July, August, September, December. 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: Leon (4%)

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

Component: Hurricane (4%)

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

Component: Kershaw (4%)

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

Component: Albany (4%)

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

Component: Lynn Haven, depressional (3%)

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

Component: Ridgewood (3%)

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

Map Unit: 16—Bonsai mucky fine sand, frequently flooded**Component:** Bonsai (89%)

The Bonsai component makes up 89 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 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 high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (11%)

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

Map Unit: 18—Kershaw sand, 5 to 12 percent slopes**Component:** Kershaw (88%)

The Kershaw component makes up 88 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is 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 7s. 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: Kureb (5%)

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

Component: Ortega (3%)

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

Component: Ridgewood (2%)

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

Component: Resota (2%)

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

Map Unit: 19—Kureb fine sand, 3 to 8 percent slopes

Component: Kureb (90%)

The Kureb component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian deposits or sandy fluvial or 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 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ortega (2%)

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

Component: Resota (2%)

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

Component: Hurricane (2%)

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

Component: Kershaw (2%)

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

Component: Mandarin (2%)

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

Map Unit: 20—Lynn Haven sand

Component: Lynn Haven, hydric (59%)

The Lynn Haven, hydric component makes up 59 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven, non-hydric (30%)

The Lynn Haven, non-hydric component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, June, July, August, September, October, November, December. 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: Leon (6%)

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

Component: Rutlege (5%)

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

Map Unit: 21—Leefield sand, 0 to 2 percent slopes

Component: Leefield (85%)

The Leefield 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 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 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 January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. 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: Alapaha (5%)

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

Component: Stilson (4%)

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

Component: Pelham, non-hydric (2%)

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

Component: Albany (2%)

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

Component: Foxworth (1%)

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

Component: Chipley (1%)

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

Map Unit: 22—Leon sand, 0 to 2 percent slopes**Component:** Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

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

Component: Pottsburg (4%)

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

Component: Hurricane (4%)

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

Component: Mandarin (3%)

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

Component: Rutlege (2%)

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

Component: Pickney (2%)

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

Map Unit: 23—Maurepas muck, frequently flooded

Component: Maurepas (90%)

The Maurepas component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of woody 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 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (5%)

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

Component: Dirego (3%)

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

Component: Dorovan (2%)

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

Map Unit: 24—Mandarin fine sand, 0 to 2 percent slopes**Component: Mandarin (92%)**

The Mandarin component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 30 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 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: Ortega (5%)

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

Component: Chaires (3%)

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

Map Unit: 26—Duckston sand, occasionally flooded**Component: Duckston (89%)**

The Duckston component makes up 89 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is 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 occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The soil has a moderately saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 14 within 30 inches of the soil surface.

Component: Corolla (3%)

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

Component: Bayvi (3%)

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

Component: Rutlege (3%)

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

Component: Scranton (2%)

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

Map Unit: 27—Pelham fine sand**Component:** Pelham, non-hydric (50%)

The Pelham, non-hydric component makes up 50 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 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 January, February, March, April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, hydric (35%)

The Pelham, hydric component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 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: Albany (3%)

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

Component: Leefield (3%)

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

Component: Scranton (3%)

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

Component: Sapelo (3%)

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

Component: Surrency (3%)

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

Map Unit: 28—Plummer fine sand**Component:** Plummer, hydric (65%)

The Plummer, hydric component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is 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 January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Plummer, non-hydric (20%)

The Plummer, non-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 12 inches during January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham (4%)

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

Component: Leon (3%)

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

Component: Sapelo (3%)

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

Component: Scranton (3%)

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

Component: Surrency (2%)

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

Map Unit: 29—Resota fine sand, 0 to 5 percent slopes**Component: Resota (90%)**

The Resota component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy 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 51 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ortega (4%)

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

Component: Mandarin (3%)

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

Component: Kureb (3%)

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

Map Unit: 30—Rutlege loamy fine sand, depressional**Component:** Rutlege, depressional (89%)

The Rutlege, depressional component makes up 89 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 and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (5%)

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

Component: Lynn Haven (3%)

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

Component: Scranton (3%)

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

Map Unit: 31—Rutlege fine sand, 0 to 2 percent slopes**Component:** Rutlege (92%)

The Rutlege component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (2%)

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

Component: Pickney (2%)

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

Component: Scranton (2%)

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

Component: Pamlico (2%)

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

Map Unit: 32—Sapelo fine sand

Component: Sapelo, non-hydric (75%)

The Sapelo, non-hydric component makes up 75 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, hydric (10%)

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

Component: Plummer (5%)

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

Component: Pelham (2%)

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

Component: Leon (2%)

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

Component: Albany (2%)

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

Component: Leefield (2%)

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

Component: Scranton (2%)

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

Map Unit: 33—Scranton fine sand, 0 to 2 percent slopes

Component: Scranton (84%)

The Scranton component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton, slough (10%)

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

Component: Leon (3%)

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

Component: Rutlege (3%)

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

Map Unit: 34—Surrency fine sand

Component: Surrency (88%)

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

Component: Rutlege (5%)

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

Component: Pelham (4%)

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

Component: Plummer (3%)

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

Map Unit: 36—Pickney-Pamlico complex, depressional**Component:** Pickney, depressional (45%)

The Pickney, depressional component makes up 45 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 and/or fluvio-marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (40%)

The Pamlico, depressional 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Scranton (3%)

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

Component: Scranton, slough (3%)

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

Component: Rutlege (3%)

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

Component: Maurepas (2%)

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

Component: Dorovan (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 38—Meadowbrook sand

Component: Meadowbrook, non-hydric (67%)

The Meadowbrook, non-hydric component makes up 67 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces or 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, hydric (15%)

The Meadowbrook, hydric component makes up 15 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, August, September, October, November, December. 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: Tooles (5%)

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

Component: Scranton (5%)

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

Component: Chaires (5%)

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

Component: Leon (3%)

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

Map Unit: 39—Scranton sand, slough

Component: Scranton, slough (88%)

The Scranton, slough component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on sloughs 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 low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton (4%)

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

Component: Rutlege (2%)

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

Component: Meadowbrook (2%)

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

Component: Plummer (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded

Component: Pamlico (50%)

The Pamlico component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on marine terraces on coastal plains, flood plains 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (35%)

The Pickney component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on 1 flood plains, 2 marine terraces, 3 coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 7 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: Dorovan (8%)

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

Component: Rutlege (7%)

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

Map Unit: 42—Meadowbrook, Meggett, and Tooles soils, frequently flooded

Component: Meadowbrook (35%)

The Meadowbrook component makes up 35 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 0 inches during January, February, March, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meggett (30%)

The Meggett 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 clayey fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tooles (22%)

The Tooles component makes up 22 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 over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 2 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: Harbeson (13%)

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

Map Unit: 43—Meadowbrook sand, slough

Component: Meadowbrook, slough (88%)

The Meadowbrook, slough component makes up 88 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 very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, August, September, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (4%)

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

Component: Rutlege (4%)

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

Component: Scranton (4%)

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

Map Unit: 44—Tooles sand**Component:** Tooles, non-hydric (65%)

The Tooles, non-hydric component makes up 65 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Tooles, hydric (20%)

The Tooles, hydric component makes up 20 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Meadowbrook (5%)

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

Component: Chaires (5%)

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

Component: Scranton (5%)

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

Map Unit: 100—Waters of the Gulf of Mexico

Component: Gulf of Mexico (100%)

Generated brief soil descriptions are created for major soil components. The Gulf of Mexico is a miscellaneous area.

Data Source Information

Soil Survey Area: Franklin County, Florida
Survey Area Data: Version 13, Sep 28, 2016

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
2—Albany fine sand	2,788						
		86	Albany	Series	0.0	1.0	2.0
3—Beaches	1,647						
		90	Beaches	Miscellaneous area	1.0	2.0	2.0
8—Ridgewood sand, 0 to 5 percent slopes	4,863						
		90	Ridgewood	Series	0.0	3.0	5.0
9—Chaires sand	1,150						
		70	Chaires, non-hydric	Series	0.0	1.0	2.0
		15	Chaires, hydric	Series	0.0	1.0	2.0
11—Dorovan-Pamlico complex, depressional	3,198						
		55	Dorovan, depressional	Series	0.0	0.6	2.0
		30	Pamlico, depressional	Series	0.0	0.6	2.0
13—Hurricane sand, 0 to 2 percent slopes	1,006						
		90	Hurricane	Series	0.0	1.0	2.0
14—Harbeson mucky loamy sand, depressional	3,140						
		88	Harbeson, depressional	Series	0.0	0.6	1.0
15—Ortega fine sand, 0 to 5 percent slopes	3,997						
		78	Ortega	Series	0.0	3.0	5.0
16—Bonsai mucky fine sand, frequently flooded	1,970						
		89	Bonsai	Series	0.0	1.0	1.0
20—Lynn Haven sand	7,410						
		59	Lynn haven, hydric	Series	0.0	1.0	2.0
		30	Lynn haven, non-hydric	Series	0.0	1.0	2.0

Component Legend—Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
21—Leefield sand, 0 to 2 percent slopes	764						
		85	Leefield	Series	0.0	1.0	2.0
22—Leon sand, 0 to 2 percent slopes	24,668						
		80	Leon	Series	0.0	1.0	2.0
23—Maurepas muck, frequently flooded	5,007						
		90	Maurepas	Series	0.0	0.5	1.0
24—Mandarin fine sand, 0 to 2 percent slopes	5,658						
		92	Mandarin	Series	0.0	1.0	2.0
27—Pelham fine sand	4,968						
		50	Pelham, non-hydric	Series	0.0	1.0	2.0
		35	Pelham, hydric	Series	0.0	1.0	2.0
28—Plummer fine sand	27,176						
		65	Plummer, hydric	Series	0.0	1.0	2.0
		20	Plummer, non-hydric	Series	0.0	1.0	2.0
30—Rutledge loamy fine sand, depressional	1,838						
		89	Rutledge, depressional	Series	0.0	1.0	2.0
31—Rutledge fine sand, 0 to 2 percent slopes	36,805						
		92	Rutledge	Series	0.0	1.0	2.0
32—Sapelo fine sand	1,731						
		75	Sapelo, non-hydric	Series	0.0	1.0	2.0
		10	Sapelo, hydric	Series	0.0	1.0	2.0
33—Scranton fine sand, 0 to 2 percent slopes	50,717						
		84	Scranton	Series	0.0	1.0	2.0
34—Surrency fine sand	10,381						
		88	Surrency	Series	0.0	1.0	2.0
36—Pickney-Pamlico complex, depressional	16,813						
		45	Pickney, depressional	Series	0.0	0.6	1.0
		40	Pamlico, depressional	Series	0.0	0.5	1.0
37—Tooles-Meadowbrook complex, depressional	3,330						
		58	Tooles, depressional	Series	0.0	0.6	1.0
		32	Meadowbrook, depressional	Series	0.0	1.0	1.0

Component Legend—Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
38—Meadowbrook sand	8,740						
		67	Meadowbrook, non-hydric	Series	0.0	1.0	2.0
		15	Meadowbrook, hydric	Series	0.0	1.0	2.0
39—Scranton sand, slough	29,191						
		88	Scranton, slough	Series	0.0	1.0	2.0
41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded	8,255						
		50	Pamlico	Series	0.0	0.5	1.0
		35	Pickney	Series	0.0	0.5	1.0
42—Meadowbrook, Meggett, and Toolcs soils, frequently flooded	1,310						
		35	Meadowbrook	Series	0.0	0.5	1.0
		30	Meggett	Series	0.0	0.5	1.0
		22	Toolcs	Series	0.0	0.5	1.0
43—Meadowbrook sand, slough	8,508						
		88	Meadowbrook, slough	Series	0.0	1.0	2.0
44—Toolcs sand	1,455						
		65	Toolcs, non-hydric	Series	0.0	1.0	1.0
		20	Toolcs, hydric	Series	0.0	1.0	1.0
99—Water	902						
		100	Water	Miscellaneous area			

Component Legend—Liberty County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
2—Albany sand, 0 to 5 percent slopes	11,505						
		90	Albany	Series	0.0	3.0	5.0
6—Blanton sand, 0 to 5 percent slopes	6,925						
		80	Blanton	Series	0.0	3.0	5.0
11—Chipley-Foxworth complex, 0 to 5 percent slopes	8,460						
		50	Chipley	Series	0.0	2.0	5.0
		40	Foxworth	Series	0.0	3.0	5.0

Component Legend--Liberty County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
12--Rutlege and Plummer soils, depressional	67,210						
		45	Rutlege	Series	0.0	0.5	1.0
		40	Plummer	Series	0.0	0.5	1.0
13--Dorovan-Pamlico complex, depressional	1,215						
		50	Dorovan	Series	0.0	0.5	1.0
		45	Pamlico	Series	0.0	0.5	1.0
24--Goldsboro loamy sand, 0 to 2 percent slopes	7,025						
		90	Goldsboro	Series	0.0	1.0	2.0
25--Goldsboro loamy sand, 2 to 5 percent slopes	2,135						
		90	Goldsboro	Series	2.0	3.0	5.0
30--Eloree, Bibb, and Meggett soils, 0 to 3 percent slopes, frequently flooded	15,070						
		35	Eloree	Series	0.0	1.0	3.0
		30	Bibb	Series	0.0	1.0	2.0
		25	Meggett	Series	0.0	1.5	3.0
32--Plummer and Pelham soils	11,375						
		45	Plummer	Series	0.0	0.5	1.0
		40	Pelham	Series	0.0	0.5	1.0
36--Leefield loamy sand, 0 to 5 percent slopes	3,020						
		87	Leefield	Series	0.0	3.0	5.0
39--Leon sand, 0 to 2 percent slopes	8,220						
		80	Leon	Series	0.0	1.0	2.0
44--Lynchburg loamy sand	6,380						
		80	Lynchburg	Series	0.0	1.0	2.0
45--Lynn Haven sand	1,360						
		90	Lynn haven	Series	0.0	1.0	2.0
46--Hurricane, Leon, and Albany soils	16,355						
		35	Hurricane	Series	0.0	2.0	3.0
		30	Leon	Series	0.0	1.0	2.0
		25	Albany	Series	0.0	3.0	5.0

Component Legend—Liberty County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
47—Torhunta-Lynn Haven-Croatan complex, frequently flooded	23,965						
		35	Torhunta	Series	0.0	1.0	2.0
		30	Lynn haven	Series	0.0	1.0	2.0
		25	Croatan	Series	0.0	0.5	1.0
48—Meadowbrook sand	3,135						
		75	Meadowbrook, non-hydric	Series	0.0	1.0	2.0
		15	Meadowbrook, hydric	Series	0.0	1.0	2.0
49—Meadowbrook sand, slough	4,560						
		85	Meadowbrook, slough	Series	0.0	1.0	2.0
54—Pelham loamy sand	1,120						
		65	Pelham, non-hydric	Series	0.0	1.0	2.0
		20	Pelham, hydric	Series	0.0	1.0	2.0
55—Plummer sand, 0 to 5 percent slopes	5,900						
		60	Plummer, non-hydric	Series	0.0	2.0	5.0
		20	Plummer, hydric	Series	0.0	1.0	2.0
56—Potsburg-Potsburg, wet, sand, 0 to 2 percent slopes	7,460						
		65	Potsburg	Series	0.0	1.0	2.0
		25	Potsburg, wet	Series	0.0	1.0	2.0
57—Surrency, Pantego, and Croatan soils, depressional	25,605						
		35	Surrency, depressional	Series	0.0	0.5	1.0
		30	Pantego, depressional	Series	0.0	1.0	2.0
		25	Croatan, depressional	Series	0.0	0.5	1.0
58—Rutlege, Bibb, and Surrency soils, frequently flooded	47,040						
		35	Rutlege	Series	0.0	1.0	2.0
		30	Bibb	Series	0.0	0.5	1.0
		25	Surrency	Series	0.0	1.0	2.0
60—Sapelo-Sapelo, wet, sand, 0 to 2 percent slopes	1,125						
		60	Sapelo	Series	0.0	1.0	2.0
		30	Sapelo, wet	Series	0.0	1.0	2.0
61—Osier sand	1,865						
		80	Osier	Series	0.0	1.0	2.0

Component Legend—Liberty County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
62—Scranton loamy sand, slough	6,660						
		90	Scranton, slough	Series	0.0	1.0	2.0
63—Stilson fine sand, 0 to 3 percent slopes	4,050						
		85	Stilson	Series	0.0	1.0	3.0
67—Goldhead sand	265						
		55	Goldhead	Series	0.0	1.0	2.0
68—Goldhead-Meadowbrook complex, depressional	775						
		45	Goldhead, depressional	Series	0.0	0.5	1.0
		40	Meadowbrook, depressional	Series	0.0	0.5	1.0
71—Pits	300						
		98	Pits	Miscellaneous area	0.0	2.0	4.0
81—Scranton fine sand, 0 to 2 percent slopes	1,900						
		84	Scranton	Series	0.0	1.0	2.0
83—Plummer, Sapelo, and Pottsborg soils	61,470						
		35	Plummer	Series	0.0	1.0	2.0
		30	Sapelo	Series	0.0	1.0	2.0
		25	Pottsborg	Series	0.0	1.0	2.0
91—Woodington loamy sand	9,260						
		90	Woodington	Series	0.0	1.0	2.0
92—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded	730						
		50	Pamlico	Series	0.0	0.5	1.0
		35	Pickney	Series	0.0	0.5	1.0
99—Water	4,155						
		100	Water	Miscellaneous area			
Component Legend—Wakulla County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
17—Ortega sand, 0 to 5 percent slopes	24,110						
		55	Ortega	Series	0.0	3.0	5.0

Component Legend--Wakulla County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
23--Leon sand, 0 to 2 percent slopes	28,300						
		80	Leon	Series	0.0	1.0	2.0
52--Meggett and Croatan soils, frequently flooded	6,660						
		55	Meggett	Series	0.0	1.0	2.0
		30	Croatan	Series	0.0	1.0	2.0
99--Water	4,840						
		100	Water	Miscellaneous area			

Data Source Information

Soil Survey Area: Franklin County, Florida
 Survey Area Data: Version 13, Sep 28, 2016
 Soil Survey Area: Liberty County, Florida
 Survey Area Data: Version 21, Sep 28, 2016
 Soil Survey Area: Wakulla County, Florida
 Survey Area Data: Version 12, Sep 28, 2016

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)

Franklin County, Florida

Map Unit: 2—Albany fine sand

Component: Albany (86%)

The Albany component makes up 86 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. 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: Stilson (2%)

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

Component: Sapelo (2%)

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

Component: Ridgewood (2%)

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

Component: Plummer (2%)

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

Component: Pelham (2%)

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

Component: Blanton (2%)

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

Component: Leefield (2%)

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

Map Unit: 3—Beaches

Component: Beaches (90%)

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

Component: Corolla (5%)

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

Component: Duckston (3%)

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

Component: Hurricane (2%)

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

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

Component: Ridgewood (90%)

The Ridgewood component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy 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 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: Albany (3%)

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

Component: Hurricane (3%)

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

Component: Scranton (2%)

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

Component: Ortega (2%)

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

Map Unit: 9—Chaires sand

Component: Chaires, non-hydric (70%)

The Chaires, non-hydric component makes up 70 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Chaires, hydric (15%)

The Chaires, hydric component makes up 15 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 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (4%)

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

Component: Meadowbrook (3%)

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

Component: Scranton (3%)

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

Component: Toolles (3%)

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

Component: Rutledge (2%)

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

Map Unit: 11—Dorovan-Pamlico complex, depressional

Component: Dorovan, depressional (55%)

The Dorovan, depressional component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (30%)

The Pamlico, depressional component makes up 30 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (5%)

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

Component: Pickney (5%)

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

Component: Scranton (3%)

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

Component: Lynn Haven (2%)

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

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

Component: Hurricane (90%)

The Hurricane component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY004FL North Florida Flatwoods ecological site. 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: Foxworth (5%)

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

Component: Chipley (5%)

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

Map Unit: 14—Harbeson mucky loamy sand, depressional

Component: Harbeson, depressional (88%)

The Harbeson, depressional component makes up 88 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 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 January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (3%)

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

Component: Pamlico (3%)

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

Component: Bonsai (2%)

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

Component: Meadowbrook (2%)

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

Component: Rutlege (2%)

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

Map Unit: 15—Ortega fine sand, 0 to 5 percent slopes

Component: Ortega (78%)

The Ortega component makes up 78 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of 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 January, February, March, April, May, June, July, August, September, December. 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: Hurricane (4%)

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

Component: Kershaw (4%)

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

Component: Albany (4%)

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

Component: Leon (4%)

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

Component: Lynn Haven, depressional (3%)

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

Component: Ridgewood (3%)

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

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

Component: Bonsai (89%)

The Bonsai component makes up 89 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 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 high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (11%)

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

Map Unit: 20—Lynn Haven sand

Component: Lynn Haven, hydric (59%)

The Lynn Haven, hydric component makes up 59 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven, non-hydric (30%)

The Lynn Haven, non-hydric component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, June, July, August, September, October, November, December. 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: Leon (6%)

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

Component: Rutlege (5%)

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

Map Unit: 21—Leefield sand, 0 to 2 percent slopes

Component: Leefield (85%)

The Leefield 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 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 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 January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. 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: Alapaha (5%)

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

Component: Stilson (4%)

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

Component: Albany (2%)

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

Component: Pelham, non-hydric (2%)

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

Component: Foxworth (1%)

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

Component: Chipley (1%)

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

Map Unit: 22—Leon sand, 0 to 2 percent slopes

Component: Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

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

Component: Pottsburg (4%)

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

Component: Hurricane (4%)

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

Component: Mandarin (3%)

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

Component: Rutlege (2%)

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

Component: Pickney (2%)

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

Map Unit: 23—Maurepas muck, frequently flooded

Component: Maurepas (90%)

The Maurepas component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of woody 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 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (5%)

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

Component: Dirego (3%)

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

Component: Dorovan (2%)

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

Map Unit: 24—Mandarin fine sand, 0 to 2 percent slopes

Component: Mandarin (92%)

The Mandarin component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 30 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 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: Ortega (5%)

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

Component: Chaires (3%)

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

Map Unit: 27—Pelham fine sand

Component: Pelham, non-hydric (50%)

The Pelham, non-hydric component makes up 50 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 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 January, February, March, April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, hydric (35%)

The Pelham, hydric component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 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: Albany (3%)

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

Component: Leefield (3%)

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

Component: Scranton (3%)

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

Component: Sapelo (3%)

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

Component: Surrency (3%)

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

Map Unit: 28—Plummer fine sand

Component: Plummer, hydric (65%)

The Plummer, hydric component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is 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 January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Plummer, non-hydric (20%)

The Plummer, non-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 12 inches during January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham (4%)

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

Component: Leon (3%)

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

Component: Sapelo (3%)

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

Component: Scranton (3%)

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

Component: Surrency (2%)

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

Map Unit: 30—Rutlege loamy fine sand, depressional

Component: Rutlege, depressional (89%)

The Rutlege, depressional component makes up 89 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 and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (5%)

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

Component: Lynn Haven (3%)

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

Component: Scranton (3%)

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

Map Unit: 31—Rutlege fine sand, 0 to 2 percent slopes

Component: Rutlege (92%)

The Rutlege component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (2%)

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

Component: Pickney (2%)

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

Component: Scranton (2%)

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

Component: Pamlico (2%)

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

Map Unit: 32—Sapelo fine sand

Component: Sapelo, non-hydric (75%)

The Sapelo, non-hydric component makes up 75 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, hydric (10%)

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

Component: Plummer (5%)

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

Component: Pelham (2%)

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

Component: Leon (2%)

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

Component: Albany (2%)

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

Component: Leefield (2%)

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

Component: Scranton (2%)

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

Map Unit: 33—Scranton fine sand, 0 to 2 percent slopes

Component: Scranton (84%)

The Scranton component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton, slough (10%)

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

Component: Leon (3%)

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

Component: Rutlege (3%)

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

Map Unit: 34—Surrency fine sand

Component: Surrency (88%)

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

Component: Rutlege (5%)

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

Component: Pelham (4%)

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

Component: Plummer (3%)

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

Map Unit: 36—Pickney-Pamlico complex, depressional

Component: Pickney, depressional (45%)

The Pickney, depressional component makes up 45 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 and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (40%)

The Pamlico, depressional 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Scranton (3%)

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

Component: Scranton, slough (3%)

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

Component: Rutlege (3%)

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

Component: Maurepas (2%)

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

Component: Dorovan (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 37—Tooles-Meadowbrook complex, depressional

Component: Tooles, depressional (58%)

The Tooles, depressional component makes up 58 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 over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, depressional (32%)

The Meadowbrook, depressional component makes up 32 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Scranton, slough (10%)

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

Map Unit: 38—Meadowbrook sand

Component: Meadowbrook, non-hydric (67%)

The Meadowbrook, non-hydric component makes up 67 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, hydric (15%)

The Meadowbrook, hydric component makes up 15 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, August, September, October, November, December. 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: Toolcs (5%)

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

Component: Scranton (5%)

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

Component: Chaires (5%)

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

Component: Leon (3%)

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

Map Unit: 39—Scranton sand, slough

Component: Scranton, slough (88%)

The Scranton, slough component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on sloughs 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 low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton (4%)

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

Component: Rutlege (2%)

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

Component: Meadowbrook (2%)

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

Component: Plummer (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded

Component: Pamlico (50%)

The Pamlico component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on marine terraces on coastal plains, flood plains 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (35%)

The Pickney component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on 1 flood plains, 2 marine terraces, 3 coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 7 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: Dorovan (8%)

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

Component: Rutlege (7%)

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

Map Unit: 42—Meadowbrook, Meggett, and Toolles soils, frequently flooded

Component: Meadowbrook (35%)

The Meadowbrook component makes up 35 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 0 inches during January, February, March, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meggett (30%)

The Meggett 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 clayey fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Toolles (22%)

The Toolles component makes up 22 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 over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 2 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: Harbeson (13%)

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

Map Unit: 43—Meadowbrook sand, slough

Component: Meadowbrook, slough (88%)

The Meadowbrook, slough component makes up 88 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 very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, August, September, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (4%)

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

Component: Rutlege (4%)

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

Component: Scranton (4%)

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

Map Unit: 44—Toolles sand

Component: Toolles, non-hydric (65%)

The Toolles, non-hydric component makes up 65 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Toolles, hydric (20%)

The Tooles, hydric component makes up 20 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Meadowbrook (5%)

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

Component: Chaires (5%)

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

Component: Scranton (5%)

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

Liberty County, Florida

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

Component: Albany (90%)

The Albany component makes up 90 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 and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. 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: Plummer (5%)

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

Component: Blanton (5%)

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

Map Unit: 6—Blanton sand, 0 to 5 percent slopes

Component: Blanton (80%)

The Blanton component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on interfluvies 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 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 January, February, March, April, May, 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.

