

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<br>(Indicate Species &<br>Bareroot (B) or<br>Containerized (C)) | Slash Bareroot                   | Nb.        | 1,214,645 | 420,000   | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 386,232   | 0         | 20,207,777  |
|                                                                          |                                  | Acres      | 1,723     | 529       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 532       | 0         | 2,780       |
|                                                                          | Containerized LL                 | Nb.        | 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       |           | 1,337       |
|                                                                          | Hardwood                         | Nb.        | 0         | 0         | 0         | 6,000     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 6,000       |
|                                                                          |                                  | Acres      | 0         | 0         | 0         | 23        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 20          |
|                                                                          | OTHER                            | Nb.        | 0         | 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         | 0         | 418         |
|                                                                          |                                  |            |           |           |           |           |           |           |           |           |           |           |           |           |             |
| Seedling Survival Checks                                                 | Survival Checks                  | Acres      | 1,759     | 2,372     | 732       | 703       | 0         | 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       | 732       | 755       | 667       | 1003      |           | 6,664       |
|                                                                          |                                  |            |           |           |           |           |           |           |           |           |           |           |           |           |             |
| Site Preparation<br>(pre-plant)                                          | Chop Single Pass                 | Acres      | 438       | 1,754     | 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         | 551       | 0         |           | 2,489       |
|                                                                          | Burn                             | Acres      | 0         | 0         | 0         | 92        | 0         | 0         | 0         | 170       | 0         | 576       | 0         |           | 838         |
|                                                                          | Mowing                           | Acres      | 0         | 219       | 0         | 10        | 0         | 30        | 0         | 40        | 0         | 25        | 11        |           | 335         |
|                                                                          |                                  |            |           |           |           |           |           |           |           |           |           |           |           |           |             |
| Control<br>(Indicate Species)                                            | Air Potato                       | Acres      | 0         | 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         | 0         | 4           |
|                                                                          | Cogon Grass                      | Acres      | 0         | 0         | 2         | 1         | 0         | 0         | 20        | 5         | 8         | 9         | 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         | 1           |
|                                                                          | Mimosa Tree                      | Acres      | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 2         | 0         | 0         | 2           |
|                                                                          |                                  |            |           |           |           |           |           |           |           |           |           |           |           |           |             |
| Timber Stand Improvement                                                 | Mechanical Treatments - Chopping | Acres      | 0         | 7         | 0         | 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         | 0         | 1,419       |
|                                                                          | Sale Acreage to Cruise           | Acres      | 9,195     | 171       | 140       | 571       | 4,126     | 4,148     | 4,131     | 1,637     | 99        | 198       | 502       |           | 24,919      |
| Current Year Sales                                                       | Harvest                          | Acres      | 0         | 3597      | 1,168     | 5,487     | 7,123     | 2,564     | 3,442     | 4,116     | 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         | 0           |
|                                                                          |                                  | Tons       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0           |
|                                                                          |                                  |            |           |           |           |           |           |           |           |           |           |           |           |           |             |
| Recreation                                                               | Day Use                          | Nb.        | 378       | 30,028    | 36,729    | 245,724   | 563,835   | 230,047   | 386,650   | 256,379   | 252,336   | 254,936   | 247,496   |           | 2,504,697</ |