Component: Albany (5%)

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

Component: Fuquay (5%)

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

Component: Bonifay (4%)

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

Component: Alpin (3%)

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

Component: Ocilla (3%)

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

Map Unit: 11—Chipley-Foxworth complex, 0 to 5 percent slopes

Component: Chipley (50%)

The Chipley component makes up 50 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 4 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: Foxworth (40%)

The Foxworth component makes up 40 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 eolian deposits and/or 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 48 inches during March. 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: Leon, non-hydric (5%)

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

Component: Lakeland (5%)

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

Map Unit: 12—Rutlege and Plummer soils, depressional

Component: Rutlege (45%)

The Rutlege component makes up 45 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 and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 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: Plummer (40%)

The Plummer 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 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: Bibb (15%)

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

Map Unit: 13—Dorovan-Pamlico complex, depressional

Component: Dorovan (50%)

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

Component: Pamlico (45%)

The Pamlico component makes up 45 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 organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (5%)

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

Map Unit: 24—Goldsboro loamy sand, 0 to 2 percent slopes

Component: Goldsboro (90%)

The Goldsboro component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of 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 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. 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: Lynchburg (5%)

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

Component: Fuquay (3%)

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

Component: Albany (2%)

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

Map Unit: 25—Goldsboro loamy sand, 2 to 5 percent slopes

Component: Goldsboro (90%)

The Goldsboro component makes up 90 percent of the map unit. Slopes are 2 to 5 percent. This component is on knolls on marine terraces on coastal plains, rises on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is 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 27 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. 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: Fuquay (3%)

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

Component: Albany (3%)

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

Component: Dothan (2%)

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

Component: Lynchburg (2%)

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

Map Unit: 30—Elloree, Bibb, and Meggett soils, 0 to 3 percent slopes, frequently flooded

Component: Elloree (35%)

The Elloree component makes up 35 percent of the map unit. Slopes are 0 to 3 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 high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

Component: Bibb (30%)

The Bibb component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 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: Meggett (25%)

The Meggett component makes up 25 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of clayey. 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 high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (10%)

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

Map Unit: 32—Plummer and Pelham soils

Component: Plummer (45%)

The Plummer component makes up 45 percent of the map unit. Slopes are 0 to 1 percent. This component is on open depressions on marine terraces on coastal plains, 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 very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 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: Pelham (40%)

The Pelham component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on open depressions on marine terraces on coastal plains, 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 very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, July, August, September. Organic matter content in the surface horizon is about 2 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: Pottsburg, non-hydric (5%)

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

Component: Pottsburg, hydric (5%)

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

Component: Sapelo, hydric (5%)

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

Map Unit: 38—Leefield loamy sand, 0 to 5 percent slopes

Component: Leefield (87%)

The Leefield component makes up 87 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 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 moderate. 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 January, February, March, April, May, June, July, August, September, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. 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: Stilson (5%)

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

Component: Alapaha (4%)

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

Component: Plummer (4%)

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

Map Unit: 39—Leon sand, 0 to 2 percent slopes

Component: Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

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

Component: Pottsburg (4%)

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

Component: Hurricane (4%)

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

Component: Mandarin (3%)

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

Component: Rutlege (2%)

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

Component: Pickney (2%)

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

Map Unit: 44—Lynchburg loamy sand

Component: Lynchburg (80%)

The Lynchburg component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is 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 moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. 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: Goldsboro (10%)

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

Component: Rains (10%)

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

Map Unit: 45—Lynn Haven sand

Component: Lynn Haven (90%)

The Lynn Haven component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, 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: Leon, hydric (5%)

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

Component: Pickney, frequently flooded (3%)

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

Component: Pamlico, frequently flooded (2%)

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

Map Unit: 46—Hurricane, Leon, and Albany soils

Component: Hurricane (35%)

The Hurricane component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on knolls on marine terraces on coastal plains, rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during January, February, March, July, August, September. 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: Leon (30%)

The Leon component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on swales 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 January, February, March, 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: Albany (25%)

The Albany component makes up 25 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains, 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 high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, 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: Chipley (5%)

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

Component: Foxworth (5%)

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

Map Unit: 47—Torhunta-Lynn Haven-Croatan complex, frequently flooded

Component: Torhunta (35%)

The Torhunta component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains, marine terraces, coastal plains. The parent material consists of loamy and sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 7 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: Lynn Haven (30%)

The Lynn Haven component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy 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 January, February, March, 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: Croatan (25%)

The Croatan component makes up 25 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 and/or loamy marine deposits and/or fluvio-marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September, November. Organic matter content in the surface horizon is about 43 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, non-hydric (10%)

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

Map Unit: 48—Meadowbrook sand

Component: Meadowbrook, non-hydric (75%)

The Meadowbrook, non-hydric component makes up 75 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 9 inches during January, February, March, 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: Meadowbrook, hydric (15%)

The Meadowbrook, hydric component makes up 15 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 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Goldhead, depressional (8%)

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

Component: Pantego, depressional (2%)

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

Map Unit: 49—Meadowbrook sand, slough

Component: Meadowbrook, slough (85%)

The Meadowbrook, slough 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 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 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (8%)

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

Component: Surrency, depressional (7%)

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

Map Unit: 54—Pelham loamy sand

Component: Pelham, non-hydric (65%)

The Pelham, non-hydric component makes up 65 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 9 inches during January, February, March, 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: Pelham, hydric (20%)

The Pelham, 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 0 inches during January, February, March, July, August, September. 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: Leefield (10%)

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

Component: Lynchburg (5%)

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

Map Unit: 55—Plummer sand, 0 to 5 percent slopes

Component: Plummer, non-hydric (60%)

The Plummer, non-hydric component makes up 60 percent of the map unit. Slopes are 0 to 5 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 9 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 6 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: Plummer, hydric (20%)

The Plummer, 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 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 6 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: Lynchburg (10%)

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

Component: Leefield (10%)

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

Map Unit: 56—Pottsburg-Pottsburg, wet, sand, 0 to 2 percent slopes

Component: Pottsburg (65%)

The Pottsburg component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. Irrigated 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: Pottsburg, wet (25%)

The Pottsburg, wet component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, non-hydric (6%)

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

Component: Chipley (2%)

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

Component: Allanton (2%)

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

Map Unit: 57—Surrency, Pantego, and Croatan soils, depressional

Component: Surrency, depressional (35%)

The Surrency, depressional component makes up 35 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 and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pantego, depressional (30%)

The Pantego, depressional component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately 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 January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Croatan, depressional (25%)

The Croatan, depressional component makes up 25 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 and/or 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 very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 43 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: Osier (10%)

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

Map Unit: 58—Rutlege, Bibb, and Surrency soils, frequently flooded

Component: Rutlege (35%)

The Rutlege component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy 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 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 January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 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: Bibb (30%)

The Bibb 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 sandy and loamy alluvium. 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 frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 2 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: Surrency (25%)

The Surrency component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits and/or fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wahee (10%)

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

Map Unit: 60—Sapelo-Sapelo, wet, sand, 0 to 2 percent slopes

Component: Sapelo (60%)

The Sapelo 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 January, February, March, April, December. 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: Sapelo, wet (30%)

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

Component: Albany (4%)

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

Component: Plummer (3%)

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

Component: Ocilla (3%)

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

Map Unit: 61—Osler sand

Component: Osier (80%)

The Osier component makes up 80 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 alluvium. 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 4 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: Rutlege (10%)

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

Component: Hosford (10%)

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

Map Unit: 62—Scranton loamy sand, slough

Component: Scranton, slough (90%)

The Scranton, slough component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits. 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (10%)

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

Map Unit: 63—Stilson fine sand, 0 to 3 percent slopes

Component: Stilson (85%)

The Stilson component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2w. 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: Albany (10%)

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

Component: Dothan (5%)

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

Map Unit: 67—Goldhead sand

Component: Goldhead (85%)

The Goldhead 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, 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: Surrency, depressional (10%)

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

Component: Pantego, depressional (5%)

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

Map Unit: 68—Goldhead-Meadowbrook complex, depressional

Component: Goldhead, depressional (45%)

The Goldhead, depressional component makes up 45 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, depressional (40%)

The Meadowbrook, depressional 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 4 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: Pamlico, frequently flooded (8%)

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

Component: Surrency, depressional (7%)

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

Map Unit: 71—Pits

Component: Pits (98%)

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

Component: Troup (2%)

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

Map Unit: 81—Scranton fine sand, 0 to 2 percent slopes

Component: Scranton (84%)

The Scranton component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton, slough (10%)

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

Component: Leon (3%)

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

Component: Rutlege (3%)

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

Map Unit: 83—Plummer, Sapelo, and Pottsburg soils

Component: Plummer (35%)

The Plummer component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo (30%)

The Sapelo component makes up 30 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 January, February, March, 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: Pottsborg (25%)

The Pottsborg component makes up 25 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 January, February, March, 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: Hurricane (6%)

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

Component: Centenary (2%)

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

Component: Foxworth (2%)

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

Map Unit: 91—Woodington loamy sand

Component: Woodington (90%)

The Woodington component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats, 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 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 6 inches during January, February, March, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynchburg (6%)

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

Component: Leefield (4%)

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

Map Unit: 92—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded

Component: Pamlico (50%)

The Pamlico component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on marine terraces on coastal plains, flood plains 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (35%)

The Pickney component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on 1 flood plains, 2 marine terraces, 3 coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 7 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: Dorovan (8%)

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

Component: Rutlege (7%)

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

Wakulla County, Florida

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

Component: Ortega (85%)

The Ortega component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on — Error in Exists On —. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, 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 1 within 30 inches of the soil surface.

Component: Lakeland (10%)

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

Component: Leon (5%)

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

Map Unit: 23—Leon sand, 0 to 2 percent slopes

Component: Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

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

Component: Pottsburg (4%)

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

Component: Hurricane (4%)

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

Component: Mandarin (3%)

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

Component: Pickney (2%)

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

Component: Rutlege (2%)

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

Map Unit: 52—Meggett and Croatan soils, frequently flooded

Component: Meggett (55%)

The Meggett component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of clayey fluviomarine 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 high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Croatan (30%)

The Croatan component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of organic material over loamy marine or fluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. 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 3 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 43 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: Surrency (10%)

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

Component: Rutlege (5%)

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

Data Source Information

Soil Survey Area: Franklin County, Florida
Survey Area Data: Version 13, Sep 28, 2016

Soil Survey Area: Liberty County, Florida
Survey Area Data: Version 21, Sep 28, 2016

Soil Survey Area: Wakulla County, Florida
Survey Area Data: Version 12, Sep 28, 2016

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
2—Albany fine sand	2,788						
		86	Albany	Series	0.0	1.0	2.0
4—Dirego and Bayvi soils, tidal	4,847						
		50	Dirego	Series	0.0	0.5	1.0
		40	Bayvi	Series	0.0	0.5	1.0
5—Aquents, nearly level	650						
		50	Aquents	Taxon above family	0.0	1.0	2.0
		50	Aquents	Taxon above family	0.0	1.0	2.0
6—Blanton fine sand, 0 to 5 percent slopes	1,240						
		84	Blanton	Series	0.0	3.0	5.0
7—Bohicket and Tisonia soils, tidal	14,509						
		45	Bohicket	Series	0.0	0.5	1.0
		40	Tisonia	Series	0.0	0.5	1.0
8—Ridgewood sand, 0 to 5 percent slopes	4,863						
		90	Ridgewood	Series	0.0	3.0	5.0
9—Chaires sand	1,150						
		70	Chaires, non-hydric	Series	0.0	1.0	2.0
		15	Chaires, hydric	Series	0.0	1.0	2.0
11—Dorovan-Pamlico complex, depressional	3,198						
		55	Dorovan, depressional	Series	0.0	0.6	2.0
		30	Pamlico, depressional	Series	0.0	0.6	2.0
13—Hurricane sand, 0 to 2 percent slopes	1,006						
		90	Hurricane	Series	0.0	1.0	2.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
14—Harbeson mucky loamy sand, depressional	3,140						
		88	Harbeson, depressional	Series	0.0	0.6	1.0
15—Ortega fine sand, 0 to 5 percent slopes	3,997						
		78	Ortega	Series	0.0	3.0	5.0
16—Bonsai mucky fine sand, frequently flooded	1,970						
		89	Bonsai	Series	0.0	1.0	1.0
20—Lynn Haven sand	7,410						
		59	Lynn haven, hydric	Series	0.0	1.0	2.0
		30	Lynn haven, non-hydric	Series	0.0	1.0	2.0
21—Leefield sand, 0 to 2 percent slopes	764						
		85	Leefield	Series	0.0	1.0	2.0
22—Leon sand, 0 to 2 percent slopes	24,668						
		80	Leon	Series	0.0	1.0	2.0
23—Maurepas muck, frequently flooded	5,007						
		90	Maurepas	Series	0.0	0.5	1.0
24—Mandarin fine sand, 0 to 2 percent slopes	5,658						
		92	Mandarin	Series	0.0	1.0	2.0
25—Chowan, Brickyard, and Kenner soils, frequently flooded	19,980						
		55	Chowan	Series	0.0	0.5	1.0
		25	Brickyard	Series	0.0	0.5	1.0
		15	Kenner	Series	0.0	0.5	1.0
27—Pelham fine sand	4,968						
		50	Pelham, non-hydric	Series	0.0	1.0	2.0
		35	Pelham, hydric	Series	0.0	1.0	2.0
28—Plummer fine sand	27,176						
		65	Plummer, hydric	Series	0.0	1.0	2.0
		20	Plummer, non-hydric	Series	0.0	1.0	2.0
29—Resota fine sand, 0 to 5 percent slopes	5,229						
		90	Resota	Series	0.0	3.0	5.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
30—Rutlege loamy fine sand, depressional	1,838						
		89	Rutlege, depressional	Series	0.0	1.0	2.0
31—Rutlege fine sand, 0 to 2 percent slopes	36,805						
		92	Rutlege	Series	0.0	1.0	2.0
32—Sapelo fine sand	1,731						
		75	Sapelo, non-hydric	Series	0.0	1.0	2.0
		10	Sapelo, hydric	Series	0.0	1.0	2.0
33—Scranton fine sand, 0 to 2 percent slopes	50,717						
		84	Scranton	Series	0.0	1.0	2.0
34—Surrency fine sand	10,381						
		88	Surrency	Series	0.0	1.0	2.0
36—Pickney-Pamlico complex, depressional	16,813						
		45	Pickney, depressional	Series	0.0	0.6	1.0
		40	Pamlico, depressional	Series	0.0	0.5	1.0
37—Tooles-Meadowbrook complex, depressional	3,330						
		58	Tooles, depressional	Series	0.0	0.6	1.0
		32	Meadowbrook, depressional	Series	0.0	1.0	1.0
38—Meadowbrook sand	8,740						
		67	Meadowbrook, non-hydric	Series	0.0	1.0	2.0
		15	Meadowbrook, hydric	Series	0.0	1.0	2.0
39—Scranton sand, slough	29,191						
		88	Scranton, slough	Series	0.0	1.0	2.0
41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded	8,255						
		50	Pamlico	Series	0.0	0.5	1.0
		35	Pickney	Series	0.0	0.5	1.0
42—Meadowbrook, Meggett, and Tooles soils, frequently flooded	1,310						
		35	Meadowbrook	Series	0.0	0.5	1.0
		30	Meggett	Series	0.0	0.5	1.0
		22	Tooles	Series	0.0	0.5	1.0
43—Meadowbrook sand, slough	8,508						
		88	Meadowbrook, slough	Series	0.0	1.0	2.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
44--Tooles sand	1,455						
		65	Tooles, non-hydric	Series	0.0	1.0	1.0
		20	Tooles, hydric	Series	0.0	1.0	1.0
99--Water	902						
		100	Water	Miscellaneous area			
100--Waters of the Gulf of Mexico	15,000						
		100	Gulf of Mexico	Miscellaneous area			

Data Source Information

Soil Survey Area: Franklin County, Florida
 Survey Area Data: Version 13, Sep 28, 2016

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)

Franklin County, Florida

Map Unit: 2—Albany fine sand

Component: Albany (86%)

The Albany component makes up 86 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. 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: Stilson (2%)

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

Component: Sapelo (2%)

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

Component: Ridgewood (2%)

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

Component: Plummer (2%)

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

Component: Pelham (2%)

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

Component: Blanton (2%)

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

Component: Leefield (2%)

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

Map Unit: 4—Dirego and Bayvi soils, tidal**Component:** Dirego (50%)

The Dirego component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes 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 very 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 January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 43 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 40 within 30 inches of the soil surface.

Component: Bayvi (40%)

The Bayvi component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes 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 very 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 January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 14 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 60 within 30 inches of the soil surface.

Component: Maurepas (10%)

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

Map Unit: 5—Aquents, nearly level

Component: Aquents (50%)

The Aquents component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, December. This soil meets hydric criteria.

Component: Aquents (50%)

The Aquent component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, December. This soil does not meet hydric criteria.

Map Unit: 6—Blanton fine sand, 0 to 5 percent slopes

Component: Blanton (84%)

The Blanton component makes up 84 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 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 January, February, March, December. 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: Ortega (4%)

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

Component: Mandarin (3%)

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

Component: Ridgewood (3%)

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

Component: Stilson (3%)

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

Component: Albany (3%)

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

Map Unit: 7—Bohicket and Tisonia soils, tidal**Component: Bohicket (45%)**

The Bohicket component makes up 45 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of loamy and clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 30 within 30 inches of the soil surface.

Component: Tisonia (40%)

The Tisonia component makes up 40 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of organic material over clayey 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 low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 48 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 4 within 30 inches of the soil surface.

Component: Dirego (5%)

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

Component: Maurepas (5%)

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

Component: Chowan (3%)

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

Component: Brickyard (2%)

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

Map Unit: 8—Ridgewood sand, 0 to 5 percent slopes**Component:** Ridgewood (90%)

The Ridgewood component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy 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 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: Albany (3%)

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

Component: Hurricane (3%)

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

Component: Scranton (2%)

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

Component: Ortega (2%)

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

Map Unit: 9—Chaires sand**Component:** Chaires, non-hydric (70%)

The Chaires, non-hydric component makes up 70 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Chaires, hydric (15%)

The Chaires, hydric component makes up 15 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 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon (4%)

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

Component: Meadowbrook (3%)

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

Component: Scranton (3%)

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

Component: Tooles (3%)

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

Component: Rutledge (2%)

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

Map Unit: 11—Dorovan-Pamlico complex, depressional

Component: Dorovan, depressional (55%)

The Dorovan, depressional component makes up 55 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (30%)

The Pamlico, depressional component makes up 30 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Rutlege (5%)

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

Component: Pickney (5%)

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

Component: Scranton (3%)

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

Component: Lynn Haven (2%)

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

Map Unit: 13—Hurricane sand, 0 to 2 percent slopes**Component:** Hurricane (90%)

The Hurricane component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R133AY004FL North Florida Flatwoods ecological site. 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: Foxworth (5%)

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

Component: Chipley (5%)

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

Map Unit: 14—Harbeson mucky loamy sand, depressional**Component:** Harbeson, depressional (88%)

The Harbeson, depressional component makes up 88 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 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 January, February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (3%)

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

Component: Pamlico (3%)

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

Component: Bonsai (2%)

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

Component: Meadowbrook (2%)

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

Component: Rutlege (2%)

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

Map Unit: 15—Ortega fine sand, 0 to 5 percent slopes**Component:** Ortega (78%)

The Ortega component makes up 78 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains. The parent material consists of 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 January, February, March, April, May, June, July, August, September, December. 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: Leon (4%)

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

Component: Hurricane (4%)

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

Component: Kershaw (4%)

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

Component: Albany (4%)

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

Component: Lynn Haven, depressional (3%)

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

Component: Ridgewood (3%)

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

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

Component: Bonsai (89%)

The Bonsai component makes up 89 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 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 high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (11%)

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

Map Unit: 20—Lynn Haven sand

Component: Lynn Haven, hydric (59%)

The Lynn Haven, hydric component makes up 59 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven, non-hydric (30%)

The Lynn Haven, non-hydric component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, June, July, August, September, October, November, December. 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: Leon (6%)

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

Component: Rutlege (5%)

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

Map Unit: 21—Leefield sand, 0 to 2 percent slopes

Component: Leefield (85%)

The Leefield 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 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 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 January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. 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: Alapaha (5%)

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

Component: Stilson (4%)

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

Component: Pelham, non-hydric (2%)

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

Component: Albany (2%)

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

Component: Foxworth (1%)

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

Component: Chipley (1%)

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

Map Unit: 22—Leon sand, 0 to 2 percent slopes

Component: Leon (80%)

The Leon component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 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 January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. Irrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Leon, hydric (5%)

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

Component: Hurricane (4%)

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

Component: Pottsburg (4%)

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

Component: Mandarin (3%)

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

Component: Rutlege (2%)

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

Component: Pickney (2%)

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

Map Unit: 23—Maurepas muck, frequently flooded

Component: Maurepas (90%)

The Maurepas component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of woody 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 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico (5%)

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

Component: Dirego (3%)

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

Component: Dorovan (2%)

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

Map Unit: 24—Mandarin fine sand, 0 to 2 percent slopes

Component: Mandarin (92%)

The Mandarin component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on — Error in Exists On —. 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 30 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 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: Ortega (5%)

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

Component: Chaires (3%)

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

Map Unit: 25—Chowan, Brickyard, and Kenner soils, frequently flooded**Component:** Chowan (55%)

The Chowan component makes up 55 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 marine deposits over 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 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 January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Brickyard (25%)

The Brickyard component makes up 25 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 silty and clayey 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 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 not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, 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: Kenner (15%)

The Kenner component makes up 15 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 stratified herbaceous organic material and clayey 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 low. 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 frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 55 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 6 within 30 inches of the soil surface.

Component: Maurepas (3%)

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

Component: Meggett (2%)

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

Map Unit: 27—Pelham fine sand

Component: Pelham, non-hydric (50%)

The Pelham, non-hydric component makes up 50 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 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 January, February, March, April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 5w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham, hydric (35%)

The Pelham, hydric component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 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: Albany (3%)

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

Component: Leefield (3%)

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

Component: Scranton (3%)

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

Component: Sapelo (3%)

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

Component: Surrency (3%)

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

Map Unit: 28—Plummer fine sand

Component: Plummer, hydric (65%)

The Plummer, hydric component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is 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 January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Plummer, non-hydric (20%)

The Plummer, non-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 12 inches during January, February, June, July, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pelham (4%)

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

Component: Leon (3%)

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

Component: Sapelo (3%)

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

Component: Scranton (3%)

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

Component: Surrency (2%)

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

Map Unit: 29—Resota fine sand, 0 to 5 percent slopes**Component:** Resota (90%)

The Resota component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy 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 51 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ortega (4%)

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

Component: Mandarin (3%)

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

Component: Kureb (3%)

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

Map Unit: 30—Rutlege loamy fine sand, depressional**Component:** Rutlege, depressional (89%)

The Rutlege, depressional component makes up 89 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 and/or fluvio-marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (5%)

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

Component: Lynn Haven (3%)

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

Component: Scranton (3%)

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

Map Unit: 31—Rutlege fine sand, 0 to 2 percent slopes**Component:** Rutlege (92%)

The Rutlege component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lynn Haven (2%)

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

Component: Pickney (2%)

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

Component: Scranton (2%)

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

Component: Pamlico (2%)

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

Map Unit: 32—Sapelo fine sand

Component: Sapelo, non-hydric (75%)

The Sapelo, non-hydric component makes up 75 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 January, February, March, April, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Sapelo, hydric (10%)

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

Component: Plummer (5%)

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

Component: Pelham (2%)

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

Component: Leon (2%)

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

Component: Albany (2%)

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

Component: Leefield (2%)

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

Component: Scranton (2%)

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

Map Unit: 33—Scranton fine sand, 0 to 2 percent slopes**Component:** Scranton (84%)

The Scranton component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, 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 low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton, slough (10%)

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

Component: Leon (3%)

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

Component: Rutlege (3%)

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

Map Unit: 34—Surrency fine sand**Component:** Surrency (88%)

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

Component: Rutlege (5%)

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

Component: Pelham (4%)

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

Component: Plummer (3%)

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

Map Unit: 36—Pickney-Pamlico complex, depressional

Component: Pickney, depressional (45%)

The Pickney, depressional component makes up 45 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 and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pamlico, depressional (40%)

The Pamlico, depressional 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 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 moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Scranton (3%)

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

Component: Scranton, slough (3%)

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

Component: Rutlege (3%)

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

Component: Maurepas (2%)

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

Component: Dorovan (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 37—Tooles-Meadowbrook complex, depressional

Component: Tooles, depressional (58%)

The Tooles, depressional component makes up 58 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 over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 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 low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, depressional (32%)

The Meadowbrook, depressional component makes up 32 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Scranton, slough (10%)

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

Map Unit: 38—Meadowbrook sand

Component: Meadowbrook, non-hydric (67%)

The Meadowbrook, non-hydric component makes up 67 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meadowbrook, hydric (15%)

The Meadowbrook, hydric component makes up 15 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 rarely flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, August, September, October, November, December. 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: Toolcs (5%)

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

Component: Scranton (5%)

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

Component: Chaires (5%)

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

Component: Leon (3%)

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

Map Unit: 39—Scranton sand, slough

Component: Scranton, slough (88%)

The Scranton, slough component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on sloughs 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 low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 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: Scranton (4%)

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

Component: Rutlege (2%)

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

Component: Meadowbrook (2%)

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

Component: Plummer (2%)

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

Component: Lynn Haven (2%)

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

Map Unit: 41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded

Component: Pamlico (50%)

The Pamlico component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on marine terraces on coastal plains, flood plains 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 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 frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 50 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pickney (35%)

The Pickney component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on 1 flood plains, 2 marine terraces, 3 coastal plains. The parent material consists of sandy marine deposits and/or fluviomarine 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 low. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 7 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: Dorovan (8%)

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

Component: Rutlege (7%)

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

Map Unit: 42—Meadowbrook, Meggett, and Tooles soils, frequently flooded

Component: Meadowbrook (35%)

The Meadowbrook component makes up 35 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 0 inches during January, February, March, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Meggett (30%)

The Meggett 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 clayey fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tooles (22%)

The Tooles component makes up 22 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 over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 2 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: Harbeson (13%)

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

Map Unit: 43—Meadowbrook sand, slough

Component: Meadowbrook, slough (88%)

The Meadowbrook, slough component makes up 88 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 very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, August, September, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Harbeson (4%)

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

Component: Rutlege (4%)

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

Component: Scranton (4%)

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

Map Unit: 44—Toolles sand**Component:** Toolles, non-hydric (65%)

The Toolles, non-hydric component makes up 65 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Toolles, hydric (20%)

The Tooles, hydric component makes up 20 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 and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 40 to 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during February, March, April, May, June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 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: Meadowbrook (5%)

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

Component: Chaires (5%)

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

Component: Scranton (5%)

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

Map Unit: 100—Waters of the Gulf of Mexico

Component: Gulf of Mexico (100%)

Generated brief soil descriptions are created for major soil components. The Gulf of Mexico is a miscellaneous area.

Data Source Information

Soil Survey Area: Franklin County, Florida

Survey Area Data: Version 13, Sep 28, 2016

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend—Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
2—Albany fine sand	2,788						
		86	Albany	Series	0.0	1.0	2.0
4—Dirego and Bayvi soils, tidal	4,847						
		50	Dirego	Series	0.0	0.5	1.0
		40	Bayvi	Series	0.0	0.5	1.0
5—Aquents, nearly level	650						
		50	Aquents	Taxon above family	0.0	1.0	2.0
		50	Aquents	Taxon above family	0.0	1.0	2.0
6—Blanton fine sand, 0 to 5 percent slopes	1,240						
		84	Blanton	Series	0.0	3.0	5.0
7—Bohicket and Tisonia soils, tidal	14,509						
		45	Bohicket	Series	0.0	0.5	1.0
		40	Tisonia	Series	0.0	0.5	1.0
8—Ridgewood sand, 0 to 5 percent slopes	4,863						
		90	Ridgewood	Series	0.0	3.0	5.0
9—Chaires sand	1,150						
		70	Chaires, non-hydric	Series	0.0	1.0	2.0
		15	Chaires, hydric	Series	0.0	1.0	2.0
10—Corolla sand, 0 to 5 percent slopes	3,852						
		88	Corolla	Series	0.0	3.0	5.0
11—Dorovan-Pamlico complex, depressional	3,198						
		55	Dorovan, depressional	Series	0.0	0.6	2.0
		30	Pamlico, depressional	Series	0.0	0.6	2.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
13—Hurricane sand, 0 to 2 percent slopes	1,006						
		90	Hurricane	Series	0.0	1.0	2.0
14—Harbeson mucky loamy sand, depressional	3,140						
		88	Harbeson, depressional	Series	0.0	0.6	1.0
15—Ortega fine sand, 0 to 5 percent slopes	3,997						
		78	Ortega	Series	0.0	3.0	5.0
16—Bonsai mucky fine sand, frequently flooded	1,970						
		89	Bonsai	Series	0.0	1.0	1.0
18—Kershaw sand, 5 to 12 percent slopes	821						
		88	Kershaw	Series	5.0	9.0	12.0
19—Kureb fine sand, 3 to 8 percent slopes	435						
		90	Kureb	Series	3.0	6.0	8.0
20—Lynn Haven sand	7,410						
		59	Lynn haven, hydric	Series	0.0	1.0	2.0
		30	Lynn haven, non-hydric	Series	0.0	1.0	2.0
21—Leefield sand, 0 to 2 percent slopes	764						
		85	Leefield	Series	0.0	1.0	2.0
22—Leon sand, 0 to 2 percent slopes	24,668						
		80	Leon	Series	0.0	1.0	2.0
23—Maurepas muck, frequently flooded	5,007						
		90	Maurepas	Series	0.0	0.5	1.0
24—Mandarin fine sand, 0 to 2 percent slopes	5,658						
		92	Mandarin	Series	0.0	1.0	2.0
26—Duckston sand, occasionally flooded	2,834						
		89	Duckston	Series	0.0	1.0	2.0
27—Pelham fine sand	4,968						
		50	Pelham, non-hydric	Series	0.0	1.0	2.0
		35	Pelham, hydric	Series	0.0	1.0	2.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
28—Plummer fine sand	27,176						
		65	Plummer, hydric	Series	0.0	1.0	2.0
		20	Plummer, non-hydric	Series	0.0	1.0	2.0
29—Resota fine sand, 0 to 5 percent slopes	5,229						
		90	Resota	Series	0.0	3.0	5.0
30—Rutlege loamy fine sand, depressiona	1,838						
		89	Rutlege, depressiona	Series	0.0	1.0	2.0
31—Rutlege fine sand, 0 to 2 percent slopes	36,805						
		92	Rutlege	Series	0.0	1.0	2.0
32—Sapelo fine sand	1,731						
		75	Sapelo, non-hydric	Series	0.0	1.0	2.0
		10	Sapelo, hydric	Series	0.0	1.0	2.0
33—Scranton fine sand, 0 to 2 percent slopes	50,717						
		84	Scranton	Series	0.0	1.0	2.0
34—Surrency fine sand	10,381						
		88	Surrency	Series	0.0	1.0	2.0
36—Pickney-Pamlico complex, depressiona	16,813						
		45	Pickney, depressiona	Series	0.0	0.5	1.0
		40	Pamlico, depressiona	Series	0.0	0.5	1.0
38—Meadowbrook sand	8,740						
		67	Meadowbrook, non-hydric	Series	0.0	1.0	2.0
		15	Meadowbrook, hydric	Series	0.0	1.0	2.0
39—Scranton sand, slough	29,191						
		88	Scranton, slough	Series	0.0	1.0	2.0
41—Pamlico-Pickney complex, 0 to 1 percent slopes, frequently flooded	8,255						
		50	Pamlico	Series	0.0	0.5	1.0
		35	Pickney	Series	0.0	0.5	1.0
42—Meadowbrook, Meggett, and Toolcs soils, frequently flooded	1,310						
		35	Meadowbrook	Series	0.0	0.5	1.0
		30	Meggett	Series	0.0	0.5	1.0
		22	Toolcs	Series	0.0	0.5	1.0

Component Legend--Franklin County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
43--Meadowbrook sand, slough	8,508						
		88	Meadowbrook, slough	Series	0.0	1.0	2.0
44--Tooles sand	1,455						
		65	Tooles, non-hydric	Series	0.0	1.0	1.0
		20	Tooles, hydric	Series	0.0	1.0	1.0
99--Water	902						
		100	Water	Miscellaneous area			
100--Waters of the Gulf of Mexico	15,000						
		100	Gulf of Mexico	Miscellaneous area			

Data Source Information

Soil Survey Area: Franklin County, Florida
 Survey Area Data: Version 13, Sep 28, 2016

Map Unit: 2—Albany fine sand: Occurs on ridges on marine terraces on coastal plains where slopes are 0 to 2 percent. 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 high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, December. 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.

Map Unit: 3—Beaches: Beaches consist of narrow strips of nearly-level land areas around the Gulf of Mexico and adjacent bays. They formed in deposits of mixed sand and shell fragments. Individual areas range from less than 100 to more than 300 feet in width. As much as half the beach can be flooded at high tide, and all the beach can be flooded by storm tides. Beaches typically consist of loose, fine sand ranging from gray to white or sand that contains various quantities of broken shells throughout. In most areas, the shell fragments are the size of sand grains, but in some areas, they are larger in some parts of the profile. Layers differ primarily in color or shell content. Some profiles appear uniform throughout. Soils are covered daily in saltwater, and are susceptible to movement by wind and tide. Many areas do not support vegetation, and remaining areas are sparsely vegetated with salt-tolerant plants. Beaches are not suitable for cultivation or use as woodlands.

Map Unit: 4—Dirego and Bayvi soils, tidal: This series is comprised of Dirego (50%) and Bayvi (40%) major soil components. Occurs on tidal marshes on marine terraces on coastal plains where slopes are 0 to 1 percent. 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 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 January through December. Non-irrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface.

Component: Dirego - The parent material consists of herbaceous organic material over sandy marine deposits. Organic matter content in the surface horizon is about 43 percent. The soil has a maximum sodium adsorption ratio of 40 within 30 inches of the soil surface.

Component: Bayvi - The parent material consists of sandy marine deposits. Organic matter content in the surface horizon is about 14 percent. The soil has a maximum sodium adsorption ratio of 60 within 30 inches of the soil surface.

Map Unit: 5—Aquents, nearly level: This series is comprised of Aquents non-hydric (50%) and Aquents hydric (50%) major soil components. Occurs on tidal marshes on marine terraces on coastal plains where slopes are 0 to 2 percent. The parent material consists of marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded.

Component: Aquents non-hydric - A seasonal zone of water saturation is at 21 inches during January, February, March, April, December. This soil does not meet hydric criteria.

Component: Aquents hydric - A seasonal zone of water saturation is at 3 inches during January, February, March, April, December. This soil meets hydric criteria.

Map Unit: 6—Blanton fine sand, 0 to 5 percent slopes: Occurs on ridges on marine terraces on coastal plains where slopes are 0 to 5 percent. 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 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 January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Non-irrigated 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.

Exhibit L

Department of Environmental Protection
Outstanding Florida Waters





Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

July 20, 2017

Mr. Alan L. Davis
Land Planning Coordinator
Florida Forest Service
Florida Department of Agriculture and Consumer Services
The Conner Building
3125 Conner Boulevard, Suite J-237
Tallahassee, Florida 32399-1650

RE: Tate's Hell State Forest

Dear Mr. Davis:

Thank you for your inquiry regarding the surface water quality classifications on and near Tate's Hell State Forest in Liberty and Franklin Counties. The site has portions that lie adjacent to several Outstanding Florida Waters (OFW) as follows: (1) the area in the East Bay area lies adjacent to the Apalachicola Bay Aquatic Preserve, designated as OFW under subparagraph 62-302.700(9)(h)2., Florida Administrative Code (FAC), and (2) parts of the eastern boundary of the site lie adjacent to the Ochlockonee River, designated as OFW under subparagraph 62-302.700(9)(i)23., FAC. Most of the surface waters on the site are classified as Class III waters (subparagraphs 62-302.400(17)(b)19. and 39., FAC), which is the statewide default classification. There are Class II waters in the East Bay area, as described in the rules above.

If you have any questions or need additional information, please feel free to contact me at the letterhead address (mail station 6511), by phone at 850/245-8429, or via E-mail at Eric.Shaw@dep.state.fl.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Shaw".

Eric Shaw
Environmental Manager
Water Quality Standards Program
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 6511
Tallahassee, FL 32399-2400
Phone: (850) 245-8429
Email: Eric.Shaw@dep.state.fl.us

Exhibit M

Water Resources

Exhibit N

Florida Natural Areas Inventory Managed Area Tracking Record



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-274-8207
fax 850-661-9364
www.fnai.org

August 9, 2017

Alan Davis
FDACS, Florida Forest Service
3125 Conner Boulevard
Tallahassee, FL 32399

Dear Mr. Davis,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project: Tate's Hell State Forest
Date Received: 8/7/2017
Location: Liberty and Franklin Counties

Based on the information available, this site appears to be located in a significant region of natural areas and habitat for several rare species. Special consideration should be taken to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

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. Additional consideration should be given to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

Element Occurrences

A search of our maps and database indicates that we currently have several element occurrences mapped in the vicinity of the study area (see managed area summary report). 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 (see table 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.

Tracking Florida's Biodiversity

Likely and Potential Rare Species

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

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

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

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

Land Acquisition Projects

This site appears to be located within the St. Joe Timberland - Tales Hell/Carrabelle Tract, and adjacent to the Dickerson Bay/Bald Point Florida Forever BOT Projects, which are part of the State of Florida's Conservation and Recreation Lands land acquisition program. A description of these projects can be found at http://www.dep.state.fl.us/lands/FFplan_county.htm. For more information on these Florida Forever Projects, contact the Florida Department of Environmental Protection, Division of State Lands.

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

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm 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. FNAI data may not be resold for profit.

This report is made available at no charge due to funding from the Florida Department of Environmental Protection, Division of State Lands.

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

Sincerely,

Tracking Florida's Biodiversity

Alan Davis

Page 3

August 9, 2017

Elyse Sachs

Elyse Sachs
GIS / Data Services

Encl

Tracking Florida's Biodiversity

Florida Natural Areas Inventory
Managed Area Element Summary
Tate's Hell State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS					
<i>Andropogon arctatus</i>	Pine-woods Bluestem	G3	S3	N	T
<i>Asclepias viridula</i>	Southern Milkweed	G2	S2	N	T
<i>Gentiana pennelliana</i>	Wiregrass Gentian	G3	S3	N	E
<i>Harperocallis flava</i>	Harper's Beauty	G1	S1	LE	E
<i>Hymenocallis henryae</i>	Panhandle Spiderlily	G2	S2	UR	E
<i>Ilex amelanchier</i>	Serviceberry Holly	G4	S2	N	T
<i>Justicia crassifolia</i>	Thick-leaved Water-willow	G3	S3	N	E
<i>Liatris provincialis</i>	Godfrey's Blazing Star	G2	S2	N	E
<i>Linum westii</i>	West's Flax	G1	S1	UR	E
<i>Lupinus westianus</i> var. <i>westianus</i>	Gulf Coast Lupine	G3T3	S3	RT	T
<i>Lythrum curtissii</i>	Curtiss' Loosestrife	G1	S1	UR	E
<i>Macbridea alba</i>	White Birds-in-a-nest	G2	S2	LT	E
<i>Myriophyllum laxum</i>	Piedmont Water Milfoil	G3	S3	N	N
<i>Nolina atopocarpa</i>	Florida Beargrass	G3	S3	N	T
<i>Nyssa ursina</i>	Bog Tupelo	G2	S2	RT	N
<i>Phoebanthus tenuifolius</i>	Narrow-leaved Phoebanthus	G3	S3	N	T
<i>Physostegia godfreyi</i>	Apalachicola Dragon-head	G3	S3	N	T
<i>Pinguicula ionantha</i>	Godfrey's Butterwort	G2	S2	LT	E
<i>Platanthera chapmanii</i>	Chapman's Fringed Orchid	G2	SNR	N	N
<i>Platanthera integra</i>	Yellow Fringeless Orchid	G3G4	S3	N	E
<i>Polygonella macrophylla</i>	Large-leaved Jointweed	G3	S3	N	T
<i>Rhexia parviflora</i>	Small-flowered Meadowbeauty	G2	S2	UR	E
<i>Ruellia noctiflora</i>	Nightflowering Wild Petunia	G3?	S2	N	E
<i>Scutellaria floridana</i>	Florida Skullcap	G2	S2	LT	E
AMPHIBIANS					
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S2	T	FT
REPTILES					
<i>Alligator mississippiensis</i>	American Alligator	G5	S4	SAT	FT(S/A)
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3Q	S3	LT	FT
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Lampropeltis getula</i>	Common Kingsnake	G5	S2S3	N	N
<i>Macrochelys apalachicola</i>	Apalachicola Alligator Snapping Turtle	G2G3	S2	N	SSC
<i>Pseudemys concinna suwanniensis</i>	Suwannee Cooter	G5T3	S3	N	N
BIRDS					
<i>Egretta caerulea</i>	Little Blue Heron	G5	S4	N	ST
<i>Egretta thula</i>	Snowy Egret	G5	S3	N	N
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	RT	N
<i>Pandion haliaetus</i>	Osprey	G5	S3S4	N	SSC*
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S2	LE	FE
MAMMALS					
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N

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



FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory
Managed Area Element Summary
Tate's Hell State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
MAMMALS (cont.)					
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	RT	N
INVERTEBRATES					
<i>Anodonta heardi</i>	Apalachicola Floater	G2	S1S2	RT	N
<i>Quadrula infucata</i>	Sculptured Pigtoe	G3	S2S3	N	N

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



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Managed Area Element Summary

Tate's Hell State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State 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).
- GNRTR = 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

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



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-9207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Managed Area Element Summary

Tate's Hell State Forest



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.
LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.
LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
LE, PDL = Species currently listed endangered but has been proposed for delisting.
LE, PT = Species currently listed endangered but has been proposed for listing as threatened.
LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
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.

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
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 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. (ST* for *Ursus americanus floridanus* (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for *Neovison vison* pop.1 (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)
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* indicates that a species has SSC status only in selected portions of its range in Florida. 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/>.

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



Florida Natural Areas Inventory
Managed Area Element Summary
Tate's Hell State Forest



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.

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

Florida Natural Areas Inventory
Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Documented					
<i>Alligator mississippiensis</i>	American Alligator	G5	S4	SAT	FT(S/A)
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S2	LT	FT
<i>Andropogon arctatus</i>	Pine-woods Bluestem	G3	S3	N	T
<i>Anodonta heardi</i>	Apalachicola Floater	G2	S1S2	N	N
<i>Asclepias viridula</i>	Southern Milkweed		S2	N	T
Basin swamp		G4	S3	N	N
Bottomland forest			S3	N	N
<i>Calophrys hesseli</i>	Hessel's Hairstreak	G3G4	S2	N	N
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	G2G3	S2S3	N	T
Dome swamp		G4	S4	N	N
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Euphorbia telephoides</i>	Telephus Spurge	G1	S1	LT	E
<i>Gentiana pennelliana</i>	Wiregrass Gentian	G3	S3	N	E
<i>Gopherus polyphemus</i>	Gopher Tortoise		S3	C	ST
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Harperocallis flava</i>	Harper's Beauty	G1	S1	LE	E
<i>Hymenocallis henryae</i>	Panhandle Spiderlily	G2	S2	N	E
<i>Ilex amelanchier</i>	Serviceberry Holly	G4	S2	N	T
<i>Justicia crassifolia</i>	Thick-leaved Water-willow	G3	S3	N	E
<i>Lampropeltis getula</i>	Common Kingsnake	G5	S2S3	N	N
<i>Liatris provincialis</i>	Godfrey's Blazing Star	G2	S2	N	E
<i>Linum westii</i>	West's Flax	G1	S1	N	E
<i>Lupinus westianus</i> var. <i>westianus</i>	Gulf Coast Lupine	G3T3	S3	N	T
<i>Lythrum curtissii</i>	Curtiss' Loosestrife	G1	S1	N	E
<i>Macbridea alba</i>	White Birds-in-a-nest	G2	S2	LT	E
<i>Macranthera flammea</i>	Hummingbird Flower	G3	S2	N	E
<i>Macrochelys apalachicola</i>	Apalachicola Alligator Snapping Turtle	G2G3	S2	N	SSC
Mesic flatwoods		G4	S4	N	N
<i>Myriophyllum laxum</i>	Piedmont Water Milfoil	G3	S3	N	N
<i>Nolina atopocarpa</i>	Florida Beargrass		S3	N	T
<i>Nyssa ursina</i>	Bog Tupelo	G2	S2	N	N
<i>Pandion haliaetus</i>	Osprey	G5	S3S4	N	SSC*
<i>Parnassia grandifolia</i>	Large-leaved Grass-of-parnassus	G3	S2	N	E
<i>Peucaea aestivalis</i>	Bachman's Sparrow		S3	N	N
<i>Phoebanthus tenuifolius</i>	Narrow-leaved Phoebanthus		S3	N	T
<i>Physostegia godfreyi</i>	Apalachicola Dragon-head		S3	N	T
<i>Pinguicula ionantha</i>	Godfrey's Butterwort	G2	S2	LT	E
<i>Platanthera chapmanii</i>	Chapman's Fringed Orchid		SNR	N	N
<i>Polygonella macrophylla</i>	Large-leaved Jointweed	G3	S3	N	T
<i>Pseudemys concinna suwanniensis</i>	Suwannee Cooter	G5T3	S3	N	N
<i>Quadrula infucata</i>	Sculptured Pigtoe	G3	S2S3	N	N
<i>Rhexia parviflora</i>	Small-flowered Meadowbeauty	G2	S2	N	E
<i>Ruellia noctiflora</i>	Nightflowering Wild Petunia	G37	S2	N	E
Sandhill		G3	S2	N	N
Scrub		G2	S2	N	N
<i>Scutellaria floridana</i>	Florida Skullcap		S2	LT	E
Upland hardwood forest		G5	S3	N	N
Wet flatwoods		G4	S4	N	N
Wet prairie		G2	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.

Florida Natural Areas Inventory
Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Documented-Historic					
<i>Nerodia clarkii clarkii</i>	Gulf Salt Marsh Snake	G4T3	S2	N	N
<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S2	LE	FE
<i>Pityopsis flexuosa</i>	Zigzag Silkgrass		S3	N	E
<i>Platanthera integra</i>	Yellow Fringeless Orchid	G3G4	S3	N	E
Likely					
<i>Acipenser oxyrinchus desotoi</i>	Gulf Sturgeon	G3T2	S2	LT	FT
<i>Amblema neisleri</i>	Fat Threeridge	G1	S1	LE	FE
<i>Anthocharis midea</i>	Falcate Orangetip	G4G5	SH	N	N
<i>Caretta caretta</i>	Loggerhead Sea Turtle	G3	S3	LT	FT
<i>Charadrius melodus</i>	Piping Plover		S2	LT	FT
<i>Charadrius nivosus</i>	Snowy Plover		S1	N	ST
<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G4	S3	N	N
<i>Elliptio purpurella</i>	Inflated Spike	G2	S2	UR	N
<i>Elliptioideus sloaliansus</i>	Purple Bankclimber		S1S2	LT	FT
<i>Haematopus palliatus</i>	American Oystercatcher	G5	S2	N	ST
<i>Megalonychia nervosa</i>	Washboard		S3	N	N
<i>Mycteria americana</i>	Wood Stork	G4	S2	LT	FT
<i>Pseudemys nelsoni</i> pop. 1	Florida Red-bellied Turtle, Panhandle	G5T2Q	S2	UR	N
Sandhill upland lake		G3	S2	N	N
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Sternula antillarum</i>	Least Tern	G4	S3	N	ST
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	N	N
<i>Xyris scabrifolia</i>	Harper's Yellow-eyed Grass	G3	S3	N	T
Potential					
<i>Agrimonia incisa</i>	Incised Groove-bur	G3	S2	N	T
<i>Ameiurus serracanthus</i>	Spotted Bullhead		S3	N	N
<i>Ammodramus maritimus peninsulæ</i>	Scott's Seaside Sparrow	G4T3Q	S3	N	ST
<i>Amphiuma pholeter</i>	One-toed Amphiuma	G3	S3	N	N
<i>Amoglossum diversifolium</i>	Variable-leaved Indian-plantain	G2	S2	N	T
<i>Athene cucularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Calamintha dentata</i>	Toothed Savory	G3	S3	N	T
<i>Chelonia mydas</i>	Green Sea Turtle		S2S3	LT	FT
<i>Cistothorus palustris marianæ</i>	Marian's Marsh Wren	G5T3	S3	N	ST
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S2	N	N
<i>Cyprinella callitaenia</i>	Bluestripe Shiner	G2G3	S2	N	N
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	G2	S2	LE	FE
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3Q	S3	LT	FT
<i>Egretta caerulea</i>	Little Blue Heron	G5	S4	N	ST
<i>Egretta thula</i>	Snowy Egret		S3	N	N
<i>Falco columbarius</i>	Merlin		S2	N	N
<i>Falco peregrinus</i>	Peregrine Falcon	G4	S2	N	N
<i>Graptemys barbouri</i>	Barbour's Map Turtle	G2	S2	N	ST
<i>Helianthus debilis</i> ssp. <i>tardiflorus</i>	Late Flowering Beach Sunflower	G5T3	S3	N	N
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2	N	N
<i>Lachnocaulon digynum</i>	Bog Button	G3	S3	N	T
<i>Leitneria floridana</i>	Corkwood		S3	N	T
<i>Magnolia ashei</i>	Ashe's Magnolia	G2	S2	N	E
<i>Micropterus notius</i>	Suwannee Bass	G3	S3	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.



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Moxostoma</i> sp. 1	Apalachicola Redhorse	G3	S2	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat		S3	N	N
<i>Neovison vison halilimnetes</i>	Gulf Salt Marsh Mink	G5T3	S3	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	C	N
<i>Nuphar advena</i> ssp. <i>ulvacea</i>	West Florida Cowli	G5T2	S2	N	N
<i>Oxypolis greenmanii</i>	Giant Water-dropwort	G3	S3	N	E
<i>Panicum nudicaule</i>	Naked-stemmed Panicgrass	G3Q	S3	N	T
<i>Parnassia caroliniana</i>	Carolina Grass-of-parmassus	G3	S2	N	E
<i>Phyllanthus liebmannianus</i> ssp. <i>platylepis</i>	Pinewoods Dainties	G4T2	S2	N	E
<i>Pinguicula pnmuliflora</i>	Primrose-flowered Butterwort	G3G4	S3	N	E
<i>Plestiodon anthracinus</i>	Coal Skink	G5	S3	N	N
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Rallus longirostris scottii</i>	Florida Clapper Rail	G5T3?	S3?	N	N
<i>Rhexia salicifolia</i>	Panhandle Meadowbeauty	G2	S2	N	T
<i>Rhododendron austrinum</i>	Florida Flame Azalea	G3	S3	N	E
<i>Rhododendron chapmanii</i>	Chapman's Rhododendron	G1	S1	LE	E
<i>Rhynchospora crinipes</i>	Hairy-peduncled Beaksedge	G2G3	S2	N	E
<i>Rhynchospora thornei</i>	Thorne's Beaksedge	G3	S1S2	N	N
<i>Rudbeckia nitida</i>	St. John's Blackeyed Susan		S2	N	E
<i>Stachydeoma graveolens</i>	Mock Pennyroyal	G2G3	S2S3	N	E
<i>Torreya taxifolia</i>	Florida Torreya	G1	S1	LE	E
<i>Trichechus manatus</i>	West Indian Manatee	G2	S2	LE, PT	FE
<i>Xyris stricta</i> var. <i>obscura</i>	Kral's Yellow-eyed Grass	G3	S1	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.

Exhibit O

Florida Fish and Wildlife Conservation Commission Response



**Florida Fish
and Wildlife
Conservation
Commission**

Commissioners

Brian Yablonski
Chairman
Tallahassee

Aliese P. "Liesa" Priddy
Vice Chairman
Immokalee

Ronald M. Bergeron
Fort Lauderdale

Richard Hanas
Oviedo

Bo Rivard
Panama City

Charles W. Roberts III
Tallahassee

Robert A. Spottswood
Key West

Executive Staff

Nick Wiley
Executive Director

Eric Sutton
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

**Fish and Wildlife
Research Institute**
Gil McRae
Director

(727) 896-8626
(727) 823-0166 FAX

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

**Fish and Wildlife
Research Institute**
100 Eighth Avenue SE
St. Petersburg, Florida
33701-6020
Voice: (727) 896-8626
Fax: (727) 823-0166
Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com/Research

8/01/2017

Alan L. Davis
Land Planning Coordinator
Florida Forest Service
3125 Conner Boulevard
Tallahassee, FL
32399

Dear Alan Davis:

This letter is in response to your request for listed species occurrence records and critical habitats, Strategic Habitat Conservation Areas (SHCA's), on the following properties: Peace River, Newnans Lake SF, Ross Prairie SF, Matanzas SF, Jennings SF, Tate's Hell SF, and Picayune Strand SF. The Florida Fish and Wildlife Conservation Commission's database indicates that SHCA's for swallow-tailed kite and Cooper's hawk occur in Newnans Lake. SHCA's for Cooper's hawk, scrubjay, and swallow-tailed kite occur in Peace River. SHCA's for the Florida black bear and the striped newt occur in Jennings SF. Enclosed are 8.5 x 11 maps showing prioritized SHCA's, priority wetlands, and species locations for all projects.

**** Please note:** the SHCAs were developed for the purpose of identifying new areas that may eventually be managed for species conservation. Many public lands were expressly removed from the models and this is why some sites, or portions of sites, have no SHCA. Therefore on maps where there is no visual representation of a SHCA there is a strong possibility that our models would have designated these locations as SHCA had they not already been designated as public or protected lands.

This letter and/or 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. Please note that our database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species, such as gopher

tortoises, are not entered into our database on a site-specific basis.
Therefore, one should not assume that an absence of occurrences in our database indicates that species of significance do not occur in the area.

If you have any questions or further requests, please contact me at (850) 488-0588 or gisrequests@myfwc.com