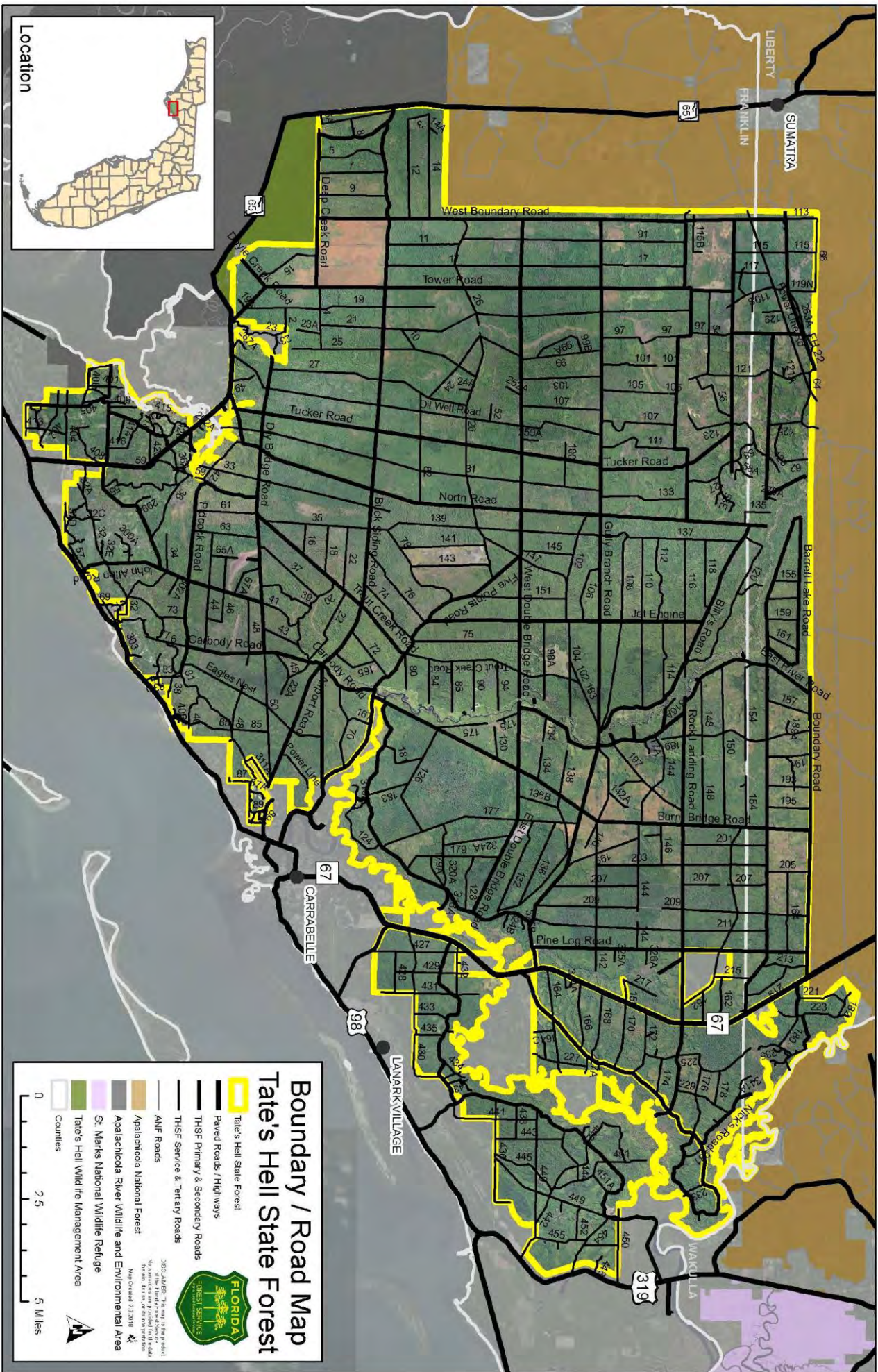
## Exhibit B

### Boundary Maps





Location



### Boundary / Road Map Tate's Hell State Forest

**Legend:**

- 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 Refuge
- St. Marks National Wildlife Refuge
- Tate's Hell Wildlife Management Area
- Counties