Sincerely,

Eva Salinas

Eva Salinas
Research Assistant

2017_6219
Enclosures



Tate's Hell State Forest



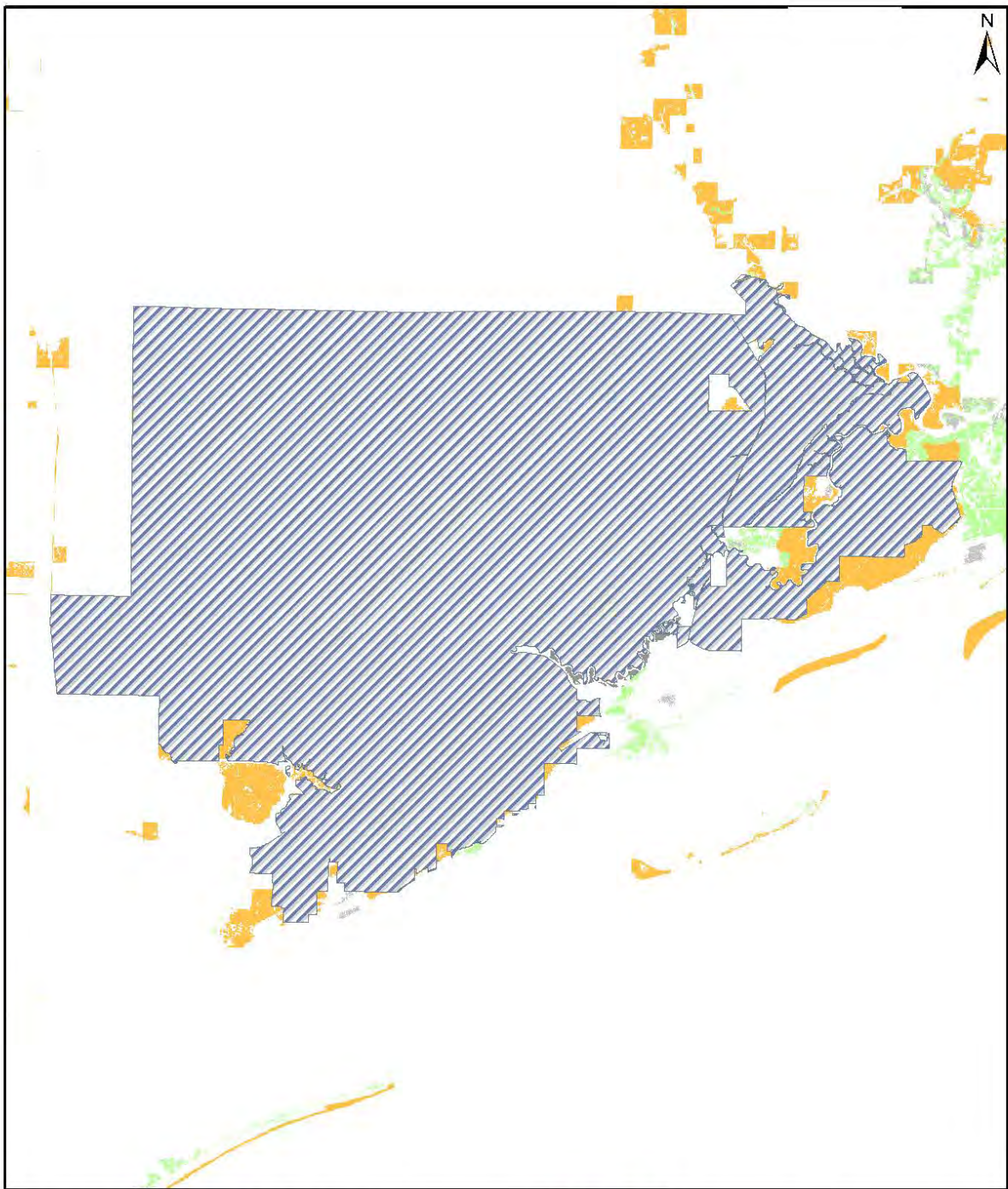
Priority Wetlands

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

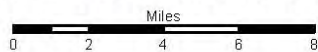


Florida Fish and Wildlife
Conservation Commission
MyFWC.com

FWC ID: 2017_6219 August 1, 2017



Tate's Hell State Forest

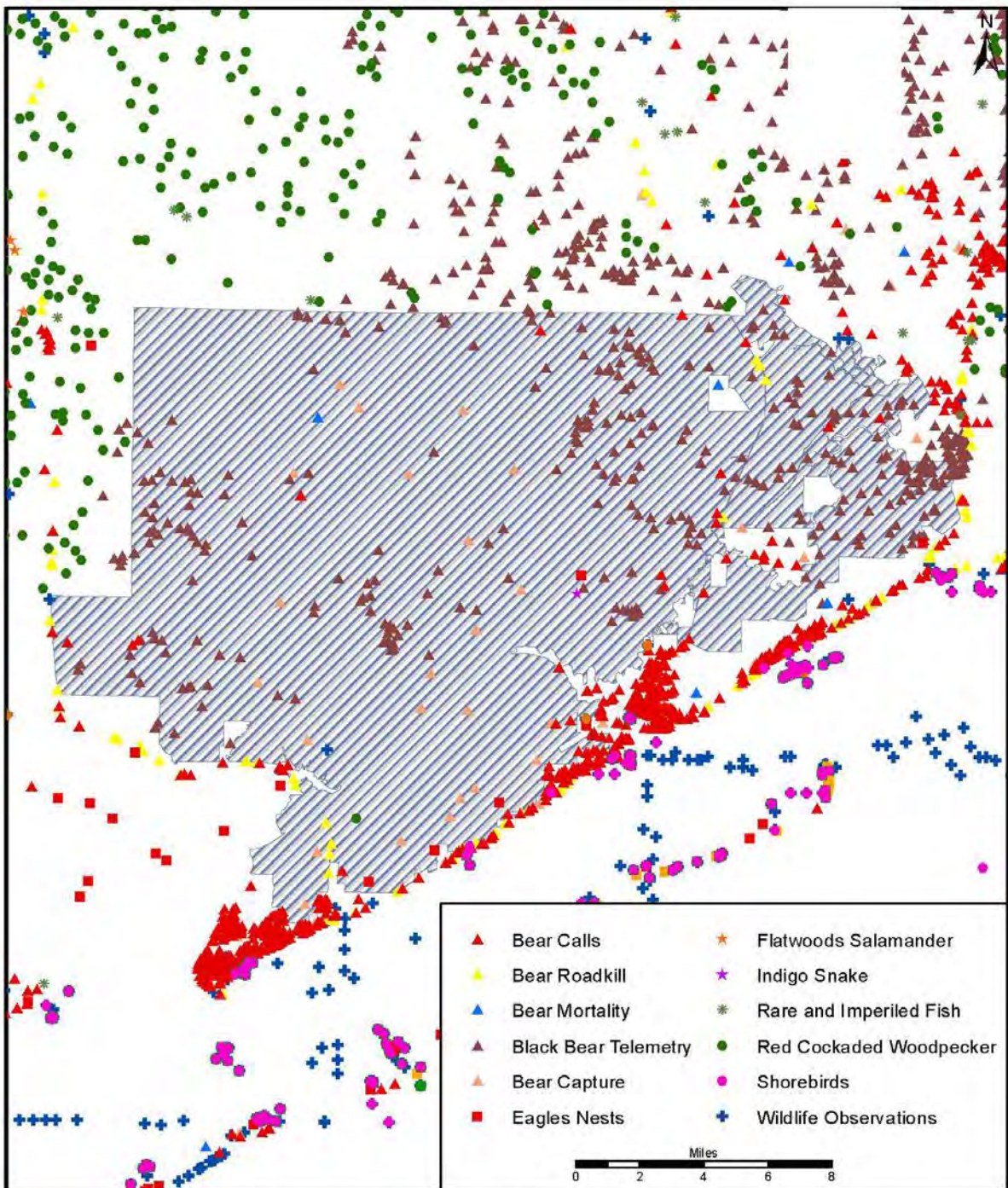


Prioritized SHCA's



Florida Fish and Wildlife
Conservation Commission
MyFWC.com

FWC ID: 2017_6219 August 1, 2017



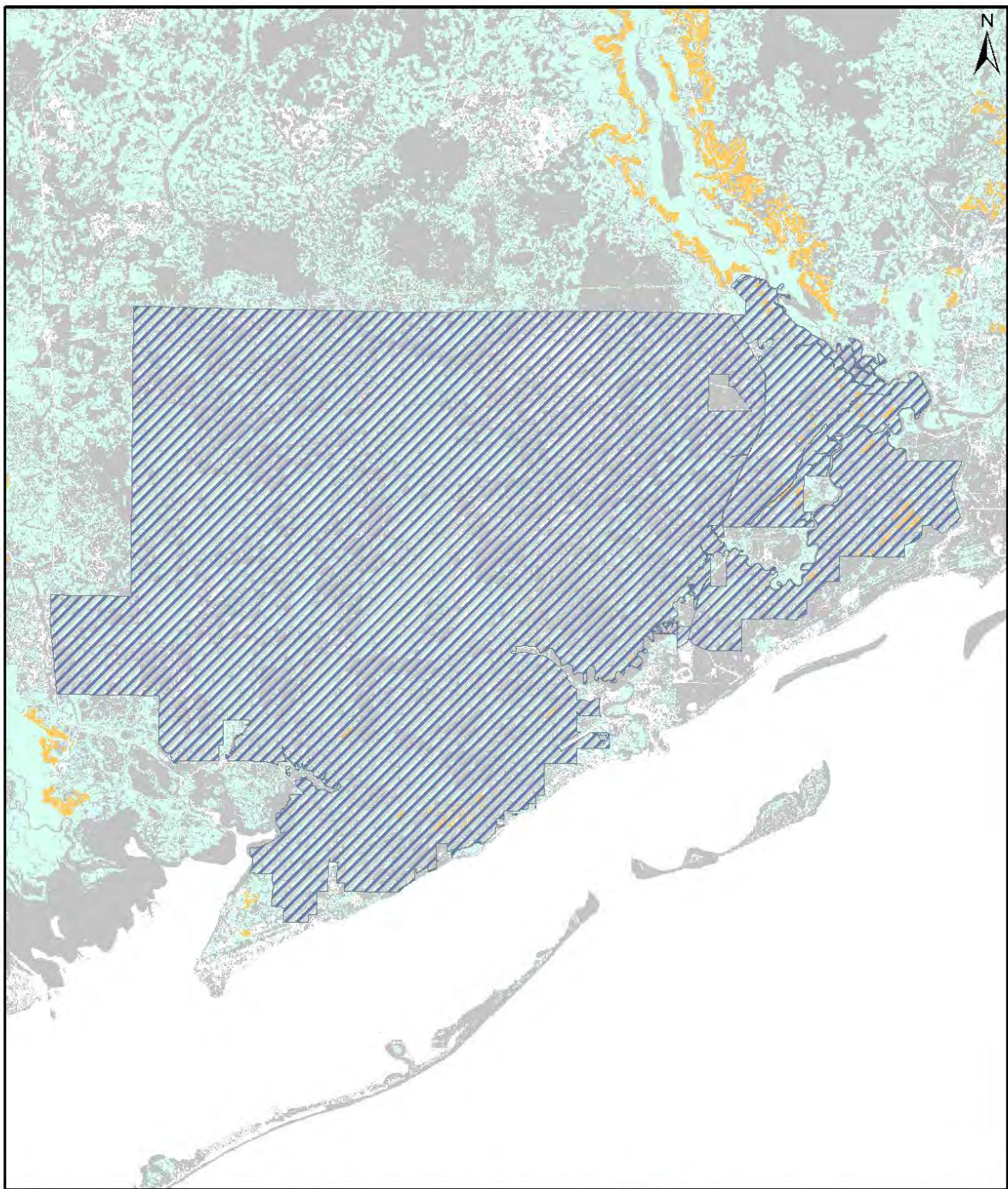
Tate's Hell State Forest

Florida Fish and Wildlife Species Locations

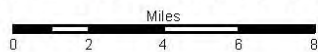


Florida Fish and Wildlife
Conservation Commission
MyFWC.com

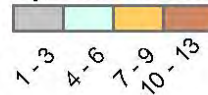
FWC ID: 2017_6219 August 8, 2017



Tate's Hell State Forest



Species Richness



Florida Fish and Wildlife
Conservation Commission
MyFWC.com

FWC ID: 2017_6219 August 1, 2017

Exhibit P

Fire History

THSF State Forest Burn Acres by FY

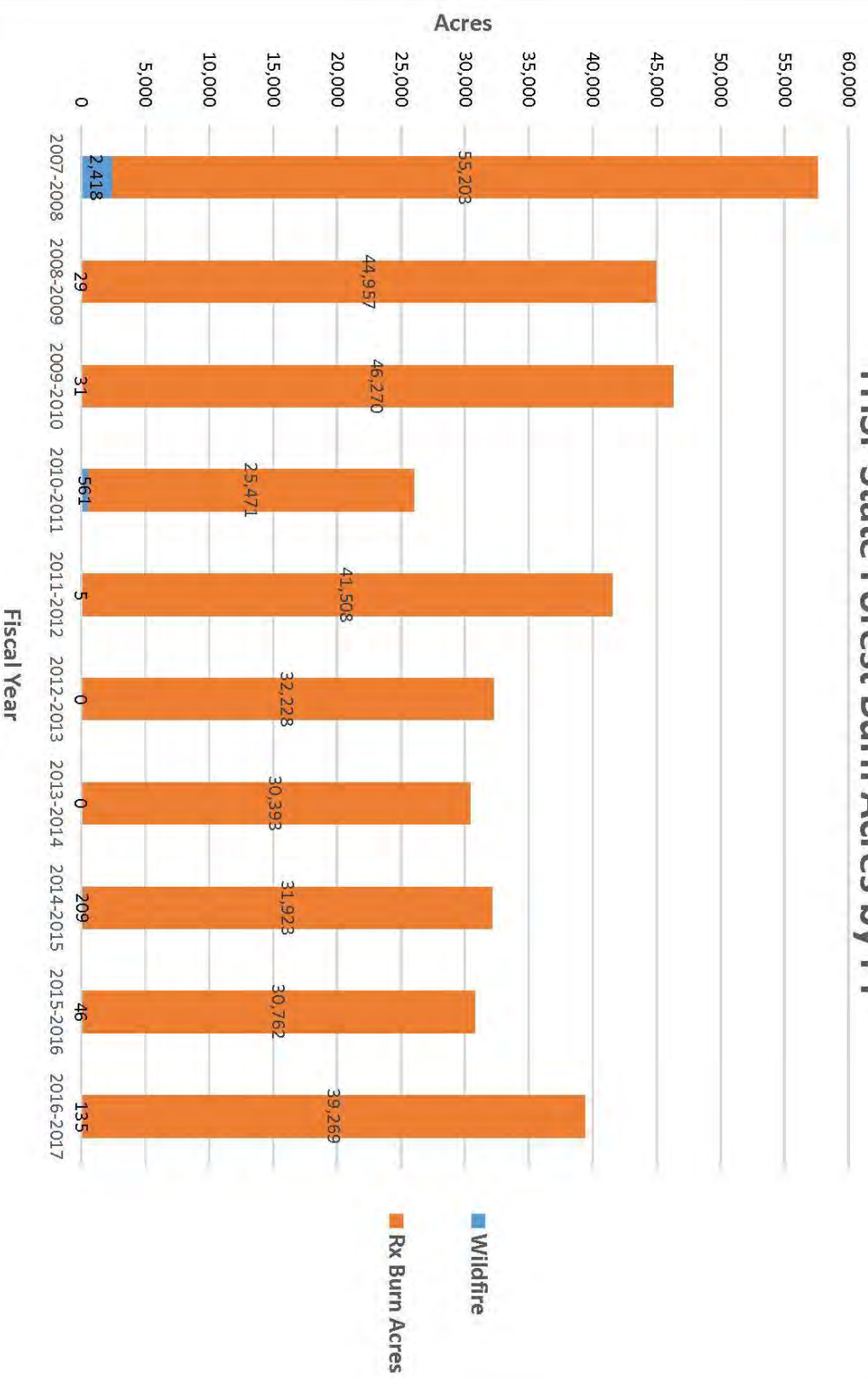


Exhibit Q

Non-Native Invasive Species

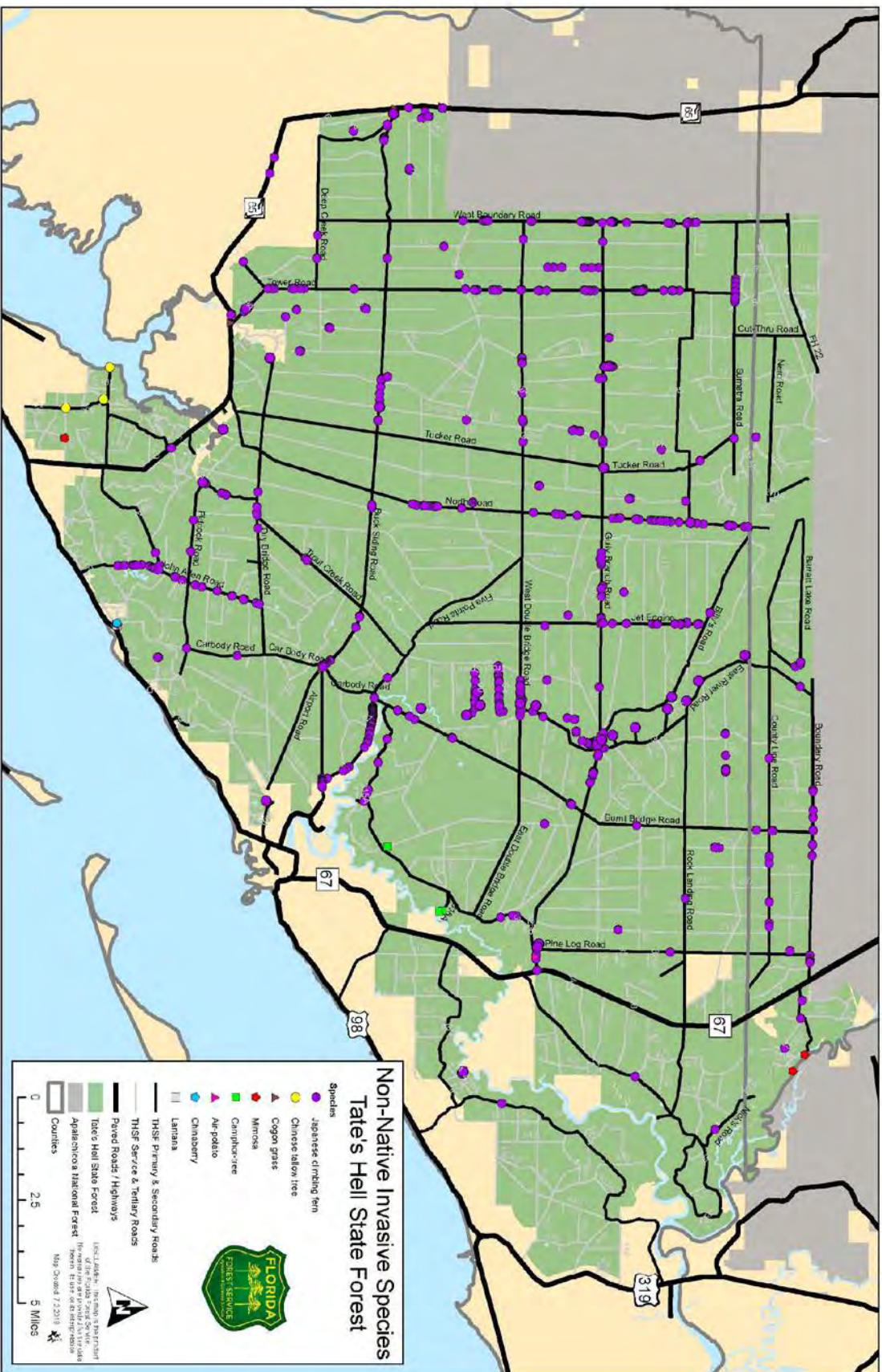
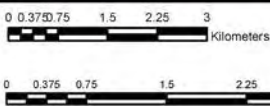
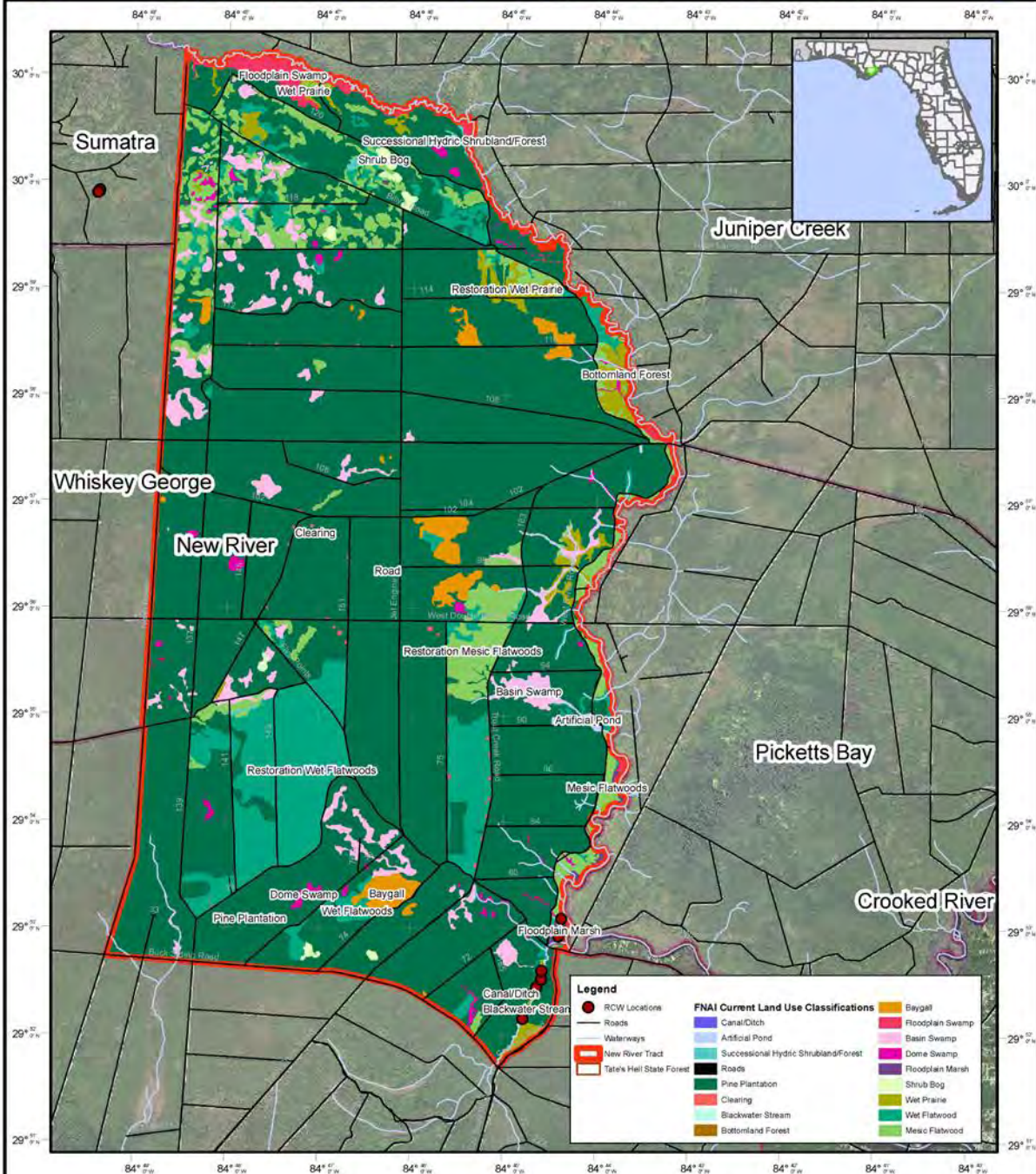


Exhibit R

Current Natural Communities



TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, NEW RIVER TRACT

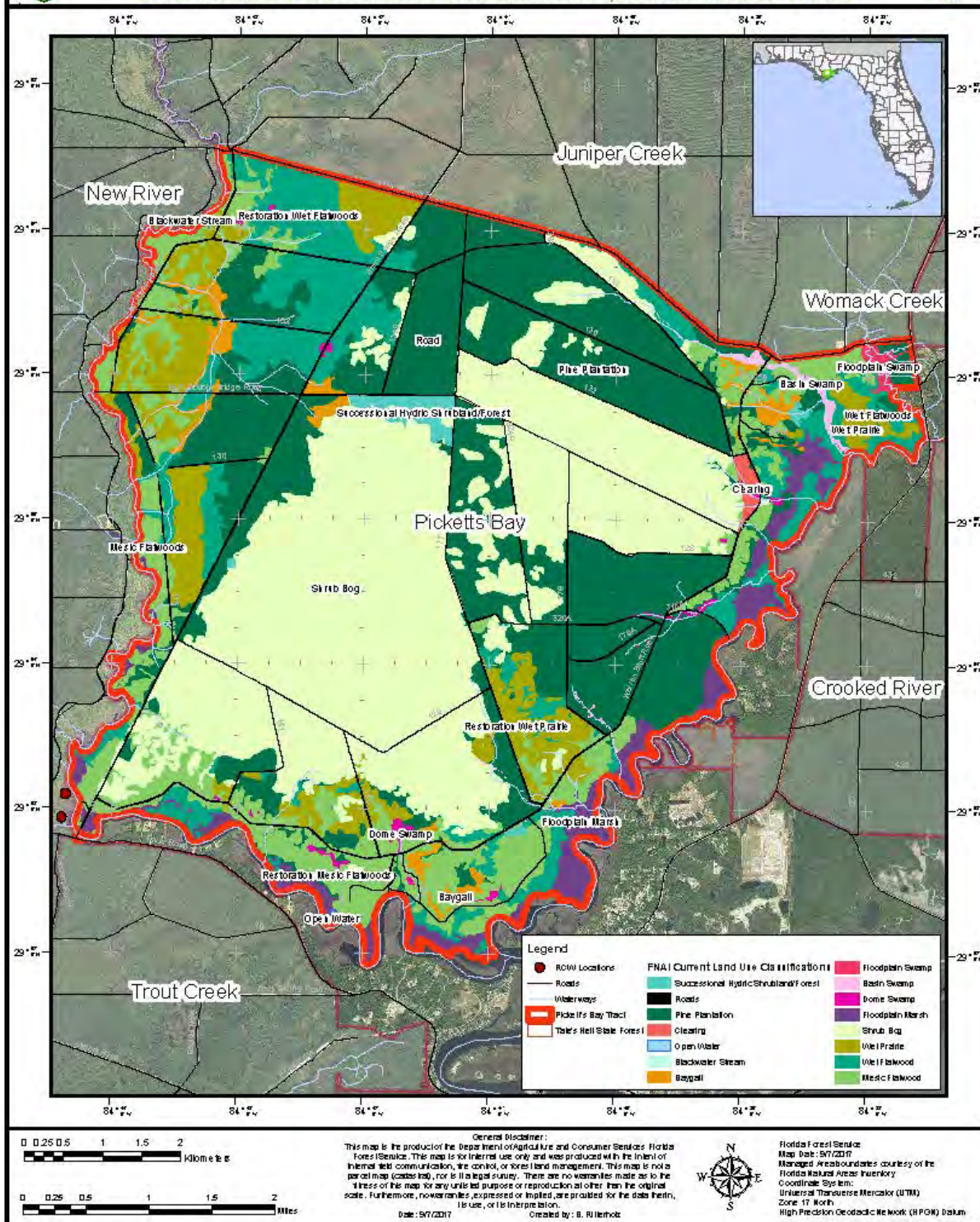


General Disclaimer:
This map is the product of the Department of Agriculture and Consumer Services Florida Forest Service. This map is for internal use only and was produced with the intent of internal field communication, fire control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction at other than the original scale. Furthermore, no warranties, expressed or implied, are provided for the data therein, its use, or its interpretation.

Date: 9/7/2017 Created by: B. Ritterholz



Florida Forest Service
Map Date: 9/7/2017
Managed Area boundaries courtesy of the
Florida Natural Areas Inventory
Coordinate System:
Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum

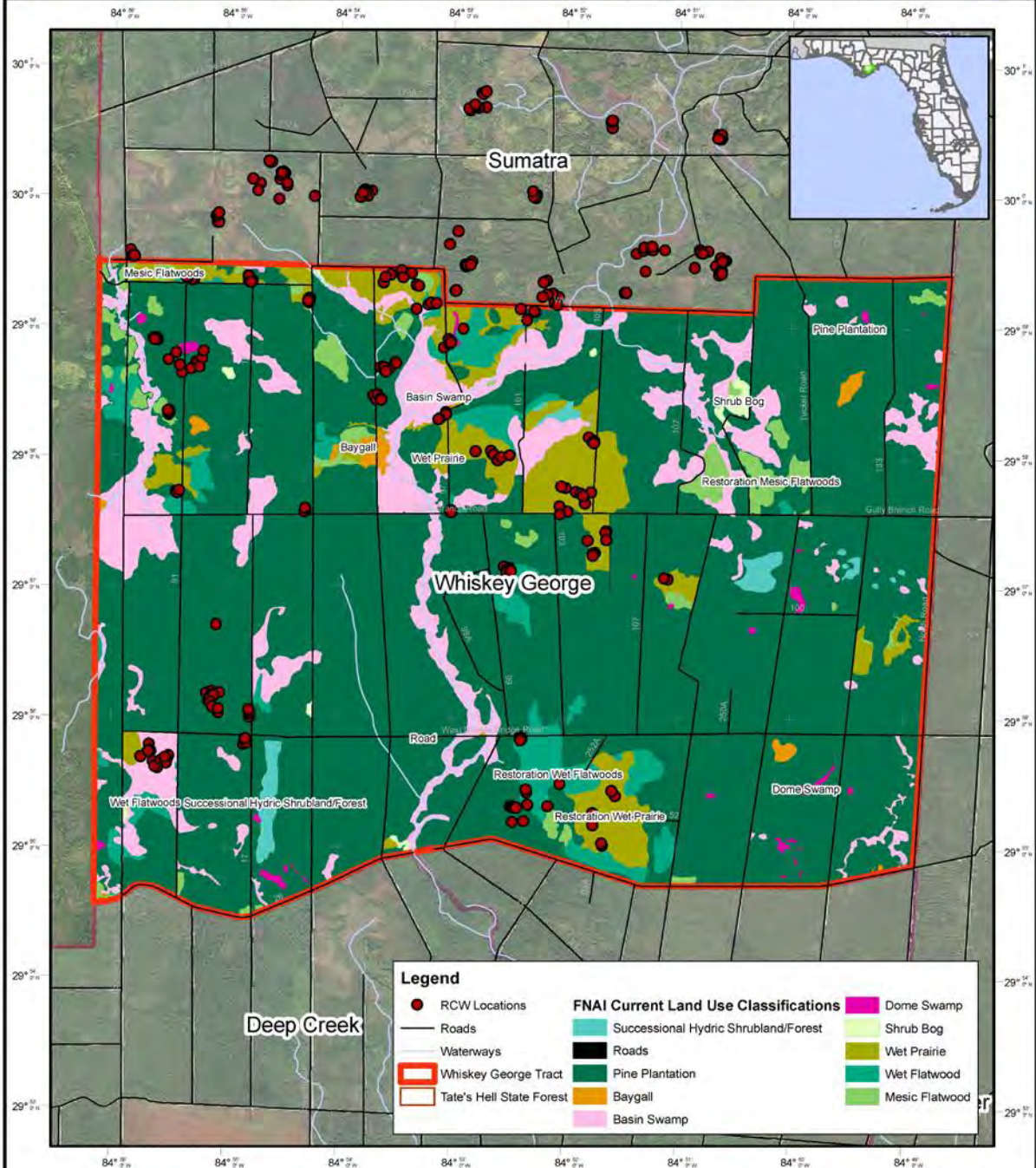








TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, WHISKEY GEORGE TRACT



Legend

● RCW Locations

— Roads

— Waterways

Whiskey George Tract

Tate's Hell State Forest

FNAI Current Land Use Classifications

Successional Hydric Shrubland/Forest

Roads

Pine Plantation

Baygall

Basin Swamp

Dome Swamp

Shrub Bog

Wet Prairie

Wet Flatwood

Mesic Flatwood

0 0.250.5 1 1.5 2
Kilometers

0 0.25 0.5 1 1.5 2
Miles

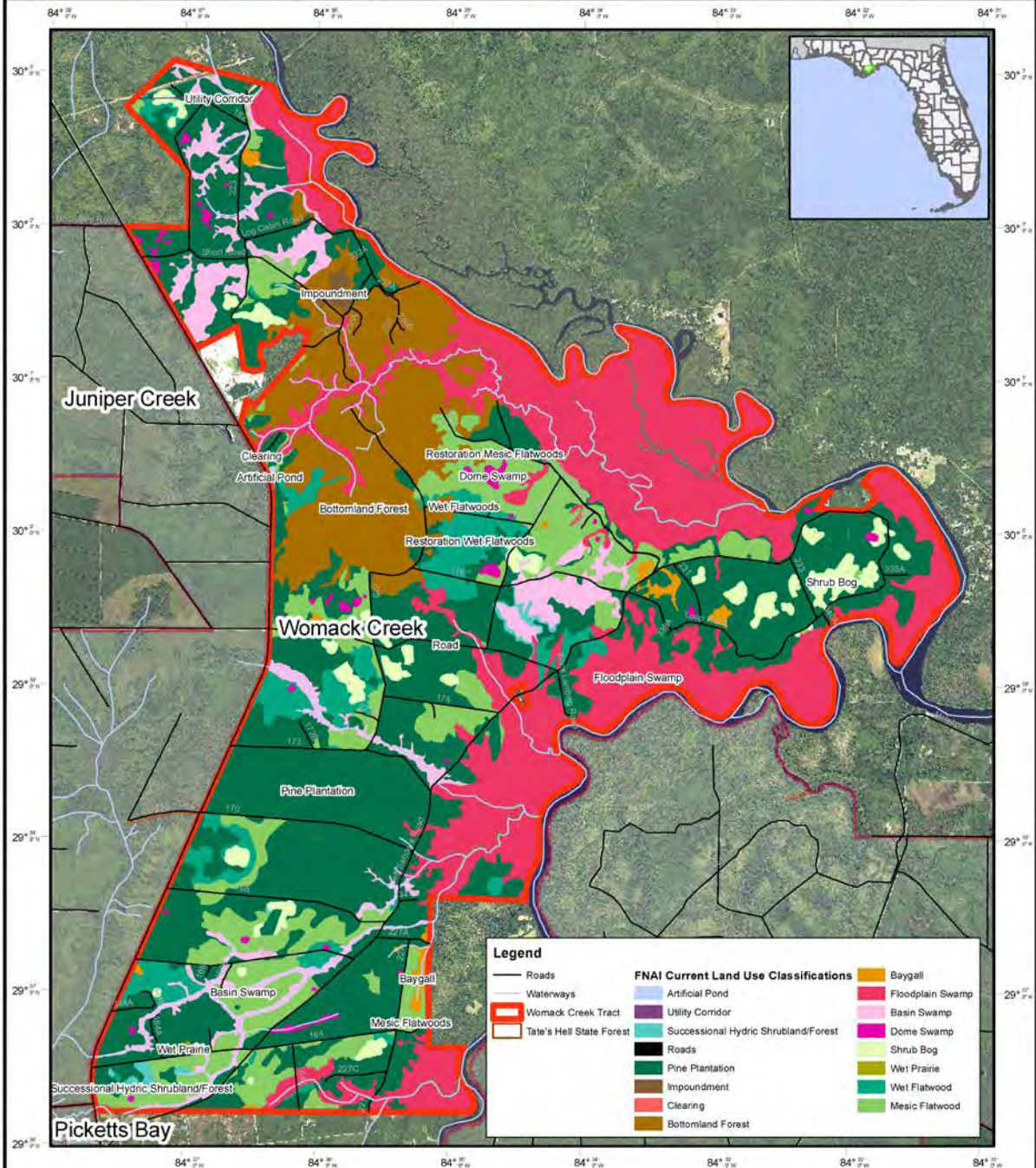
General Disclaimer:
This map is the product of the Department of Agriculture and Consumer Services Florida Forest Service. This map is for internal use only and was produced with the intent of internal field communication, fire control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction at other than the original scale. Furthermore, no warranties, expressed or implied, are provided for the data therein, its use, or its interpretation.
Date: 9/7/2017 Created by: B. Ritterholtz



Florida Forest Service
Map Date: 9/7/2017
Managed Area boundaries courtesy of the Florida Natural Areas Inventory
Coordinate System:
Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum



TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, WOMACK CREEK TRACT



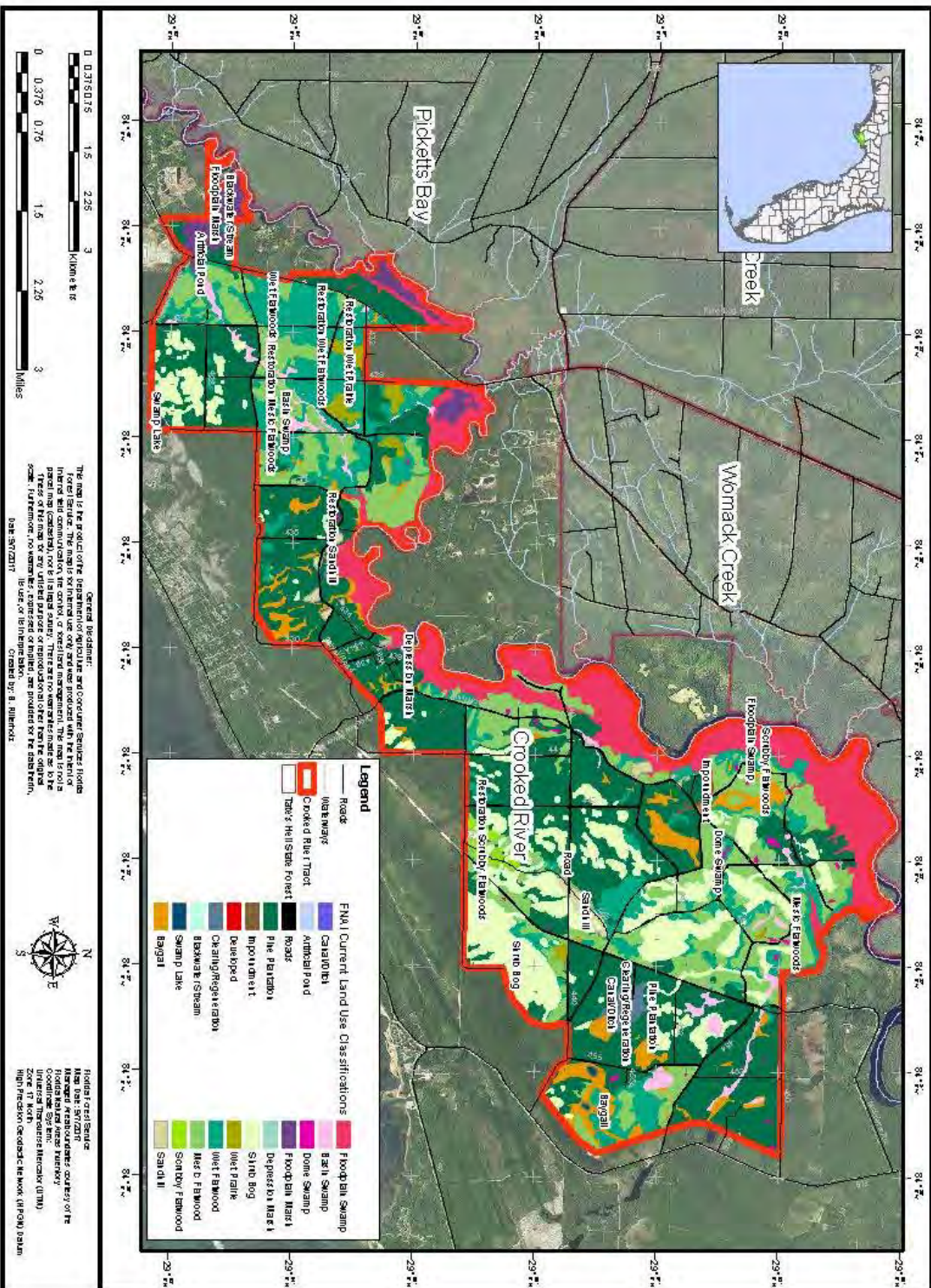
0 0.25 0.5 1 1.5 2
Kilometers

0 0.25 0.5 1 1.5 2
Miles

General Disclaimer:
This map is the product of the Department of Agriculture and Consumer Services Florida Forest Service. This map is for internal use only and was produced with the intent of internal field communication, fire control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction at other than the original scale. Furthermore, no warranties, expressed or implied, are provided for the data therein, its use, or its interpretation.
Date: 9/7/2017 Created by: B. Ritterholz

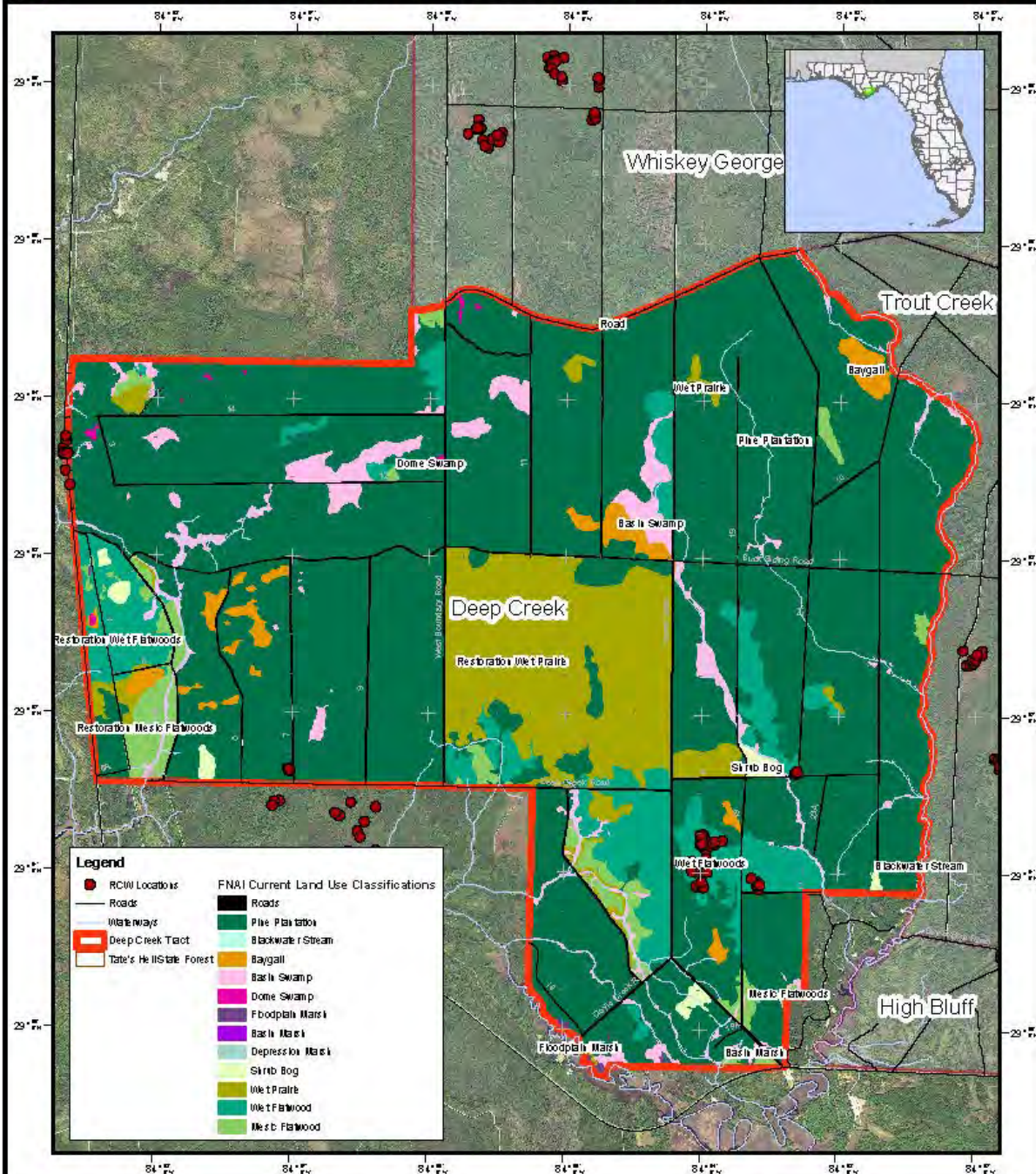


Florida Forest Service
Map Date: 9/7/2017
Managed Area boundaries courtesy of the
Florida Natural Areas Inventory
Coordinate System:
Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum





TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, DEEP CREEK TRACT



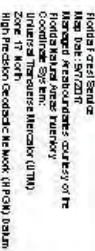
0 0.25 0.5 1 1.5 2
Kilometers

0 0.25 0.5 1 1.5 2
Miles

General Disclaimer:
This map is the product of the Department of Agriculture and Consumer Services Florida Forest Service. This map is for internal use only and was produced with the intent of internal staff communication, the control, or forest land management. This map is not a parcel map (cadastral), nor is it a legal survey. There are no warranties made as to the fitness of this map for any unlisted purpose or reproduction other than the original scale. Furthermore, no warranties, expressed or implied, are provided for the data herein, its use, or its interpretation.
Date: 5/7/2017 Created by: S. R. Retholtz



Florida Forest Service
Map Date: 5/7/2017
Managed Area boundaries courtesy of the Florida Natural Areas Inventory
Coordinate System:
Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) datum





TATES HELL STATE FOREST - FFS DISTRICT 4:
FINAL CURRENT LAND CLASSIFICATIONS, JUNIPER CREEK TRACT

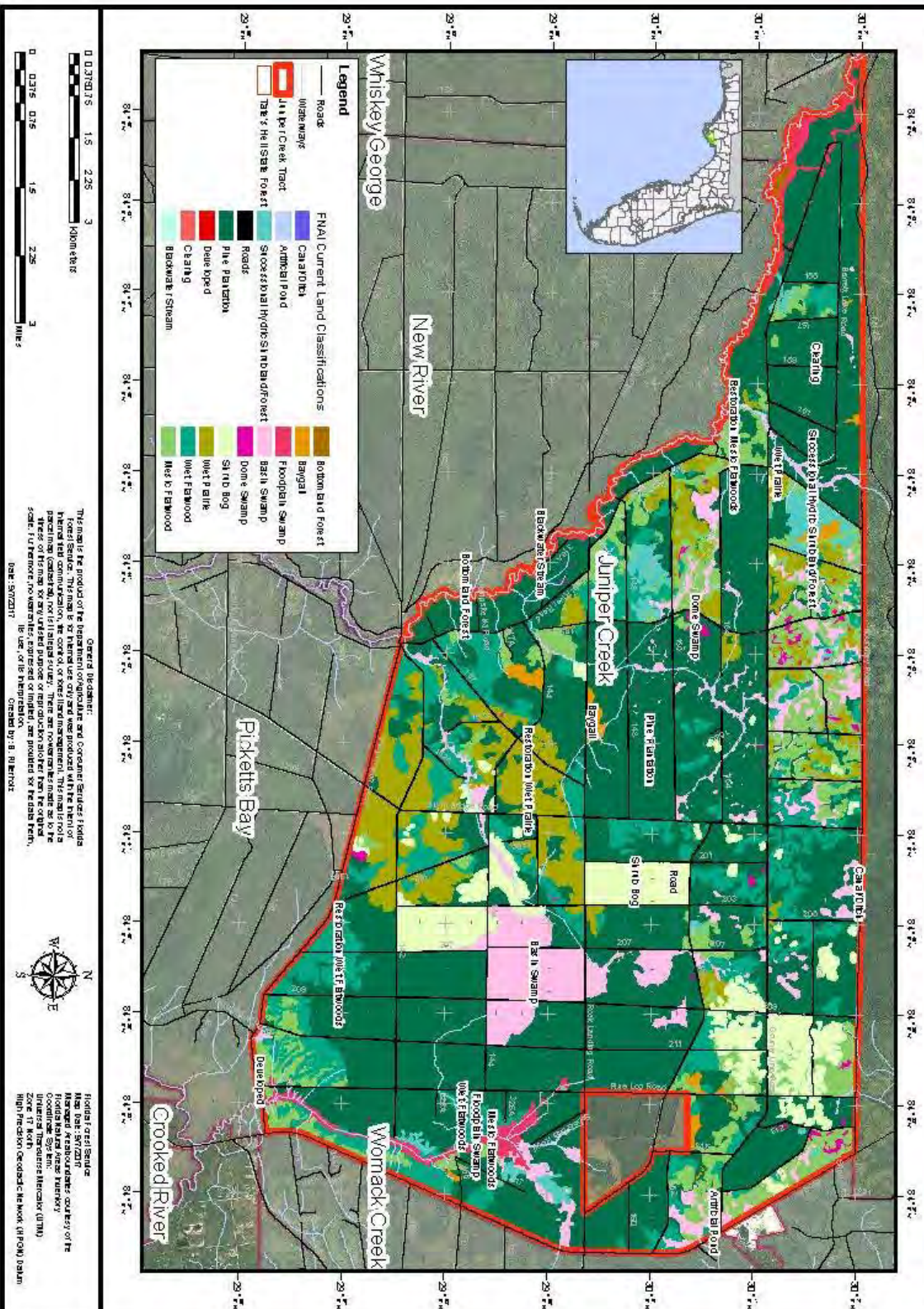
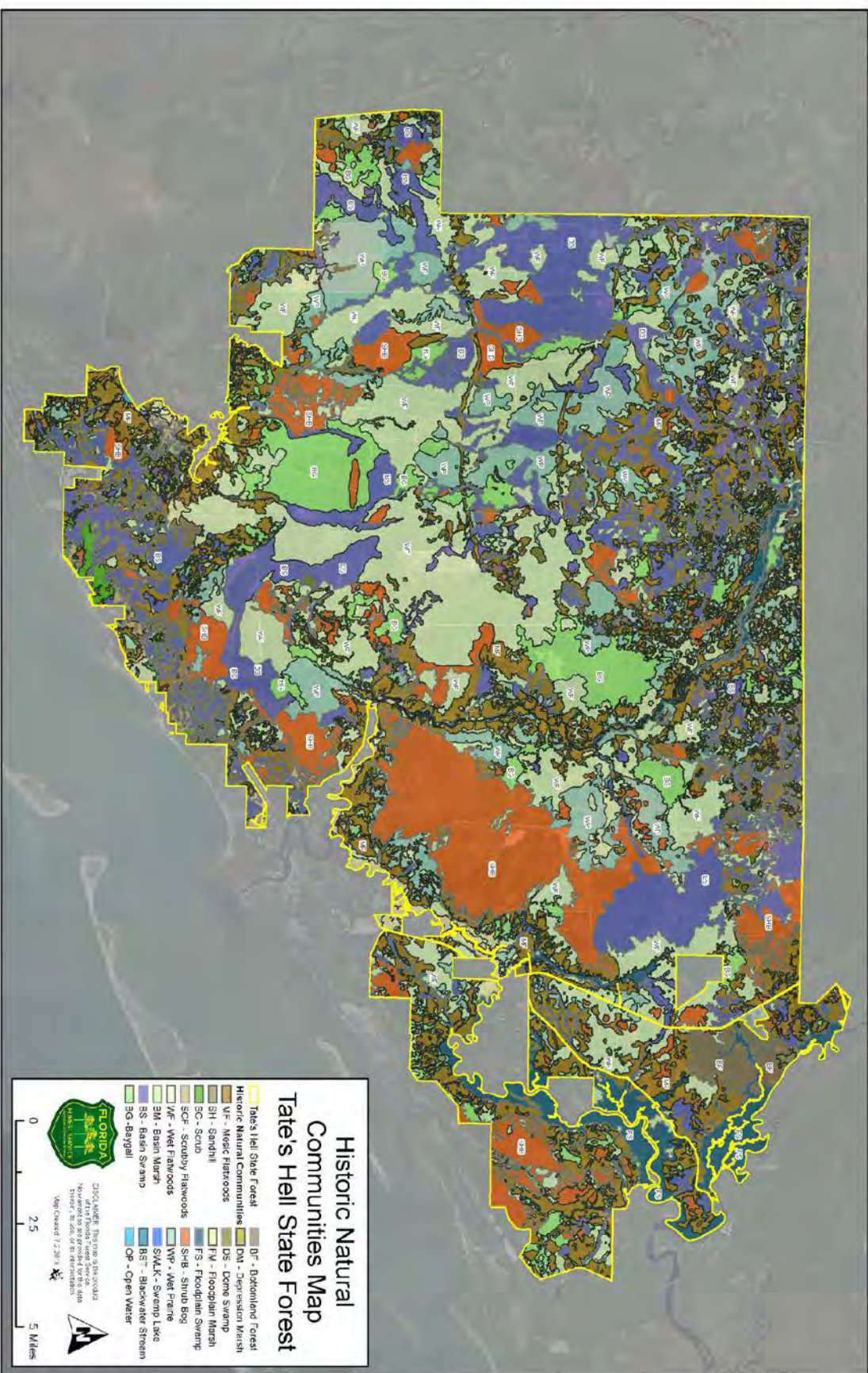


Exhibit S

Historic Natural Communities



Historic Natural Communities Map Tate's Hell State Forest

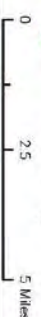
- Tate's Hell State Forest
- Historic Natural Communities
- UF - Mesic Flatwoods
- SH - Sandhill
- SC - Scrub
- SCF - Scrubby Flatwoods
- WVF - Wet Flatwoods
- BM - Basin Marsh
- BS - Basin Swamp
- SG - Baygall
- DT - Bottomland Forest
- DS - Depression Marsh
- DS - Dome Swamp
- FS - Floodplain Marsh
- SHB - Shrub Bog
- WVP - Wet Prairie
- SWLK - Swamp Lake
- BS* - Blackwater Stream
- OP - Open Water

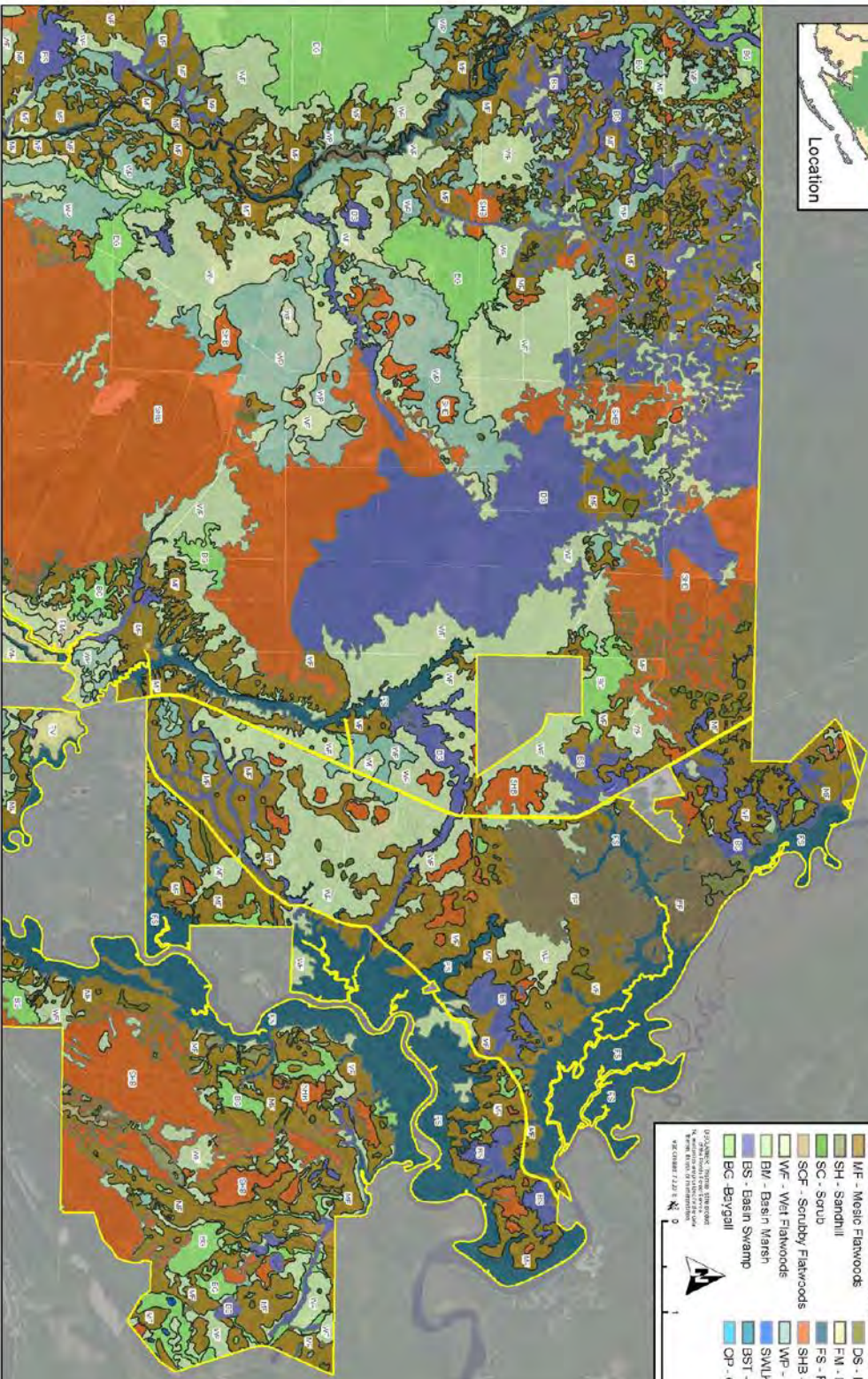
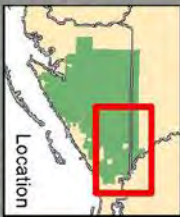


 DISCLAIMER: This map is a simplified representation of the natural communities of Tate's Hell State Forest. It is not intended to be used for legal purposes.

 Map Created 7/2013







Historic Natural Communities Map NE Tate's Hell State Forest

Florida Department of Natural Resources
Natural Resources Management Bureau
Map Number: 1225

Tate's Hell State Forest	BF - Bottomland Forest
Historic Natural Communities	DM - Depression Marsh
WF - Mesic Flatwoods	DS - Dune Swamp
SH - Sandhill	FM - Floodplain Marsh
SCF - Scrub	FS - Floodplain Swamp
SCF - Scrubby Flatwoods	SHB - Shrub Bog
WF - Wet Flatwoods	WP - Wet Prairie
BM - Basin Marsh	SWLX - Swamp Lake
BS - Basin Swamp	BST - Blackwater Stream
BG - Baygall	CP - Open Water

Scale: 0 1 2 Miles

North Arrow

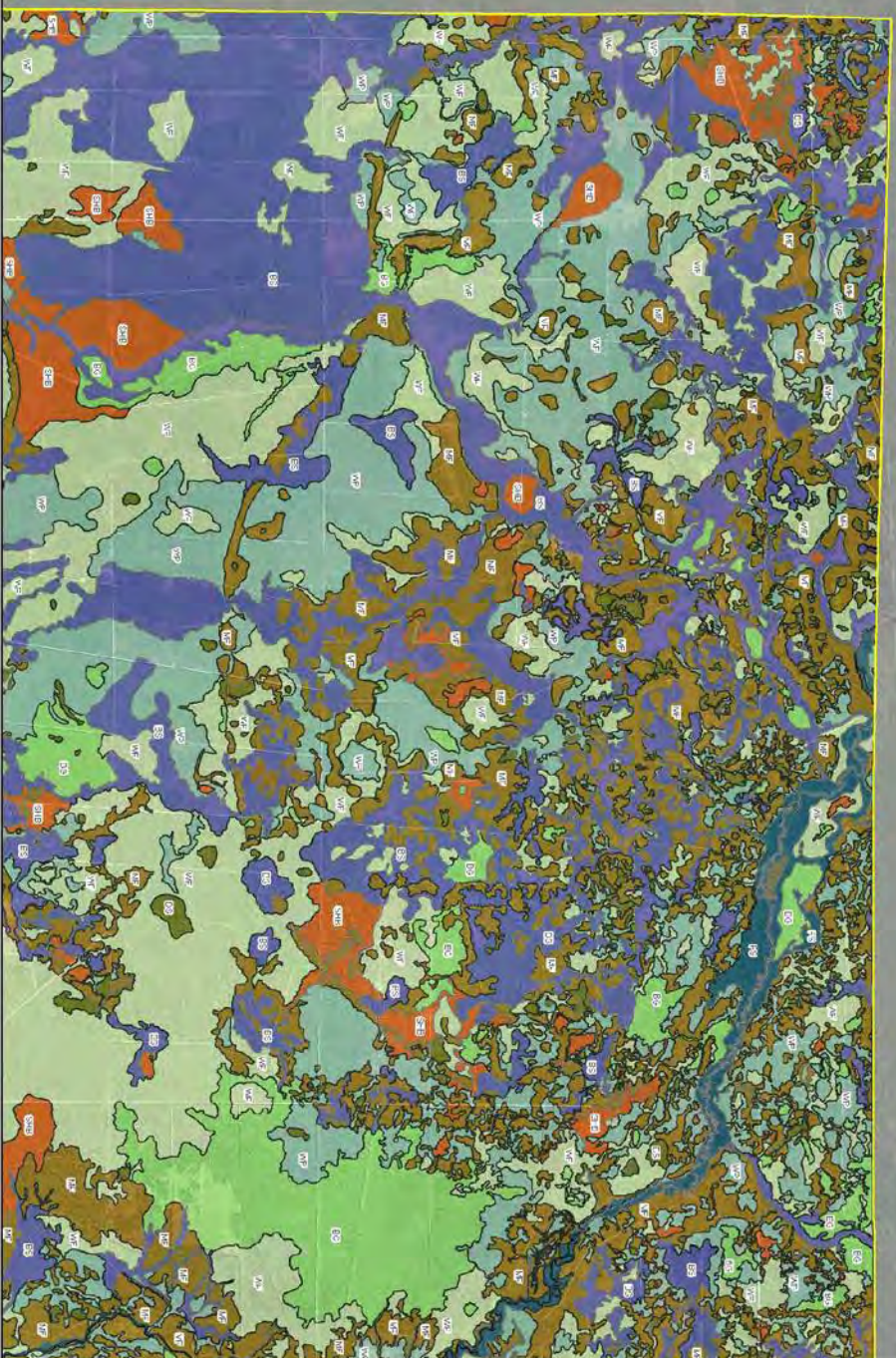
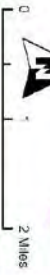
Historic Natural Communities Map NW Tate's Hell State Forest

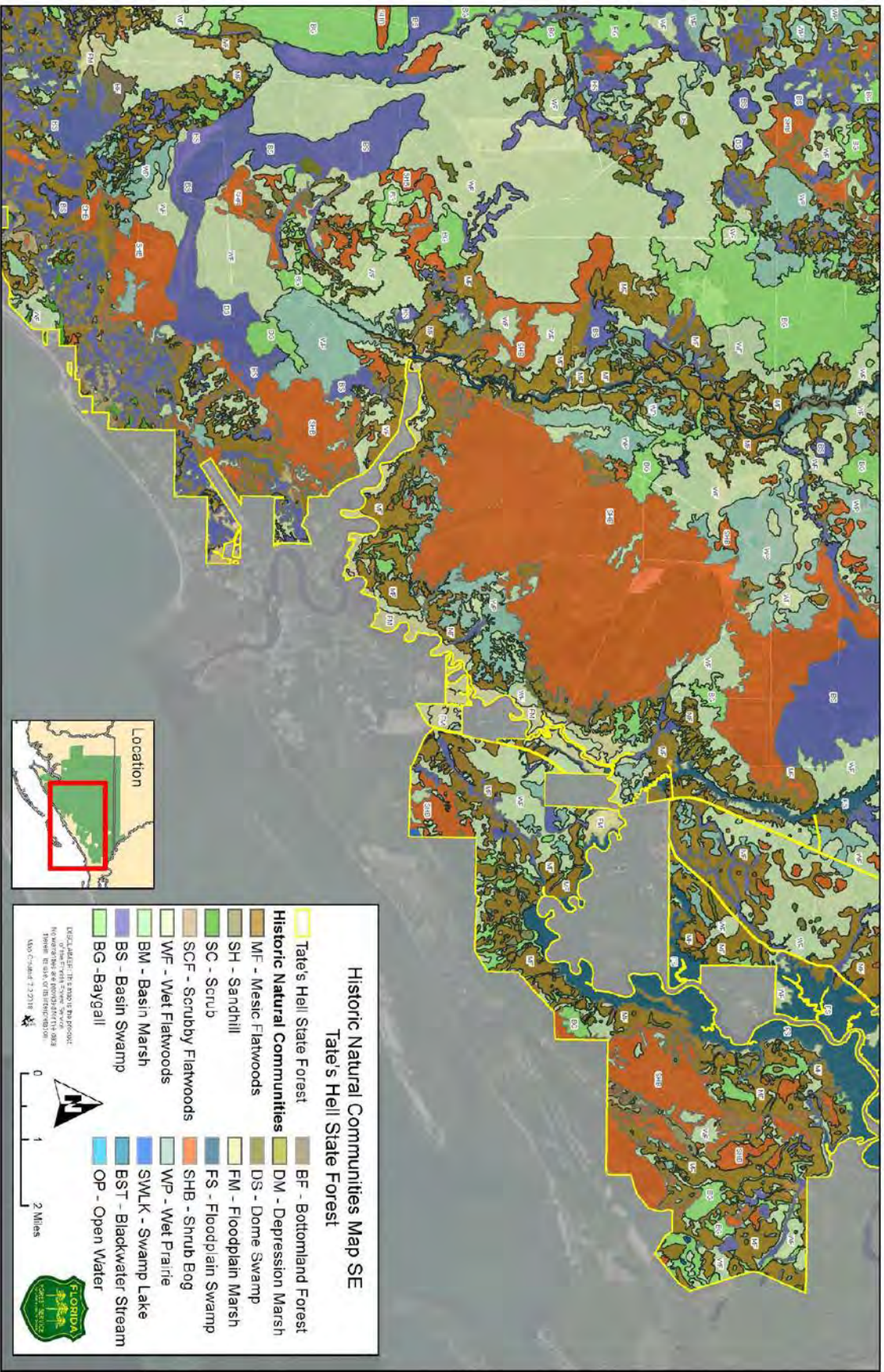
Tate's Hell State Forest

Historic Natural Communities

- MF - Mesic Flatwoods
- SH - Sandhill
- SC - Scrub
- SCF - Scrubby Flatwoods
- WF - Wet Flatwoods
- BM - Basin Marsh
- BS - Basin Swamp
- BG - Baygall
- BF - Bottomland Forest
- DM - Depression Marsh
- DS - Dune Swamp
- FM - Floodplain Marsh
- FS - Floodplain Swamp
- SHB - Shrub Bog
- WP - Wet Prairie
- SWLK - Swamp Lake
- BST - Blackwater Stream
- OP - Open Water

DISCLAIMER: This map is for general informational purposes only. It is not intended to be used for legal or regulatory purposes. The Florida Department of Natural Resources is not responsible for any errors or omissions on this map.