**Scale:**

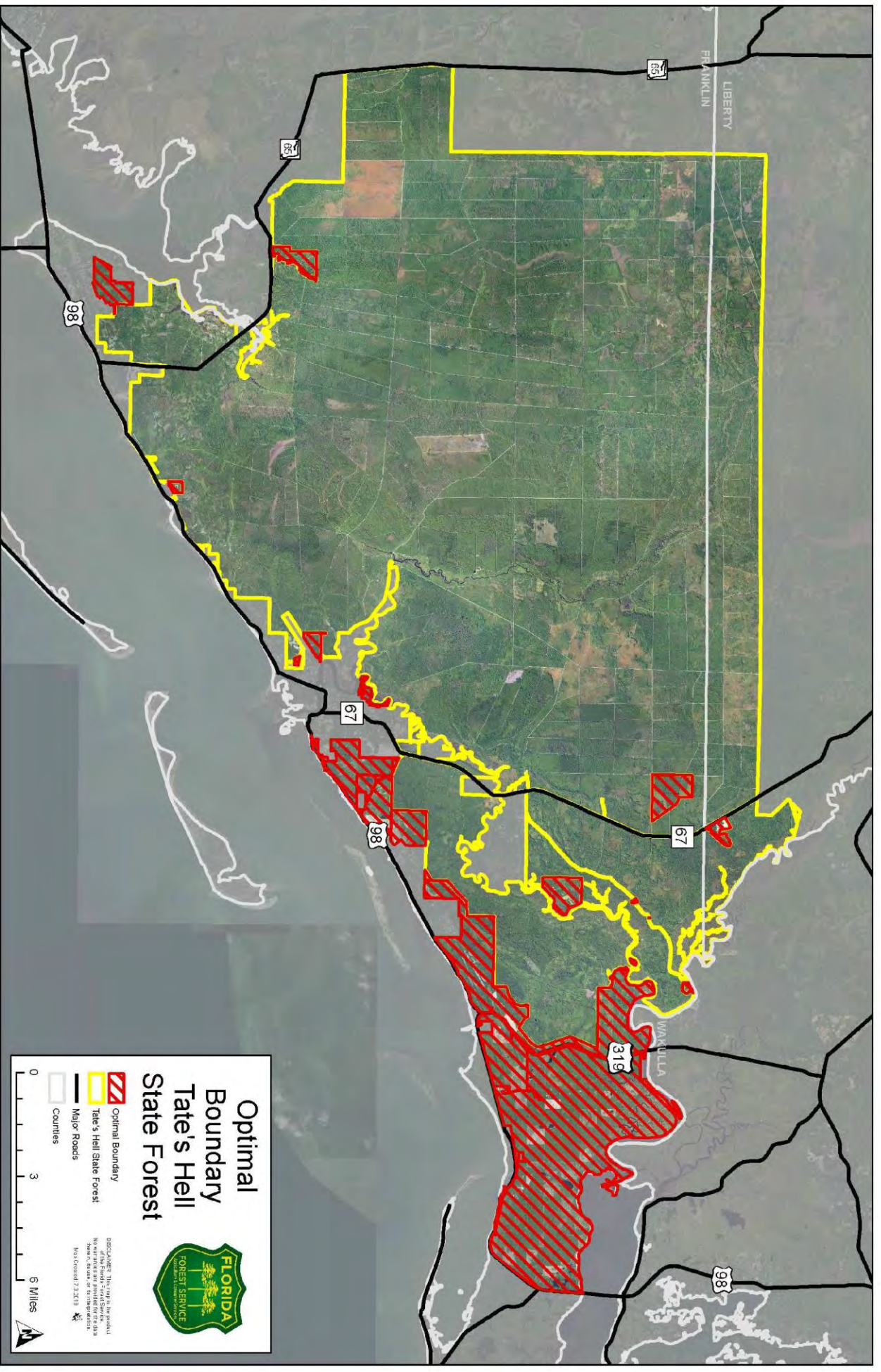
0 2.5 5 Miles

**Florida Department of Natural Resources**  
**Forest Service**  
 2005/2006 The map is a product of the Florida Department of Natural Resources and is provided for informational purposes only. It is not intended to be used for legal or other purposes. Map Created 7/2010