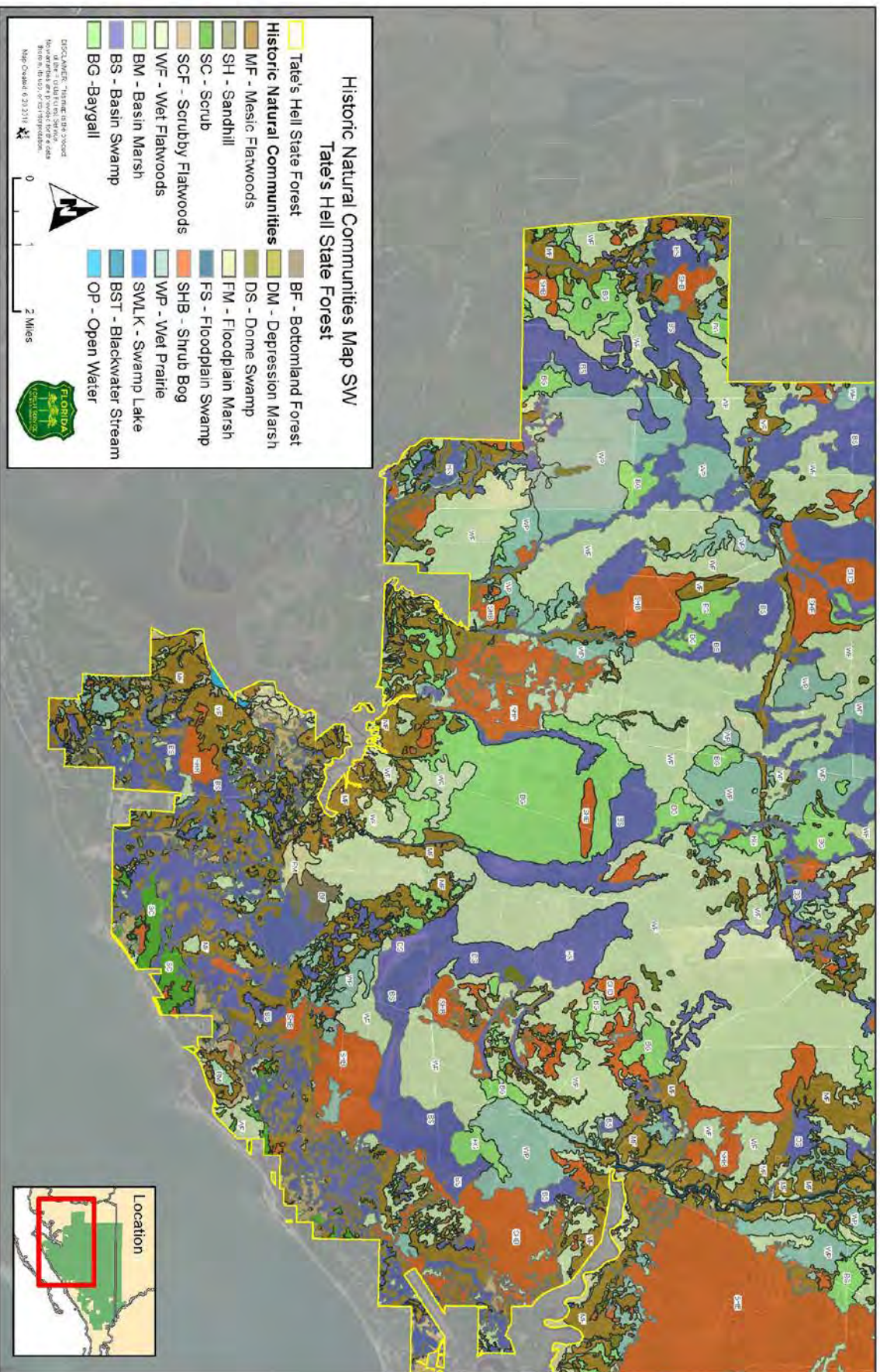


Exhibit T

Management Prospectus

St. Joe Timberland

Bay, Franklin, Gadsden, Jefferson, Leon, Liberty,
Taylor, Wakulla, Walton and Washington Counties

Climate Change Lands

Purpose for State Acquisition

The St. Joe Company is one of the largest landowners in Florida. The St. Joe Timberland project will consolidate the St. Joe ownerships already included in other projects, thus helping to preserve large undeveloped tracts of land for native plants and animals and giving the public an opportunity to experience large natural areas throughout north Florida. This project may also help complete the Florida National Scenic Trail, a statewide non-motorized trail that crosses a number of Florida Forever project sites.

Manager

The sites will be managed by various agencies. See the summaries for the projects listed below.

General Description

The St. Joe Timberland project includes the St. Joe Company ownerships in the following projects: Apalachicola River (Sweetwater Creek 7,040 acres, Gadsden Glades 360 acres, and Aspalaga Landing 600 acres sites); Brevard Coastal Scrub Ecosystem (Tico site 1,780 acres); Dickerson Bay/Bald Point (Bald Point site 3,840 acres); Florida's First Magnitude Springs (River Sink 40 acres and St. Marks 700 acres springs sites); Lake Powell 600 acres; St. Joseph Bay Buffer 250 acres; Sand Mountain 1,680 acres; Tates Hell/Carrabelle Tract

St. Joe Timberland FNAI Elements	
<i>Florida Torreya</i>	G1/S1
Florida Black Bear	G5T2/S2
Gopher Tortoise	G3/S3
Swallow-tailed Kite	G5/S2
<i>Apalachicola Rosemary</i>	G1/S1
Big Blue Spring Cave Crayfish	G1/S1
<i>Chapman's Rhododendron</i>	G1/S1
<i>Curtiss' Loosetrife</i>	G1/S1
<i>Gholson's Blazing Star</i>	G1/S1
Southern Elktoe	G1/S1
<i>Telephus Spurge</i>	G1/S1
Woodville Karst Cave Crayfish	G1/S1
93 rare species are associated with the project	

16,000 acres; Wacissa/Aucilla River Sinks 19,840 acres; and Wakulla Springs Protection Zone 2,240 acres. The sites lie in the Panhandle from Bay and Washington Counties to Taylor County, except for the Tico site in Brevard County. They include samples of almost all the natural communities of north and central Florida, from scrub to swamps and springs. See the general descriptions for the projects listed above.

Public Use

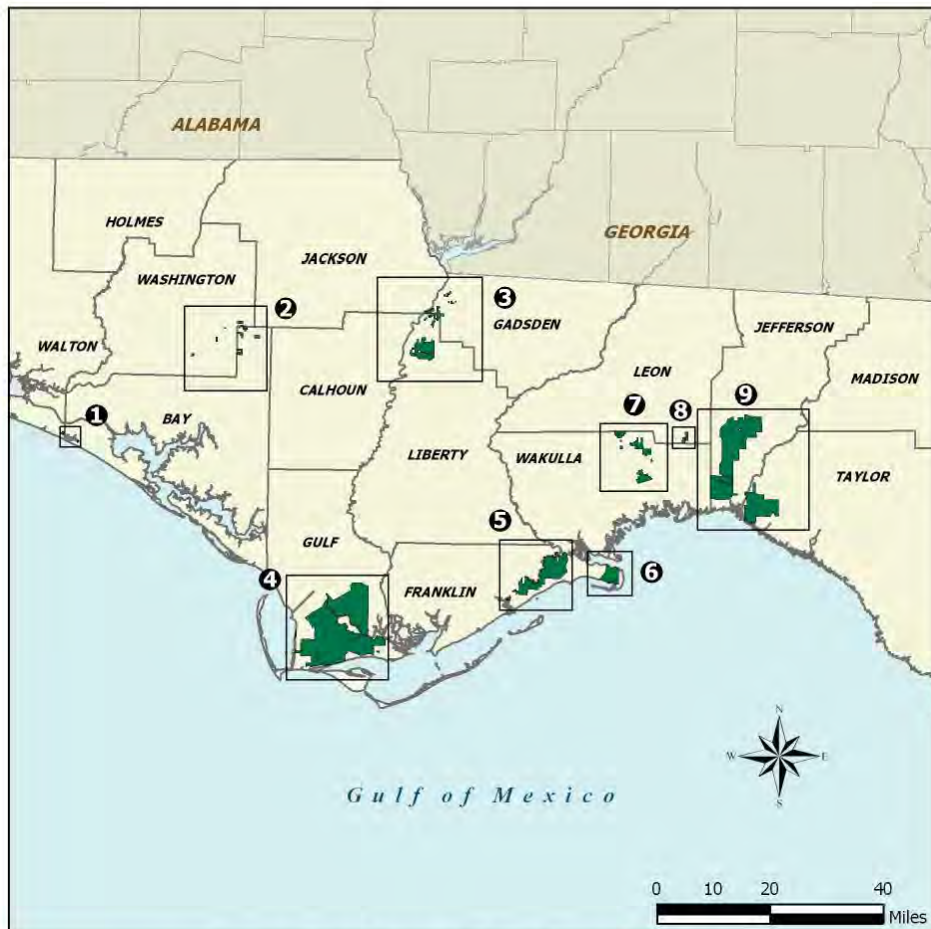
The sites are designated for various public uses. See the summaries for the projects listed above.

Acquisition Planning

On December 9, 1999, the Land Acquisition Management Advisory Council (LAMAC) approved the creation of the St. Joe Timberland project and added it to the Conservation and Recreation Lands (CARL) Priority list. The project was sponsored by the St. Joe Company, Division of State Lands (DSL), and The Nature Conservancy (TNC), and initially consisted of individual tracts owned by St. Joe Company within existing projects. Other sites will be proposed for addition to the project. Approval was given to add an additional 1,318 acres (18 to the Wacissa/Aucilla River Sinks project and approximately 1,300 to the Apalachicola River Project – Lake Wimico site) to the project boundary as essential parcels. The initial project consisted of approximately 56,218 acres. The Northwest Florida Water Management District (NFWFMD) has acquired the majority of the Sand Mountain site.

Placed on List	2000
Project Area (GIS Acres)	163,459
Acres Acquired (GIS)	81,228*
at a Cost of	\$76,054,595
Acres Remaining (GIS)	82,231
with Estimated (Tax Assessed) Value of	\$48,576,562

*NFWFMD has purchased acreage in project boundary.



ST. JOE TIMBERLAND: OVERVIEW

BAY, WALTON, WASHINGTON, GADSDEN, LIBERTY, GULF, FRANKLIN, WAKULLA, LEON, JEFFERSON, AND TAYLOR COUNTIES

Map 1

- A. Lake Powell Site

Map 2

- A. Sand Mountain Site

Map 3

- A. Apalachicola River - Gadsden Glades Site
- B. Apalachicola River - Aspalaga Landing Site
- C. Apalachicola River - Crooked/Short Creek Site
- D. Apalachicola River - Sweetwater Creek Site

Map 4

- A. St. Joseph Bay Buffer Site
- B. St. Vincent Sound-to-Lake Wimico Ecosystem Site
- C. Lake Wimico Site

Map 5

- A. Tates Hell/Carrabelle Site

Map 6

- A. Dickerson Bay/Bald Point Site

Map 7

- A. Wakulla Springs Protection Zone Site
- B. Florida's First Magnitude Springs - River Sink Spring Site

Map 8

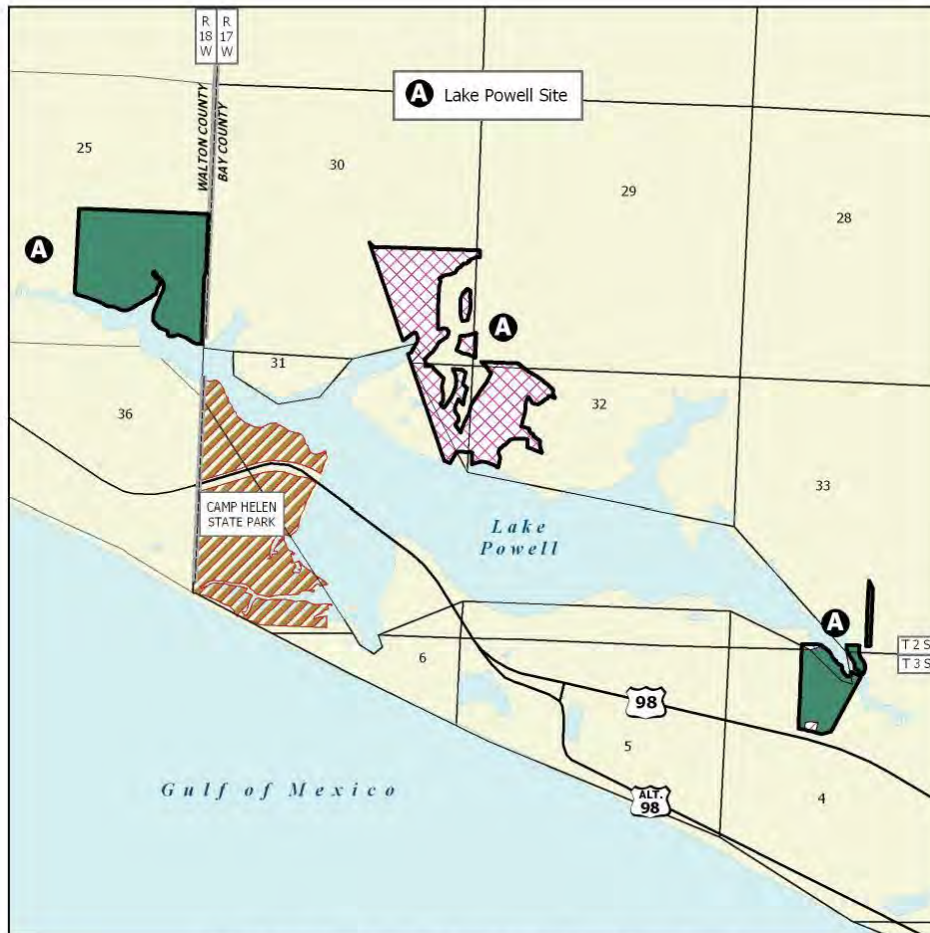
- A. Florida's First Magnitude Springs - St. Marks Springs Site

Map 9

- A. Wacissa/Aucilla River Sinks Site



MAY 2006



ST. JOE TIMBERLAND: MAP 1 OF 9

BAY AND WALTON COUNTIES

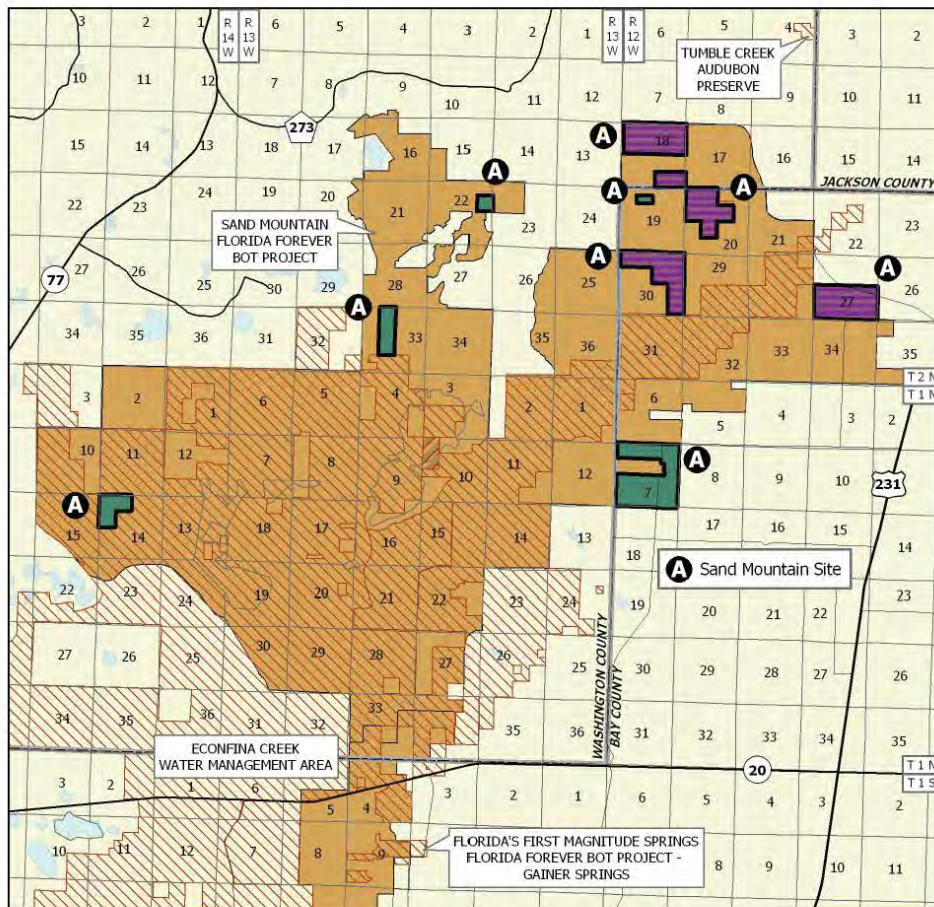
- Florida Forever BOT Project Boundary
- Essential Parcel(s) Remaining
- Change in Ownership*
- State Owned Lands

* Ownership boundary has changed since project was first placed on State List.

0 0.25 0.5 1
Miles



MAY 2006



ST. JOE TIMBERLAND: MAP 2 OF 9

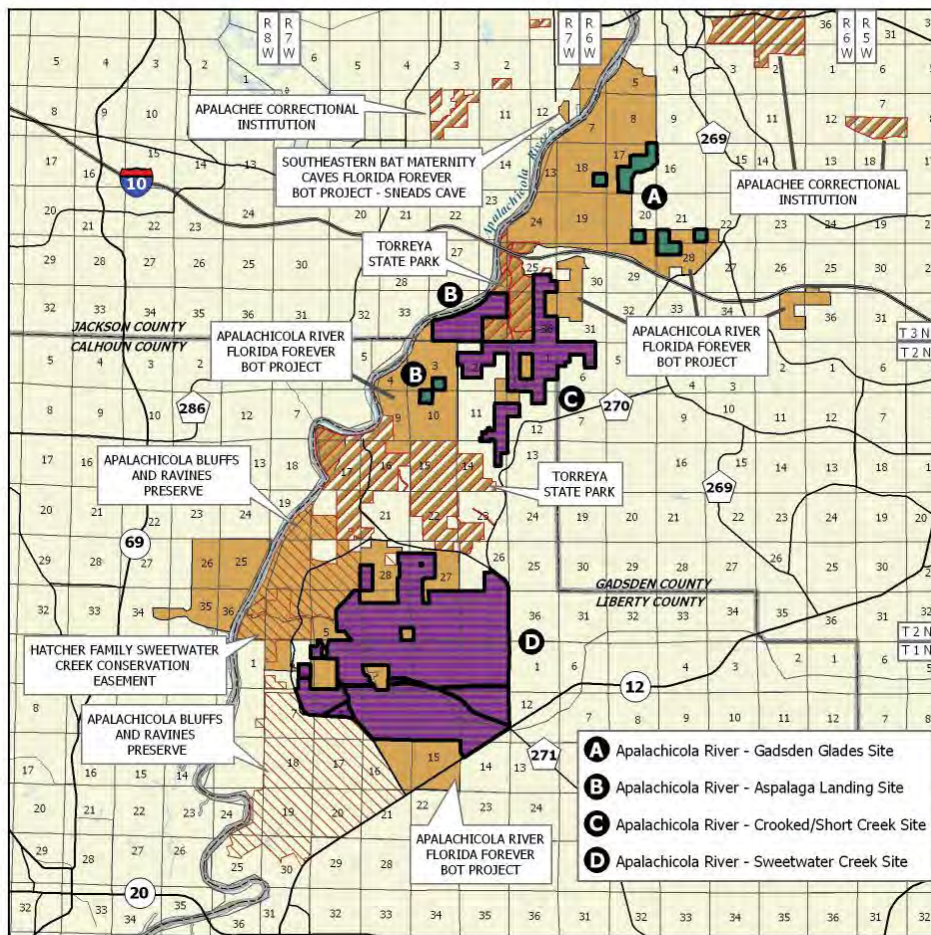
BAY AND WASHINGTON COUNTIES

-  Florida Forever BOT Project
-  Acquired
-  Essential Parcel(s) Remaining
-  Other Florida Forever BOT Projects
-  State Owned Lands
-  Other Conservation Lands

0 1 2 4
Miles



JUNE 2007



ST. JOE TIMBERLAND: MAP 3 OF 9

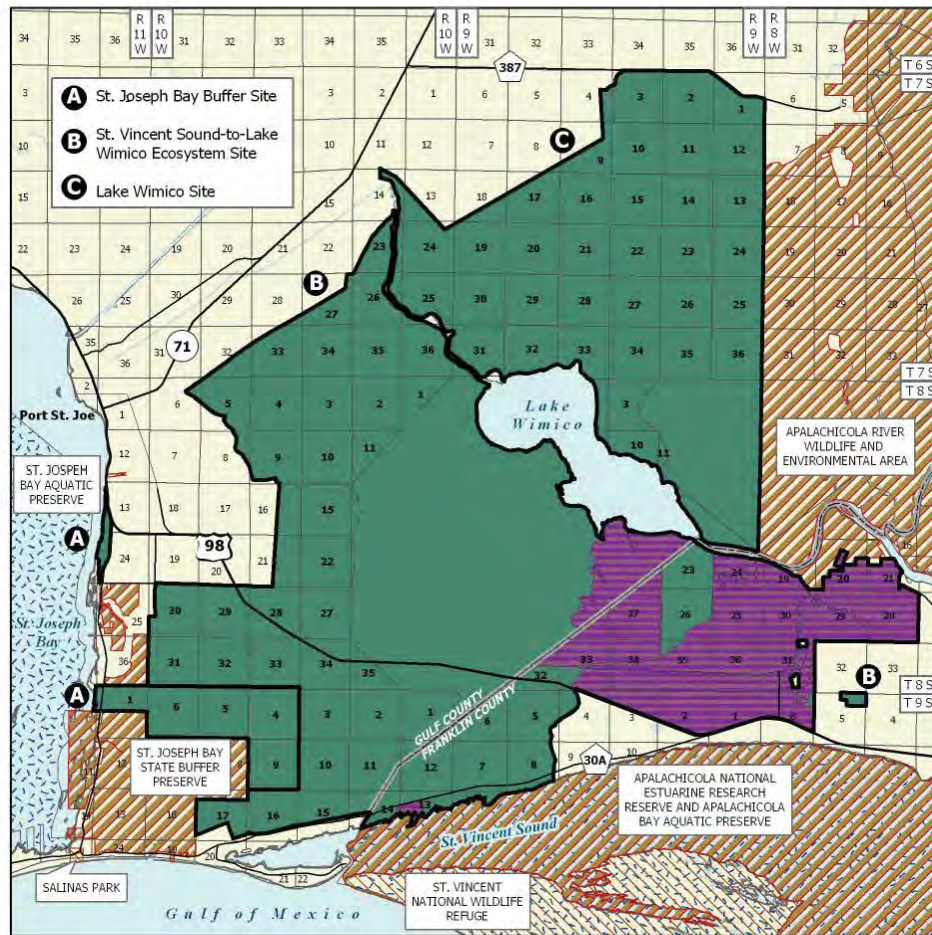
GADSDEN AND LIBERTY COUNTIES

- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 1.5 3 6 Miles



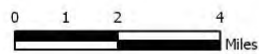
MAY 2006



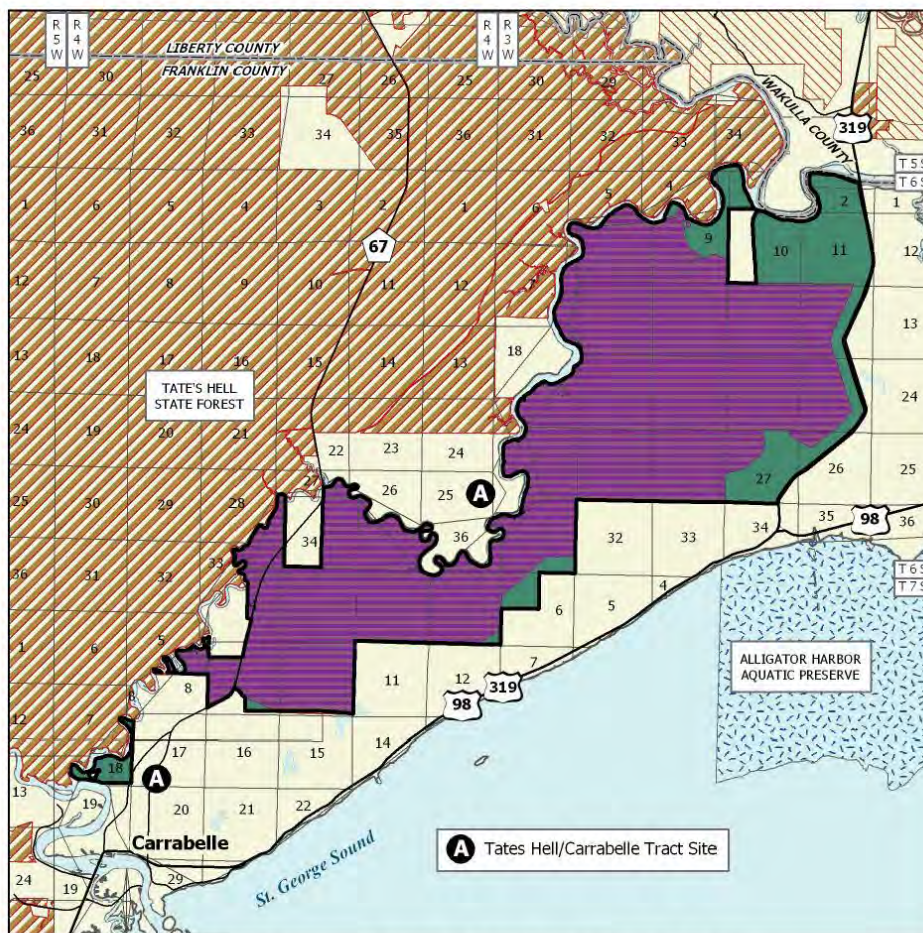
ST. JOE TIMBERLAND: MAP 4 OF 9

GULF AND FRANKLIN COUNTIES

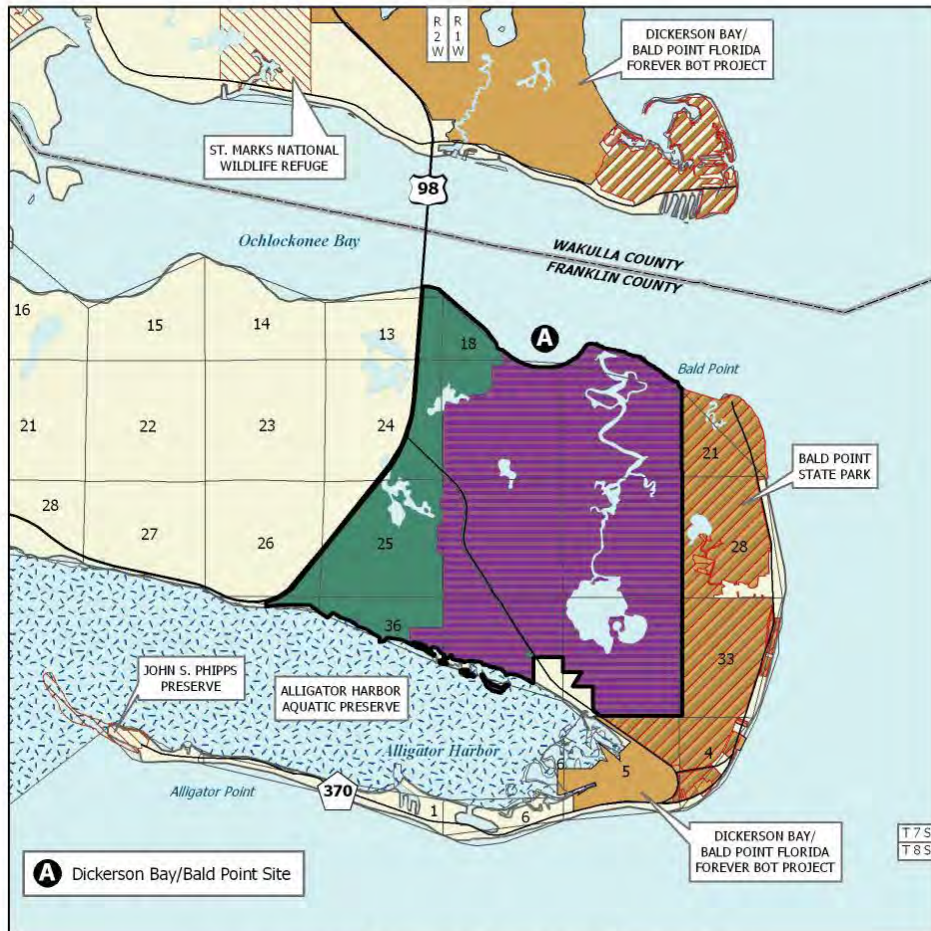
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve

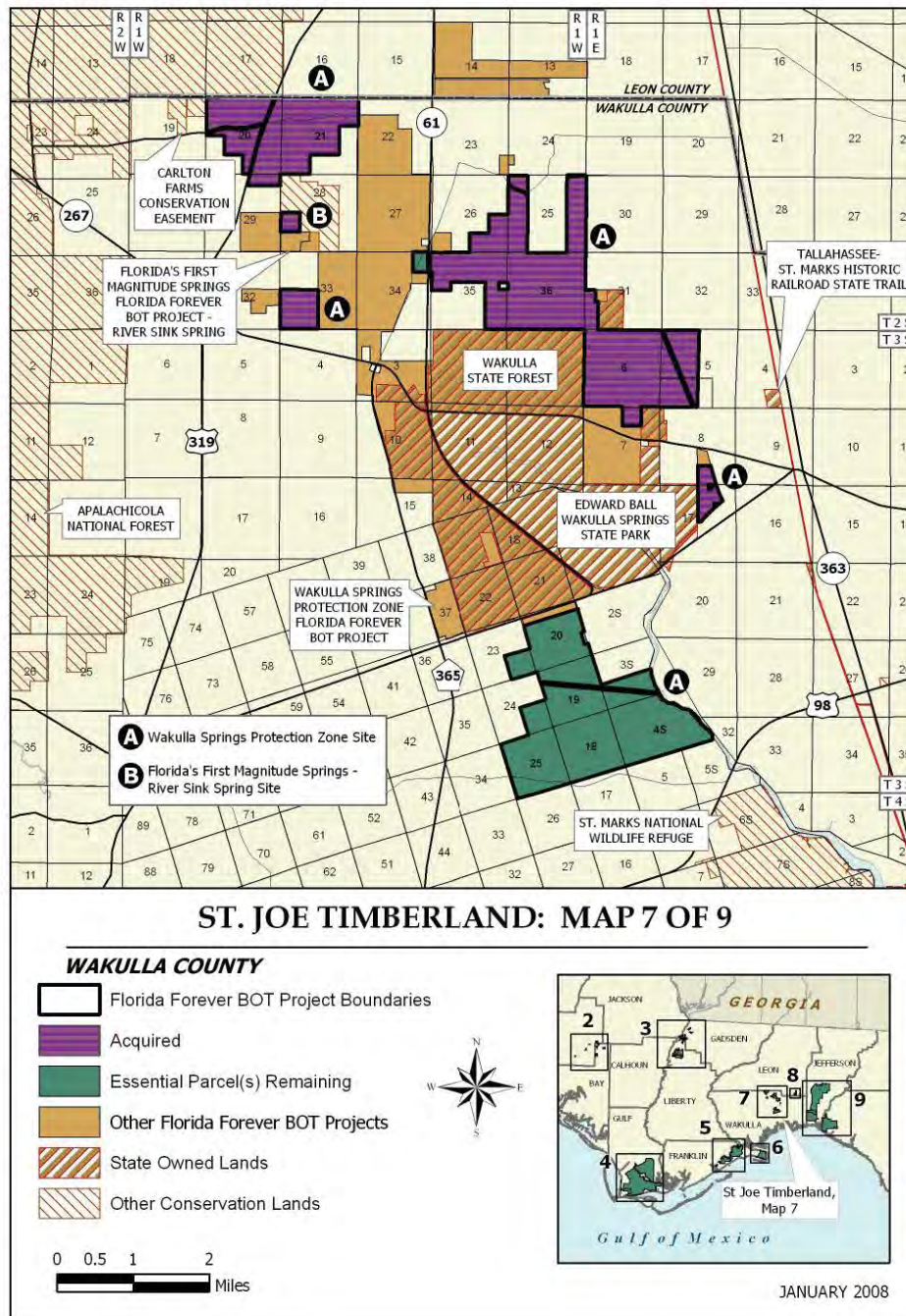


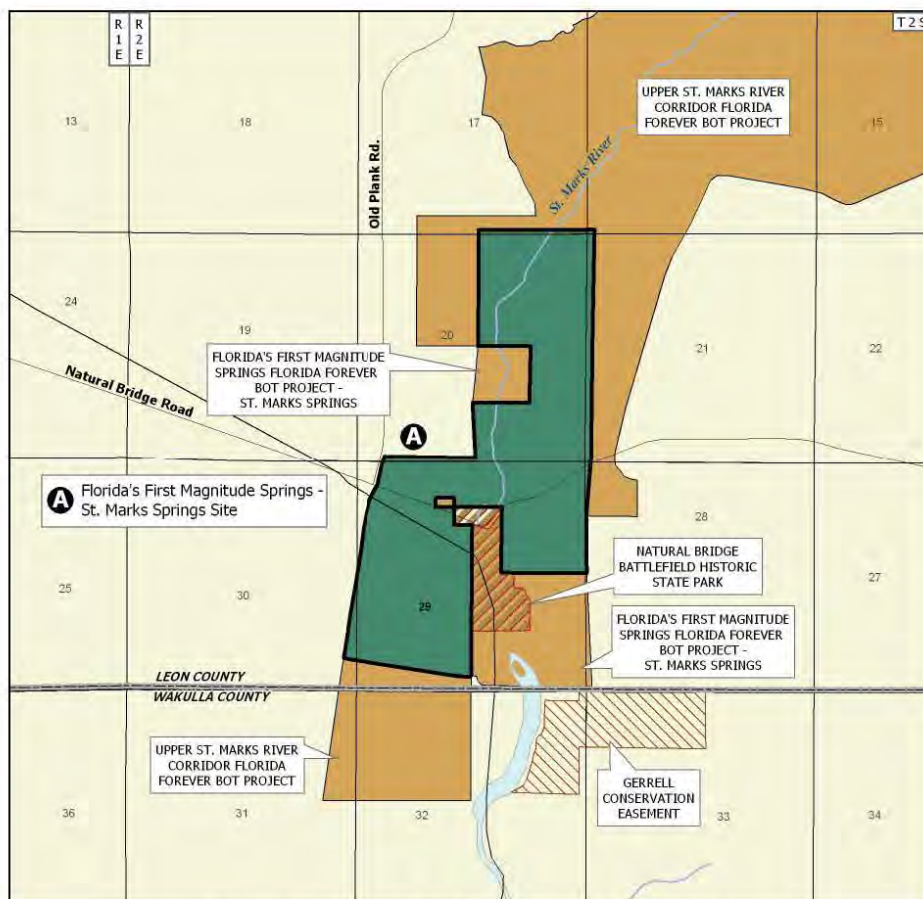
APRIL 2007



MAY 2006







ST. JOE TIMBERLAND: MAP 8 OF 9

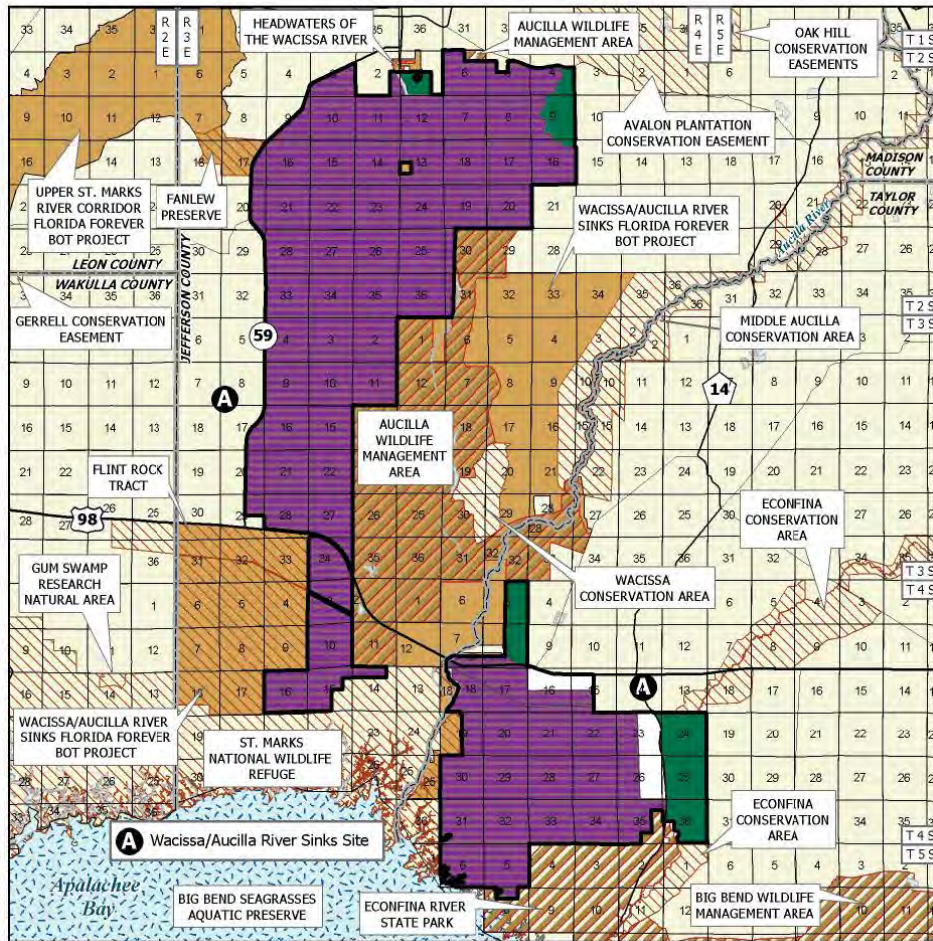
LEON COUNTY

- Florida Forever BOT Project Boundary
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 0.25 0.5 1
Miles



JULY 2009



ST. JOE TIMBERLAND: MAP 9 OF 9

JEFFERSON AND TAYLOR COUNTIES

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve

0 1 2 4
Miles



MAY 2012

On August 22, 2000, the Acquisition and Restoration Council (ARC) approved a fee-simple, 12,360-acre addition, known as Lake Wimico site in Gulf County, to the project boundary. It was sponsored by the Florida Fish and Wildlife Conservation Commission (FWC), consisted of one owner, the St. Joe Company. Also on August 22, 2000 the ARC approved a fee-simple, 1,592-acre addition, known as Snipe Island, to the project boundary. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On July 12, 2001, the ARC approved a fee-simple, 22,260-acre addition to the project boundary. It was sponsored by the FWC, consisted of one owner, the St. Joe Company. About 19,445 acres are located in Jefferson County, the remainder in Taylor County. Also at that meeting, the ARC approved a fee-simple, 2,560-acre addition, to the St. Joseph Bay buffers project boundary. It was sponsored by the FWC, consisted of one owner, the St. Joe Company. The property is located in Gulf County.

On April 25, 2002, the ARC approved a fee-simple, 2,194-acre addition, known as the Tiger Hammock Conservation Area, to the project boundary. It was sponsored by Dr. John Epler and consisted of one owner, the St. Joe Company.

Also, the ARC approved a fee-simple, 1,656-acre addition, known as Crooked Creek (1,365 acres, Gadsden/Liberty Counties) and Short Creek (291 acres, Liberty County), to the project boundary. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On June 6, 2003, the ARC approved a fee-simple, 49,565-acre addition, known as St. Vincent Sound to Lake Wimico, to the project boundary in Gulf and Franklin counties. It was sponsored by the TNC, consisted of one owner, the St. Joe Company.

On June 4, 2004, the ARC approved a fee-simple, 10,444-acre addition in Jefferson County, known as the Flint Rock tract, to the project boundary. It was sponsored by the TNC and consisted of one owner, the St. Joe Company.

In January 2008 TNC acquired 10,905 acres known as Flint Rock.

On April 6, 2010, the FWC acquired from TNC approximately 2,836 acres of the Flint Rock site for \$5,246,371.

On December 9, 2011 ARC voted to place this project in the Climate Change Lands category of Florida Forever.

On April 20, 2012, the ARC approved transferring the Flint Rock tract to the Wacissa/Aucilla River Sinks Florida Forever project, as this was no longer in St. Joe ownership.

Coordination

TNC is an acquisition intermediary for this project.

Updated April 1, 2015

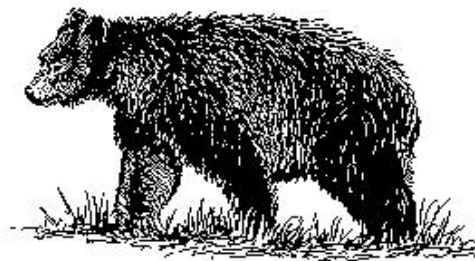


Exhibit U

Land Management Reviews

Name of Site: Tate's Hell SF **County:** Franklin

Managed by: Department of Agriculture and Consumer Services **Acres:** 202,463.58
 Florida Forest Service **Area Reviewed:** Entire tract

Review Date: 08/10/12 **Management Plan Approval Date:** 09/21/07



Review Team Determination

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



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



Categories	Management Plan Review	Field Review
Natural Communities	0.95	3.92
Listed Species	1.00	4.27
Natural Resource Survey	1.00	4.58
Cultural Resources	1.00	4.47
Prescribed Fire	1.00	4.83
Restoration	1.00	4.64
Exotic Species	1.00	3.94
Hydrology	1.00	4.38
Groundwater Monitoring	1.00	4.17
Surface Water Monitoring	1.00	4.33
Resource Protection	1.00	4.63
Adjacent Property Concerns	0.96	4.67
Public Access & Education	0.98	4.65
Management Resources	N/A	4.67
Managed Area Uses	1.00	N/A
Buildings, Equipment, Staff & Funding	N/A	3.38

Consensus Commendations to the Managing Agency

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

1. The team commends the FFS for managing the fuel loading and for reintroducing burning onto the property. (VOTE: 6+, 0-)
★★★★★★
2. The team commends the FFS for providing a sustainable, ecosystem friendly recreational opportunities throughout the forest, such as picnicking, camping, hiking, fishing and hunting. (VOTE: 6+, 0-)
★★★★★★
3. The team commends the FFS on the hydrologic restoration efforts achieved to date. (VOTE: 6+, 0-)
★★★★★★
4. The team commends FFS on its management and monitoring of listed animal species, including red-cockaded woodpecker, gopher tortoise, flatwoods salamander and black bear. (VOTE: 6+, 0-)
★★★★★★

Consensus Recommendations to the Managing Agency

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

1. The team recommends that FFS address the natural community description and maps for the wet flatwoods, mesic flatwoods, and seepage slope in the management plan update. (VOTE: 6+, 0-)
★★★★★★

Managing Agency Response:

2. The team recommends that FFS implement specific management practices for listed plant species, especially federally listed species. (VOTE: 6+, 0-)
★★★★★★

Managing Agency Response:

Field Review Checklist Findings

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

- Natural communities, specifically dwarf cypress or strand swamp, sandhill, floodplain swamp, marine/estuary tidal marsh, upland mixed forest, scrub, beach dune, wet prairie, bottomland forest, baygall/basin swamp, depression marsh, blackwater stream, freshwater tidal swamp and bluff.
- Listed Species, specifically animal inventory, RCW, flatwoods salamander, gopher tortoise and plant inventory.
- Natural Resources Survey/Management Resources, specifically listed species or habitat monitoring, fire effects monitoring, other habitat management effects monitoring and invasive species survey/monitoring
- Cultural Resources, specifically cultural resource survey and protection and preservation.
- Resource Management, Prescribed Fire, specifically area being burned (no. acres), frequency and quality.
- Restoration of Ruderal Areas, specifically Hwy 65 prairie restoration and comprehensive hydrologic restoration plan.
- Forest Management, specifically timber inventory, timber harvesting, reforestation/afforestation and site preparation.

- Non-Native, Invasive & Problem Species, specifically prevention of plants, animals and pest/pathogens and control of plants, animals and pest/pathogens.
- Hydrologic/Geologic function Hydro-Alteration, specifically roads/culverts, ditches, hydro-period alteration and water level alteration.
- Ground and Surface Water Monitoring, specifically water quality and quantity.
- Resource Protection, specifically boundary survey, gates & fencing, signage and law enforcement presence.
- Adjacent Property Concerns, specifically expanding development and inholdings/additions.
- Public Access & Education, specifically roads, parking and boat access.
- Environmental Education & Outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities and management of visitor impacts.
- Management Resource, specifically waste disposal.

Items Requiring Improvement Actions in the Management Plan

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

- 1. The review team average score indicates a need for acknowledgement of the protection and maintenance of natural communities, specifically beach dune. Please provide documentation in the management plan.**

Managing Agency Response:

Items Requiring Improvement Actions in the Field

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

- 1. The review team average score indicates the relative maintenance conditions of the natural communities, specifically wet/prairie flatwoods grassy, wet/mesic flatwoods shrubby, seepage slope and dome swamp. Please provide documentation in the management plan.**

Managing Agency Response:

- 2. The review team average score indicates a need for acknowledgement of funding levels. Please provide documentation in the management plan.**

Managing Agency Response:

Florida Forest Service Manager and Key Staff Present:

- Randy Gregory, Manager
- David Morse
- Marti Miller
- Ken Weber
- John Browne

2017 Land Management Review Team Report for Tate's Hell State Forest

Table of Contents

1. Introduction	2
1.1. Property Reviewed in this Report	3
1.2 Property Map	3
1.3. Overview of Land Management Review Results.....	4
1.3.1 Consensus Commendations for the Managing Agency	4
1.3.2. Consensus Recommendations to the Managing Agency.....	5
2. Field Review Details	5
2.1 Field Review Checklist Findings.....	5
2.2. Items Requiring Improvement Actions in the Field	6
2.3. Field Review Checklist and Scores	6
3. Land Management Plan Review Details.....	9
3.1 Items Requiring Improvements in the Management Plan.....	9
3.2 Management Plan Review Checklist and Scores	9
Appendix A: Scoring System Detail	13

1. Introduction

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

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

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

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

1.1. Property Reviewed in this Report

Name of Site: Tate's Hell State Forest

Managed by: Florida Forest Service

Acres: 202,436

Counties: Franklin, Liberty

Purpose(s) for Acquisition: See CARL 1993 Annual Report

Acquisition Program(s): CARL, SOR, P2000, Florida Forever

Original Acquisition Date: 2/8/94

Area Reviewed: Entire Property

Last Management Plan Approval Date: 6/15/07

Review Date: 7/22/17

Agency Manager and Key Staff Present:

- David Morse, Forest Supervisor
- Marti Miller, District Rec. Coordinator
- Clint Davis, Operations Manager
- Chris Colburn, Center Manager

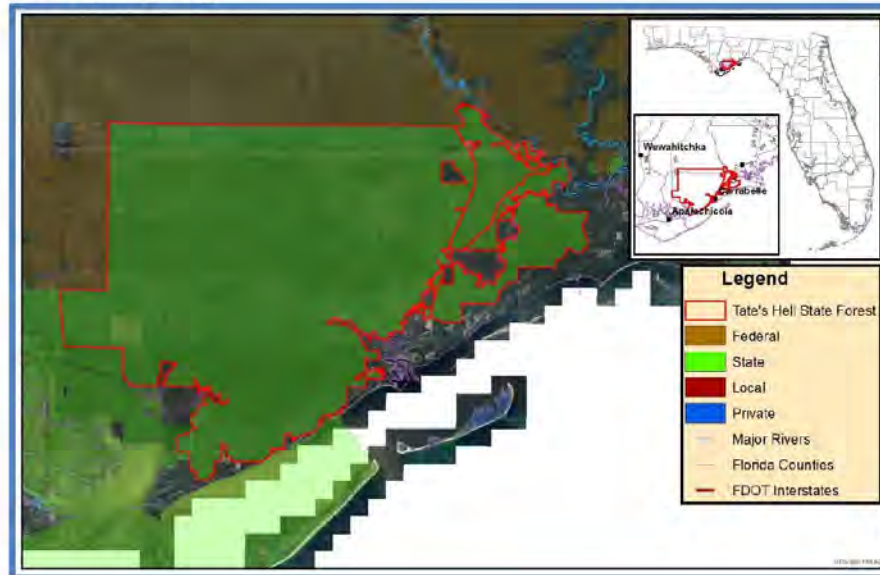
Review Team Members Present (voting)

- DRP: John McKenzie
- FWC: Diana Pepe
- FFS: Doug Longshore
- DEP: Mark Gillman
- NFWFMD: Linda Chaisson
- Local gov't: Mark Curenton
- Conservation organization: Lesley Cox
- Private land manager:

Other Non-Team Members Present (attending)

- Bill Korn, FFS
- Kim Wren, ANERR
- Aric Larson, DEP/DSL
- Diane Alix, FWC
- James Parker, DEP/DSL

1.2 Property Map



1.3. Overview of Land Management Review Results

Is the property managed in accordance with the purposes for which it was acquired?

Yes = 7, No = 0

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

Yes = 7, 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	4.68	4.51
Prescribed Fire / Habitat Restoration	4.79	4.71
Hydrology	4.83	4.32
Imperiled Species	4.17	3.87
Exotic / Invasive Species	4.83	4.80
Cultural Resources	4.86	4.71
Public Access / Education / Law Enforcement	4.55	4.40
Infrastructure / Equipment / Staffing	4.43	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

1.3.1 Consensus Commendations for the Managing Agency

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

1. The team commends the FFS staff for efforts to install and maintain elements as described in the Tate's Hell Hydrologic Restoration Plan. (7+, 0-)
2. The team commends the FFS staff for maintaining an aggressive prescribed fire program and incorporating growing season burns into long-term management. (7+, 0-)
3. The team commends the FFS staff for their efforts to restore fire regimes and hydrologic function to wet prairie communities. (7+, 0-)
4. The team commends FFS staff for threatened and endangered plant community habitat restoration. (7+, 0-)
5. The team commends FFS staff for road maintenance efforts, especially considering the amount of road, wet conditions, and the high amount of truck traffic. (7+, 0-)

6. The team commends the FFS staff for incorporating the use of low ground pressure logging equipment / techniques, which greatly minimizes disturbance on wet sites. (7+, 0-)
7. The team commends FFS staff for outstanding inter-agency cooperation with FWC staff in managing listed species. (7+, 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:

There were no consensus review team recommendations to the managing agency.

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 wet flatwoods, basin swamp, mesic flatwoods, wet prairie, shrub bog, baygall, floodplain swamp, dome swamp, bottomland forest, floodplain marsh, basin marsh, blackwater stream, depression marsh, and slough:
2. Listed Species Protection and Preservation specifically listed plants and animals in general, and specifically red-cockaded woodpecker:
3. Natural Resources Survey/Monitoring, specifically listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring:
4. Cultural Resources, specifically cultural resource survey, and protection and preservation:
5. Prescribed Fire, specifically area being burned, frequency and quality:
6. Restoration, specifically hydrology, flatwoods thinning, and longleaf pine thinning:
7. Forest Management, specifically timber inventory/assessment, timber harvesting, reforestation, and site preparation:
8. Non-native, invasive and problem species, specifically the prevention and control of plants, animals, pest and pathogens.
9. Hydro-alteration, specifically roads/culverts and ditches:
10. Ground Water Monitoring, specifically quantity:
11. Surface Water Monitoring, specifically 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, parking, and boat access:

15. Environmental education and outreach, specifically relating to wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings, equipment, and staff.

2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan update should include information on how these items have been addressed:

The review team scores did not identify items requiring improvement actions in the field.