## Exhibit C

### Optimum Management Boundary Map

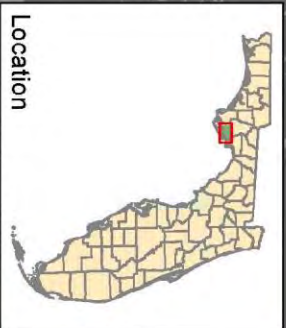




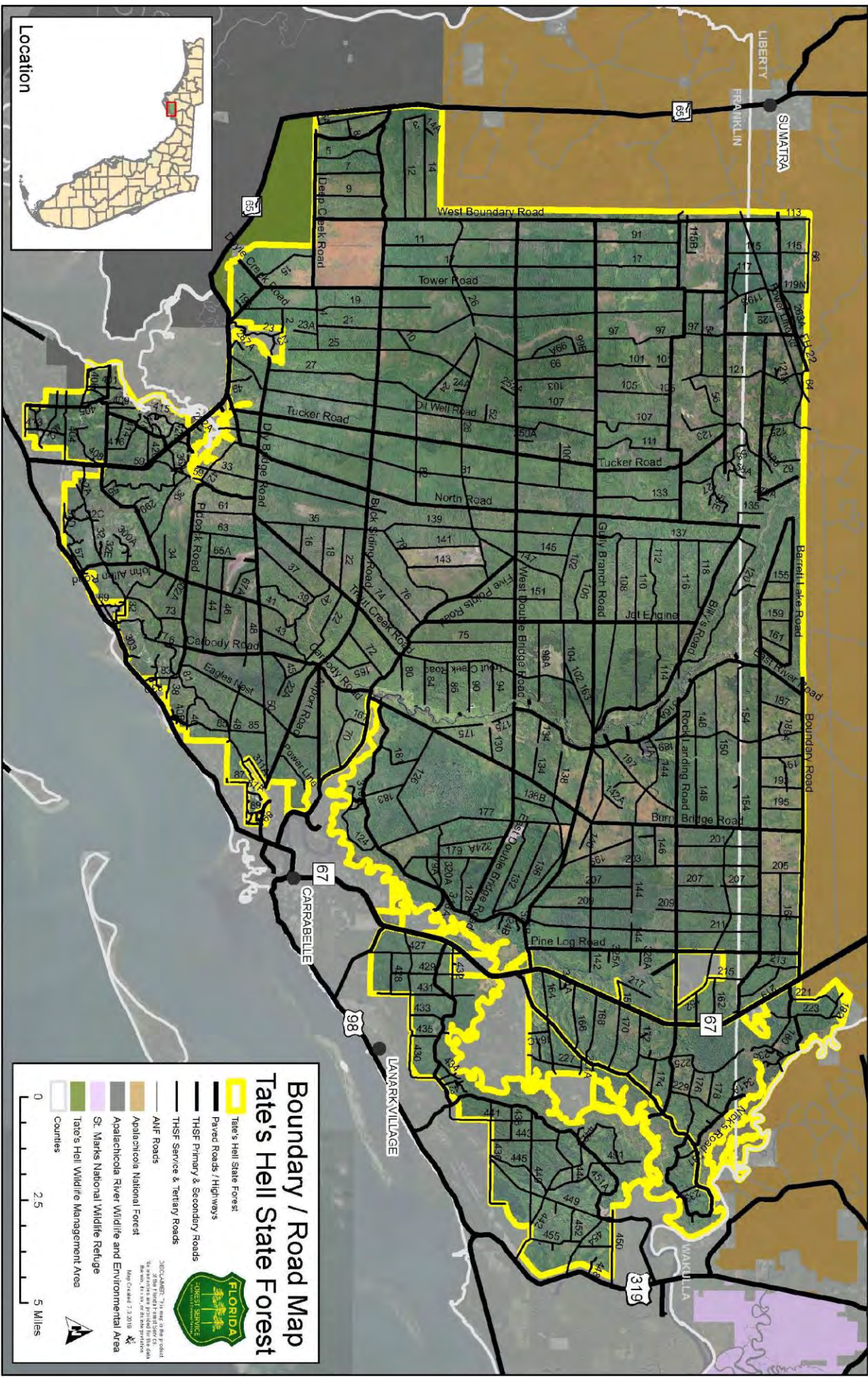
## Exhibit D

### Road Map



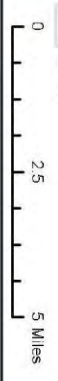


Location