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Wet Flatwoods	I.A.1	4	4	4	4	5	4	3		4.00
Basin Swamp	I.A.2	5	5	4	4	5	4	4		4.43
Mesic Flatwoods	I.A.3	5	5	4	5	5	4	4		4.57
Wet Prairie	I.A.4	4	4	4	4	4	4	4		4.00
Shrub Bog	I.A.5	4	4	4	4	4	4	4		4.00
Baygall	I.A.6	5	5	4	5	5	4	5		4.71
Floodplain Swamp	I.A.7	5	5	4	5	5	4	5		4.71
Dome Swamp	I.A.8	4		4	5	5	4	5		4.50
Bottomland Forest	I.A.9	5	5	4	5	5	4	4		4.57
Floodplain Marsh	I.A.10	5	5	4	5	5	4	5		4.71
Scrubby Flatwoods	I.A.11	3	3	4	3	5	4	4		3.71
Scrub	I.A.12	5	3	3	3	5	4	4		3.86
Basin Marsh	I.A.13	5	5	4	5	5	4	5		4.71
Sandhill	I.A.14	3	3	4	3	4	4	4		3.57
Blackwater Stream	I.A.15	5	5	4	5	5	4	5		4.71
Depression Marsh	I.A.16	5	5	4	5	5	3	5		4.57
Slough	I.A.17	5	5	4	5	5	4	5		4.71
Natural Communities Average Score										4.36
Listed Species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	4	5		4	4		4.50
Red-Cockaded Woodpecker	I.B.1.a	3	5	4	5	2	4	5		4.00
Flatwoods Salamander	I.B.1.b	4	5	3	3	2	4	4		3.57
Plants	I.B.2	5	5		4		4	5		4.60
Listed Species Average Score										4.17

Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	4	5	5		4.86
Other non-game species or their habitat monitoring	I.C.3	5	5	5	5	5	5	5		5.00
Fire effects monitoring	I.C.4	5	5	5	5	5	4	5		4.86
Other habitat management effects monitoring	I.C.5	5	5	5	5	5	4	5		4.86
Invasive species survey / monitoring	I.C.6	5	5	4	5	5	4	5		4.71
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	5	5	5	5	4	5		4.86
Protection and preservation	II.B	5	5	5	5	5	4	5		4.86
Cultural Resources Average Score										4.86
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	5	5	5		5.00
Frequency	III.A.2	4	4	5	5	5	4	4		4.43
Quality	III.A.3	5	5	5	5	5	4	5		4.86
Resource Management, Prescribed Fire Average Score										4.76
Restoration (III.B)										
Hydrology	III.B.1	5	5	4	5	5	5	5		4.86
Flatwoods Thinning	III.B.2	5	5	5	5	5	5	4		4.86
Longleaf Pine Thinning	III.B.3	5	5	5	5	4	4	5		4.71
Restoration Average Score										4.81
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	5	5	5	5	5	5	5		5.00
Timber Harvesting	III.C.2	5	5	5	5	5	5	5		5.00
Reforestation/Afforestation	III.C.3	5	5	5	5	5	5	5		5.00
Site Preparation	III.C.4	5	5	5	5	5	5	5		5.00
Forest Management Average Score										5.00
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	5	5	5	5	4	5		4.86
prevention - animals	III.D.1.b	5	5	5	5	5	4	5		4.86
prevention - pests/pathogens	III.D.1.c	5	5		5	4	4	5		4.67
Control										
control - plants	III.D.2.a	5	5	5	5	5	5	5		5.00
control - animals	III.D.2.b	5	5	5	5	5	4	5		4.86
control - pest/pathogens	III.D.2.c	5	5	5	5	4	4	5		4.71
Non-Native, Invasive & Problem Species Average Score										4.83
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	5	5	5	5	5	5		5.00
Ditches	III.E.1.b	5	5	5	5	5	5	5		5.00
Hydrologic/Geologic function, Hydro-Alteration Average Score										5.00

Ground Water Monitoring (III.E.2)										
Ground water quantity	III.E.2.b	5	X	5	5	5	X	5		5.00
Ground Water Monitoring Average Score										5.00
Surface Water Monitoring (III.E.3)										
Surface water quantity	III.E.3.b	5	X		5	5	X	3		4.50
Surface Water Monitoring Average Score										4.50
Resource Protection (III.F)										
Boundary survey	III.F.1	5	5	4	5	5	4	5		4.71
Gates & fencing	III.F.2	5	5	4	5	5	4	4		4.57
Signage	III.F.3	4	5	3	5	4	4	4		4.14
Law enforcement presence	III.F.4	5	4	3	5	4	4	5		4.29
Resource Protection Average Score										4.43
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	5	5	4	5		4	5		4.67
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	5		5.00
Parking	IV.1.b	5	5	5	5	5	4	5		4.86
Boat Access	IV.1.c	5	5	5	5	5	4	5		4.86
Environmental Education & Outreach										
Wildlife	IV.2.a	5	5	4	5	5	5	5		4.86
Invasive Species	IV.2.b	5		4	5	3	5	3		4.17
Habitat Management Activities	IV.2.c	5		4	5	4	5	4		4.50
Interpretive facilities and signs	IV.3	5	5	3	5	5	4	4		4.43
Recreational Opportunities	IV.4	5	5	5	5	5	5	4		4.86
Management of Visitor Impacts	IV.5	5	5	5	5	4	4	4		4.57
Public Access & Education Average Score										4.68
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	5	5	5	5	5	4	5		4.86
Sanitary facilities	V.1.b	5	5	5	5	5	5	5		5.00
Buildings										
Buildings	V.2.a	5	5	5	5	5	4	5		4.86
Equipment	V.2.b	5	4	5	4	3	3	5		4.14
Staff	V.3	5	4	3	5	4	3	5		4.14
Funding	V.4	4	3	3	4	4	3	4		3.57
Management Resources Average Score										4.43

Color Code:

Excellent	Above Average	Below Average	Poor
	Missing Vote	Insufficient Information	

See Appendix A for detail

3. Land Management Plan Review Details

3.1 Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

1. **Natural Communities, specifically slough, received a below average score. This is an indication that the management plan does not sufficiently address current or desired condition and/or future management actions to protect or restore.**

Managing Agency Response: This issue will be addressed in the next 10 Year Plan currently under revision. The 2016-2017 FNAI surveys have proved valuable in identifying slough habitats for better management. It's understood that sloughs are vulnerable to hydrologic disturbance. Progress on hydrologic restoration on Tate's Hell should further the recovery and management of the small irregular sloughs that exist in the mosaic of wetlands across Tate's Hell.

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)										
Wet Flatwoods	I.A.1	5	5	4	5	5	4	4		4.57
Basin Swamp	I.A.2	5	5	4	5	5	4	4		4.57
Mesic Flatwoods	I.A.3	5	5	4	5	5	4	4		4.57
Wet Prairie	I.A.4	5	5	4	5	5	4	1		4.14
Shrub Bog	I.A.5	5	5	4	5	5	4	4		4.57
Baygall	I.A.6	5	5	4	5	5	4	1		4.14
Floodplain Swamp	I.A.7	5	5	4	5	5	4	4		4.57
Dome Swamp	I.A.8	5	3	4	5	5	4	1		3.86
Bottomland Forest	I.A.9	5	5	4	5	5	4	1		4.14
Floodplain Marsh	I.A.10	5	5	4	5	5	4	1		4.14
Scrubby Flatwoods	I.A.11	5	3	4	5	5	4	4		4.29
Scrub	I.A.12	5	4	4	5	5	4	4		4.43
Basin Marsh	I.A.13	5	5	4	5	5	4			4.67
Sandhill	I.A.14	5	5	4	5	5	4	4		4.57
Blackwater Stream	I.A.15	5	3	4	5	5	4	1		3.86
Depression Marsh	I.A.16	5	4	4	5	5	3	1		3.86
Slough	I.A.17	1	2	4	5	1	4	1		2.57
Natural Communities Average Score										4.21
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	3	4		4	4		4.17

Red-Cockaded Woodpecker	I.B.1.a	5	5	3	1	1	4	3		3.14
Flatwoods Salamander	I.B.1.b	5	5	3	1		4	4		3.67
Plants	I.B.2	5	5	5	3		4	5		4.50
Listed Species Average Score										3.87
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	4	3	4	4	5		4.29
Other non-game species or their habitat monitoring	I.C.3	5	5		3	5	4	5		4.50
Fire effects monitoring	I.C.4	5	5		5	5	4	5		4.83
Other habitat management effects monitoring	I.C.5	5	5		5	5	4	5		4.83
Invasive species survey / monitoring	I.C.6	5	5		5	5	4	5		4.83
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	5	4	5	5	4	5		4.71
Protection and preservation	II.B	5	5	4	5	5	4	5		4.71
Cultural Resources Average Score										4.71
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	5	4	5		4.86
Frequency	III.A.2	5	5	5	5	5	4	5		4.86
Quality	III.A.3	5	5	5	5	5	4	5		4.86
Resource Management, Prescribed Fire Average Score										4.86
Restoration (III.B)										
Hydrology	III.B.1	5	5	5	3	5	4	5		4.57
Flatwoods Thinning	III.B.2	5	5	5	3	5	4	5		4.57
Longleaf Pine Thinning	III.B.3	5	5	5	3	5	4	5		4.57
Restoration Average Score										4.57
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	5	5	5	5	5	4	5		4.86
Timber Harvesting	III.C.2	5	5	5	5	5	4	5		4.86
Reforestation/Afforestation	III.C.3	5	5	5	5	5	4	5		4.86
Site Preparation	III.C.4	5	5	4	5	5	4	5		4.71
Forest Management Average Score										4.82
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	5	5	5	5	4	5		4.86
prevention - animals	III.D.1.b	5	5	5	5	5	4	5		4.86
prevention - pests/pathogens	III.D.1.c	5	5		5	4	4	5		4.67
Control										
control - plants	III.D.2.a	5	5	5	5	5	4	5		4.86
control - animals	III.D.2.b	5	5	5	5	5	4	5		4.86
control - pest/pathogens	III.D.2.c	5	5	5	5	4	4	5		4.71
Non-Native, Invasive & Problem Species Average Score										4.80

Hydrologic/Geologic function, Hydro-Alteration (III.E.1)											
Roads/culverts	III.E.1.a	5		5	5	5	4	5		4.83	
Ditches	III.E.1.b	5		5	5	5	4	5		4.83	
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.83	
Ground Water Monitoring (III.E.2)											
Ground water quantity	III.E.2.b	5	3	5	5	5	3	4		4.29	
Ground Water Monitoring Average Score										4.29	
Surface Water Monitoring (III.E.3)											
Surface water quantity	III.E.3.b	5	4		5	5	3	1		3.83	
Surface Water Monitoring Average Score										3.83	
Resource Protection (III.F)											
Boundary survey	III.F.1	5	5	4	5	5	4	5		4.71	
Gates & fencing	III.F.2	5	4	4	5	5	4	1		4.00	
Signage	III.F.3	5	5	4	5	4	4	1		4.00	
Law enforcement presence	III.F.4	5	5	4	5	4	4	5		4.57	
Resource Protection Average Score										4.32	
Adjacent Property Concerns (III.G)											
Land Use											
Inholdings/additions	III.G.2	5	4	4	5	4	4	5		4.43	
Discussion of Potential Surplus Land Determination	III.G.3	5	5	4	5	5	4	5		4.71	
Surplus Lands Identified?	III.G.4	5	5	4	5	5	4	5		4.71	
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)											
Public Access											
Roads	IV.1.a	5	5	5	5	5	4	5		4.86	
Parking	IV.1.b	5	4	4	5	5	4	5		4.57	
Boat Access	IV.1.c	5	5	4	5	5	4	5		4.71	
Public Access & Education (IV.2, IV.3, IV.4, IV.5)											
Wildlife	IV.2.a	5	5	4	5	5	4	5		4.71	
Invasive Species	IV.2.b	5	3	4	5	3	4	3		3.86	
Habitat Management Activities	IV.2.c	5	5	4	5	4	4	4		4.43	
Interpretive facilities and signs	IV.3	5	4	4	5	5	4	4		4.43	
Recreational Opportunities	IV.4	5	4	4	5	5	4	4		4.43	
Management of Visitor Impacts	IV.5	5	4	4	5	4	4	4		4.29	
Public Access & Education Average Score										4.48	
Managed Area Uses (VI.A, VI.B)											
Existing Uses											
Fishing	VI.A.1	5	5	4	5	5	5	5		4.86	
Hunting	VI.A.2	5	5	4	5	5	5	5		4.86	
Horseback riding	VI.A.3	5	5	4	5	5	5	5		4.86	
Camping	VI.A.4	5	5	4	5	5	5	5		4.86	
Nature study	VI.A.5	5	5	4	5	5	5	5		4.86	
Wildlife observation	VI.A.6	5	5	4	5	5	5	5		4.86	

Hiking / bicycling	VI.A.7	5	5	4	5	5	5	5		4.86
Apiary	VI.A.8	5	5	4	5	5	5	5		4.86
OHV	VI.A.9	5	3	4	4	5	5	5		4.43
Managed Area Uses Average Score										4.81

Proposed Uses				
Color Code:	Excellent	Above Average	Below Average	Poor
		Missing Vote	Insufficient Information	
				See Appendix A for detail

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

Exhibit V

Compliance with Local Comprehensive Plan(s)
(Will be inserted once received)

FRANKLIN COUNTY

REPLY TO: ☐
BOARD OF COUNTY COMMISSIONERS
33 MARKET STREET, SUITE 203
APALACHICOLA, FL 32320
(850) 653-8861, EXT. 100
(850) 653-4795 FAX



REPLY TO: ☒
PLANNING & BUILDING DEPARTMENT
34 FORBES STREET, SUITE 1
APALACHICOLA, FL 32320
(850) 653-9783
(850) 653-9799 FAX

March 21, 2019

Ms. Patti Anderson
State Lands Plan Coordinator
Florida Forest Service
Department of Agriculture and Consumer Services
The Conner Building
3125 Conner Boulevard
Tallahassee, Florida 32399-1650

RE: Tate's Hell State Forest 10-Year Land Management Plan

Dear Ms. Anderson:

I have reviewed the proposed 10-Year Land Management Plan for Tate's Hell State Forest and find it to be consistent with Franklin County's Local Comprehensive Plan.

If you have any questions about this matter you can contact me at 850-653-9783 x-160 or markc@franklincountyflorida.com.

Sincerely,

A handwritten signature in blue ink that reads "Mark C. Curenton".

Mark C. Curenton
County Planner

RICKY D. JONES
DISTRICT ONE

BERT BOLDT
DISTRICT TWO

NOAH LOCKLEY, JR.
DISTRICT THREE

JOSEPH PARRISH
DISTRICT FOUR

WILLIAM MASSEY
DISTRICT FIVE



***Liberty County
Board of County Commissioners***

Post Office Box 399
Bristol, Florida 32321
Phone: (850) 643-5404



April 4, 2019

Ms. Patti Anderson, State Land Plan Coordinator
Florida Department of agriculture
Florida Forest Service
The Conner Building
3125 Conner Boulevard
Tallahassee, FL 32399-1650

Dear Ms. Anderson,

Liberty County has completed the review of the Florida Forest Service's Ten-year Resource Management Plan and Plan Exhibits for Tate's Hell State Forest and determined that the Plan is not in conflict with any of the Goals, Objectives and Policies or the Land Uses designated on the adopted Future Land Use Map. Therefore, the Liberty County Commission has concluded that the Plan is consistent with the Liberty County 2025 Comprehensive Plan.

If you have any questions or need additional information please contact Tony Arrant, the Liberty County Planner. Thank you for the opportunity to review the Management Plan and comment on the future management of this resource.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dwayne Branch".

Honorable Dwayne Branch, Chairman
Liberty County Board of County Commissioners

Exhibit W

State Forest Management Plan Advisory Group Summary

Management Plan Advisory Group Organizational Meeting

Tate's Hell State Forest

10-Year Land Management Plan

March 7, 2019

10:30 a.m.

Meeting Minutes

MPAG Members Present:

- | | |
|-------------------|---|
| • Chris Colburn | Tallahassee Forestry Center Manager, Florida Forest Service (FFS) |
| • Phil Manor | District Biologist, Florida Fish and Wildlife Conservation Commission (FWC) |
| • Linda Chaisson | Senior Land Management Spec., NW Florida Water Management District |
| • David Nicholson | District Biologist NWTF Representing Ricky Lackey |
| • Thomas Herzog | Local Property Owner |

MPAG Members Not Present:

- | | |
|--------------------|---|
| • Mike Branch | Florida Forestry Association |
| • Ricky Lackey | District Biologist NWTF |
| • Walter Armistead | Soil and Conservation District Representative |
| • Carmon Brownell | Local Property Owner |
| • William Massey | Franklin County Commissioner |
| • Scott Phillips | Liberty County Commissioner |

Staff:

- Alan Davis, Land Planning Coordinator, FFS
- Patti Anderson, Assistant Land Planning Coordinator, FFS
- Beth Christopher, Forestry Supervisor II, FFS
- Vitor Aguiar, Forester, FFS
- Alex Skovronsky, Senior Forester, FFS
- Joey Taranto, Forest Area Supervisor, FFS

Guests:

- Leslie Cox, Landowner
- Chester Butler, Landowner
- CJ Langston, CEM
- Chris Langston, CEM
- Brian Grenard, Citizen
- Cheryl Sanders, Citizen

Meeting Start Time: 10:30 a.m.

- Mr. Davis opened the meeting, introduced himself, and explained the purpose, statutory framework and management plan development process within which MPAG members are called upon to provide input into the draft land management plan.
- Mr. Davis explained the Sunshine Law's role in the MPAG public hearings and MPAG member appointment.

- Mr. Davis stated the MPAG meeting was advertised to the public through local newspaper, Apalach Times, Florida Administrative Register, FFS webpage, as well as posted on the kiosk at the entrance to the forest. The meeting was also announced at the Board of County Commissioners meetings on 2/7/19 in Liberty County and 2/19/19 in Franklin County.
- Mr. Davis provided an overview of the various approvals the draft land management plan must go through both before and after the MPAG public hearings occur.
- Next, everyone in the room introduced themselves and stated what entity or organization they are with, and/or why they have interest in the meeting.
- Mr. Davis explained the concept of consensus and how it relates to the group's determinations. He also explained that the FFS Director is the ultimate authority on any changes made to the draft plan.
- Mr. Davis stated that after a PowerPoint presentation at the public hearing, there would be a question and answer session, and all were welcome to ask questions. Mr. Davis encouraged MPAG members to listen for the public's ideas/concerns during the hearing. He advised that at the MPAG Workshop meeting following the hearing there would be an opportunity to share their thoughts on what they heard from the public and their ideas on the draft management plan.
- Mr. Davis then asked the advisory group to designate a chairperson. All agreed to designate Chris Colburn as MPAG chairperson.
- Mr. Davis thanked everyone and adjourned the organizational meeting.

Meeting End Time: 10:35 a.m.

Management Plan Advisory Group Public Hearing

Tate's Hell State Forest

10-Year Land Management Plan

March 7, 2019

11:00 a.m.

Meeting Minutes

MPAG Members Present:

- | | |
|-------------------|---|
| • Chris Colburn | Tallahassee Forestry Center Manager, Florida Forest Service (FFS) |
| • Phil Manor | District Biologist, Florida Fish and Wildlife Conservation Commission (FWC) |
| • Linda Chaisson | Senior Land Management Spec., NW Florida Water Management District |
| • David Nicholson | District Biologist NWTF representing Ricky Lackey |
| • Thomas Herzog | Local Property Owner |

MPAG Members Not Present:

- | | |
|--------------------|---|
| • Mike Branch | Florida Forestry Association |
| • Ricky Lackey | District Biologist NWTF |
| • Walter Armistead | Soil and Conservation District Representative |
| • Carmon Brownell | Local Property Owner |
| • William Massey | Franklin County Commissioner |
| • Scott Phillips | Liberty County Commissioner |

Staff:

- Alan Davis, Land Planning Coordinator, FFS
- Patti Anderson, Assistant Land Planning Coordinator, FFS
- Beth Christopher, Forestry Supervisor II, FFS
- Vitor Aguiar, Forester, FFS
- Alex Skovronsky, Senior Forester, FFS
- Joey Taranto, Forest Area Supervisor, FFS

Guests:

- Leslie Cox, Landowner
- Chester Butler, Landowner
- CJ Langston, CEM
- Chris Langston, CEM
- Brian Grenard, Citizen
- Cheryl Sanders, Citizen

Meeting Start Time: 11:00 a.m.

- Mr. Davis introduced MPAG chairperson Chris Colburn.
- Mr. Colburn, the MPAG Chairperson, acknowledged DEP for the use of their facility and welcomed everyone to the public hearing and thanked everyone for coming and asked members to introduce themselves.
- Mr. Davis explained the purpose of the public hearing.

- Mr. Davis stated that at this time, three (3) speaker forms were filled out. He encouraged all visitors to complete a speaker form which could also be used also to provide FFS with written comments on the plan.
- Mr. Davis then introduced Beth Christopher, Forestry Supervisor II, FFS.
- Ms. Christopher welcomed everyone and gave a PowerPoint presentation on the draft plan. The plan included the location of Tate's Hell State Forest with its boundaries, Florida statutes concerning State Forest management, historical data and nine (9) goals and objectives to be accomplished on the forest during the next ten (10) years.
- Mr. Davis thanked Ms. Christopher. Mr. Davis then asked FFS staff to proceed to the front of the room for a question and answer session.
- A guest inquired about the source of the material for the 850 miles of road. Ms. Christopher replied that the stone is from Perry Quarry.
- Mr. Manor inquired about the plan year missing from the cover page. Mr. Davis explained submittal timeframe and that it would be entered upon draft completion.
- Mr. Davis then called for the speakers to proceed to the front.

Speaker 1

Mr. Chester Butler shared his opinion that mining fossilized shell, limestone and sand is incompatible with the objectives of the plan.

Speaker 2

Ms. Leslie Cox commended work done on the forest and work planned for the future to protect resources. She suggested, Alligator Harbor be added for the proximity to managed lands section and McKissack Beach be added to the optimal management boundary. She stated that the new recreation area (on Highway 98) was a good idea and would like to recommend a vaulted toilet be installed. She agreed with Mr. Butler's opinion that the forest's resources not be mined.

Speaker 3

Mr. Chris Langston of Coastline Environmental stated that data supports the use of fossilized shell and would like to see the plan include case by case land uses to identify minerals for dedicated mining.

Speaker 4

Ms. Cheryl Sanders commended FFS for 25 years of work on THSF and applauded their quick response after Hurricane Michael in time for hunting season. She also praised their coordination with FWC in controlling feral hogs.

- Mr. Davis thanked the speakers for their comments.
- With no other speakers, Mr. Davis thanked everyone for their time and input, and adjourned the public hearing.

Meeting End Time: 11:38 a.m.

Management Plan Advisory Group Workshop Meeting

Tate's Hell State Forest

10-Year Land Management Plan

March 7, 2019

1:30 p.m.

Meeting Minutes

MPAG Members Present:

- | | |
|-------------------|---|
| • Chris Colburn | Tallahassee Forestry Center Manager, Florida Forest Service (FFS) |
| • Phil Manor | District Biologist, Florida Fish and Wildlife Conservation Commission (FWC) |
| • Linda Chaisson | Senior Land Management Spec., NW Florida Water Management District |
| • David Nicholson | District Biologist NWTF Representing Ricky Lackey |
| • Thomas Herzog | Local Property Owner |

MPAG Members Not Present:

- | | |
|--------------------|---|
| • Mike Branch | Florida Forestry Association |
| • Ricky Lackey | District Biologist NWTF |
| • Walter Armistead | Soil and Conservation District Representative |
| • Carmon Brownell | Local Property Owner |
| • William Massey | Franklin County Commissioner |
| • Scott Phillips | Liberty County Commissioner |

Staff:

- Alan Davis, Land Planning Coordinator, FFS
- Patti Anderson, Assistant Land Planning Coordinator, FFS
- Beth Christopher, Forestry Supervisor II, FFS
- Vitor Aguiar, Forester, FFS
- Alex Skovronsky, Senior Forester, FFS
- Joey Taranto, Forest Area Supervisor, FFS

Meeting Start Time: 1:30 p.m.

- Mr. Davis started the meeting by going over the meeting structure that would take place and specifics regarding Forestry staff and MPAG member responsibilities for the meeting minutes in the coming days/week.
- Mr. Davis declared a "page-by-page" process would be used for reviewing and commenting on the draft plan. The notion of "consensus" was again addressed.
- Mr. Davis asked if there are any discussions or thoughts on mining. Any comments on vaulted toilet. Consensus is that the vaulted toilet is a good idea. Discussion regarding Mr. Langston's comments: None. Discussion regarding Ms. Sanders' comments: None.

Page 1. LMR's to be added to Exhibits

Page 4. Part B. Verify figures are correct

Exhibit A. Add RCW cluster (2017)

Page 6. Strike Objective 5, updated rules posted. Add link in plan.

Page 7. Objective 4 completed and signed off this week. Strike Objective 4. Updated Objective 5.

Page 14. 1. Property Boundaries Establishment and Preservation, added "Exhibit B",

Page 16. Exhibit V replaces U (compliance).

Page 21. Exhibit K soils legend should be SW instead of SE.

Page 22. Verbiage change to "include Graham Creek, Deep Creek, and Fort Gadsden Creek".

Page 24. Strike "and species of special concern".

Page 26. Check FNAI ranking in Table 5.

Page 28. Strike "bird".

Page 29. Added "FNAI".

Page 29. Mr. Manor will send monitoring/survey list for possible insertion.

Page 33. Added "boating".

Page 34. Added "Installing a vaulted restroom at the Vinard's Place Day Use Area will be considered depending on funding availability."

Page 36. A. Prescribed Fire. Added "/chemical".

Page 58. Management Needs. Added "Efforts should be made to convert off-site pine to longleaf pine whenever feasible and applicable."

Page 61. Management Needs. Added "Convert off-site pine to longleaf pine when applicable and feasible".

- Mr. Davis asked the group if everyone, as a consensus, was generally accepting of the plan. All agreed.
- Mr. Davis explained the next steps of the process, and the FFS Director makes the final decision on any edits to the plan. The next public hearing will be at the Acquisition and Restoration Council (ARC) meeting on August 16, 2019.
- Mr. Davis thanked everyone for their time and participation, then adjourned the workshop meeting.

Meeting End Time: 2:26 p.m.

Exhibit X

State Forest Summary Budget

	Tate's Hell STATE FOREST MGT. ONLY 17- 18 EXPENDITURES	Percentages Based on Total Dollar Amount of Expenditures	Assessed Needed Funding Based Upon LMUAC Resource Management
Resource Management	\$ 494,718	25.50%	\$ 931,248.79
Exotic Species Control	\$ 70,885	4.10%	\$ 149,730.16
Prescribed Burning	\$ 102,255	2.80%	\$ 102,255.00
Cultural Resources Management	\$ 1,729	0.10%	\$ 3,651.96
Timber Management	\$ 146,957	8.50%	\$ 310,416.18
Hydrological Management	\$ 8,645	0.50%	\$ 18,259.78
	\$ -		\$ -
<u>OTHER RESOURCE MANAGEMENT</u>	\$ 164,247	9.50%	\$ 346,935.73
Listed Species Management	\$ -		\$ -
Forest Pest and Disease	\$ -		\$ -
Plant Conservation Program	\$ -		\$ -
State Forest Research Projects	\$ -		\$ -
Boundary Surveys for State Forests	\$ -		\$ -
<u>Other Activities Also Include:</u>	\$ -		\$ -
Liaison Community Meetings / Boundary Line Maintenance / Forest Inventories and Various Other Activities / Wildfire Suppression on State Forests			
			\$ -
Administration	\$ 124,482	7.20%	\$ 262,940.76
Central Office Headquarters	\$ 124,482	7.20%	\$ 262,940.76
District/Regions	\$ -		\$ -
Units/Projects	\$ -		\$ -
	\$ -		\$ -
Support	\$ 586,101	33.90%	\$ 1,238,012.75
Land Management Planning	\$ 24,205	1.40%	\$ 51,127.37
Land Management Reviews	\$ 6,916	0.40%	\$ 14,607.82
Training/Staff Development	\$ 165,975	9.60%	\$ 350,587.68
Vehicle Purchase	\$ 15,560	0.90%	\$ 32,867.60
Vehicle Operations and Maintenance	\$ 247,234	14.30%	\$ 522,229.57
	\$ -		\$ -
OTHER SUPPORT	\$ 126,211	7.30%	\$ 266,592.72
State Forest Land Acquisition Support			\$ -
<u>Other Support Activities Also Include:</u>	\$ -		\$ -
Computer Maintenance / Radio Maintenance / Technical Support / Management of Apiary and Cattle Leases / State Forest Leases, Lease Amendments, Easements and Other Various Activities	\$ -		\$ -
			\$ -
Capital Improvements	\$ 354,427	20.50%	\$ 748,650.78
New Facility Construction	\$ 88,174	5.10%	\$ 186,249.71
Facility Maintenance	\$ 266,252	15.40%	\$ 562,401.07
			\$ -
Visitor Services/Recreation	\$ 223,030	12.90%	\$ 471,102.20
Information/Education	\$ 51,867	3.00%	\$ 109,558.65
Operations	\$ 171,162	9.90%	\$ 361,543.55
			\$ -
Law Enforcement	\$ -	0.00%	\$ -
Total	\$ 1,728,911	100.00%	\$ 3,651,955

Exhibit Y

Arthropod Control Plans on THSF Responses from Franklin County, Florida and Liberty County, Florida

376 SR 65
Eastpoint, Florida 32328
Fax: (850) 670-8738



James "Dewitt" Polous
Director
PH: (850) 670-8730

Reducing the Mosquito Population ~~ Improving Your Quality of Life

Mission Statement: **Franklin County Mosquito Control Division** provides for the abatement or suppression of mosquitoes for the entire county. Our goal is to maintain a low mosquito population by larvaciding, trapping, pinpointing breeding locations, and identifying species to provide the citizens and guests of **Franklin County** with a safe and pleasant environment whereby the threat and/or spread of disease to humans and livestock is minimized.

Mr. Davis,

Franklin County does not and has not conducted any anthropod activity in the Tates Hell Management Area, therefore we do not feel an anthropod control plan is necessary. Franklin county only treats the populated areas.

Sincerely,

A handwritten signature in black ink that reads 'James D. Polous'.

James "Dewitt" Polous
Director
Franklin County Mosquito Control



Liberty County
Board of County Commissioners

Post Office Box 399
Bristol, Florida 32321
Phone: (850) 643-5404



Liberty County has not conducted any mosquito control activities in the Tate's Hell State Forest, and are not proposing to do so in the future. Therefore, an ACP will not be necessary.

We are open to providing Arthropod Control if events ever dictate or becomes necessary.

Signed,

A handwritten signature in black ink, appearing to read "Stephen Ford".

Stephen Ford
Mosquito Control Director