# 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

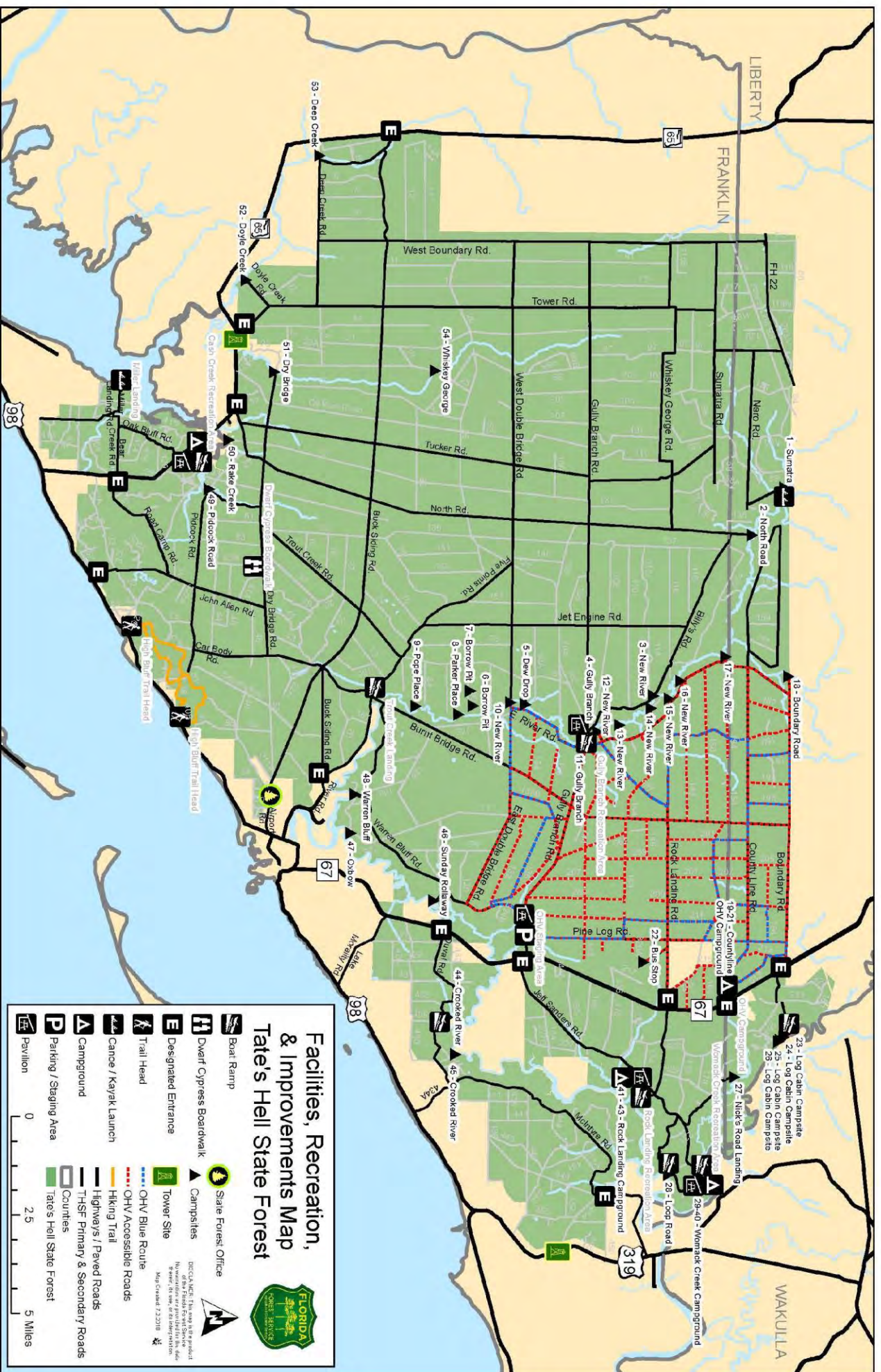


DISCLAIMER: This map is for general information only. It is not intended to be used for legal purposes. The information is provided for informational purposes only. Map Created 7/3/2018

## Exhibit E

### Facilities, Recreation, and Improvements

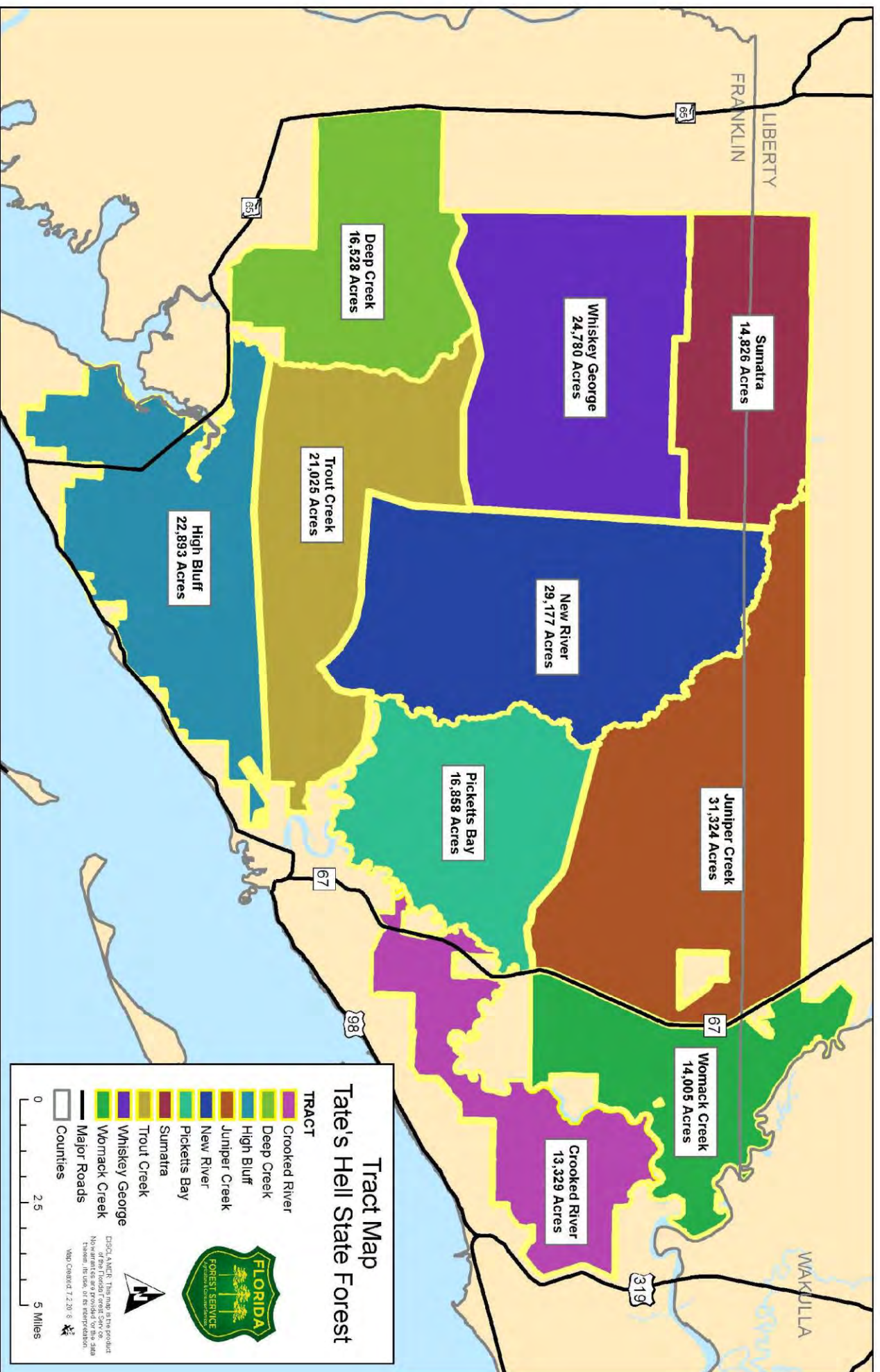




## Exhibit F

### Tract & Acreage Maps





## Exhibit G

### Proximity to Significant Managed Lands

# Significant Managed Lands

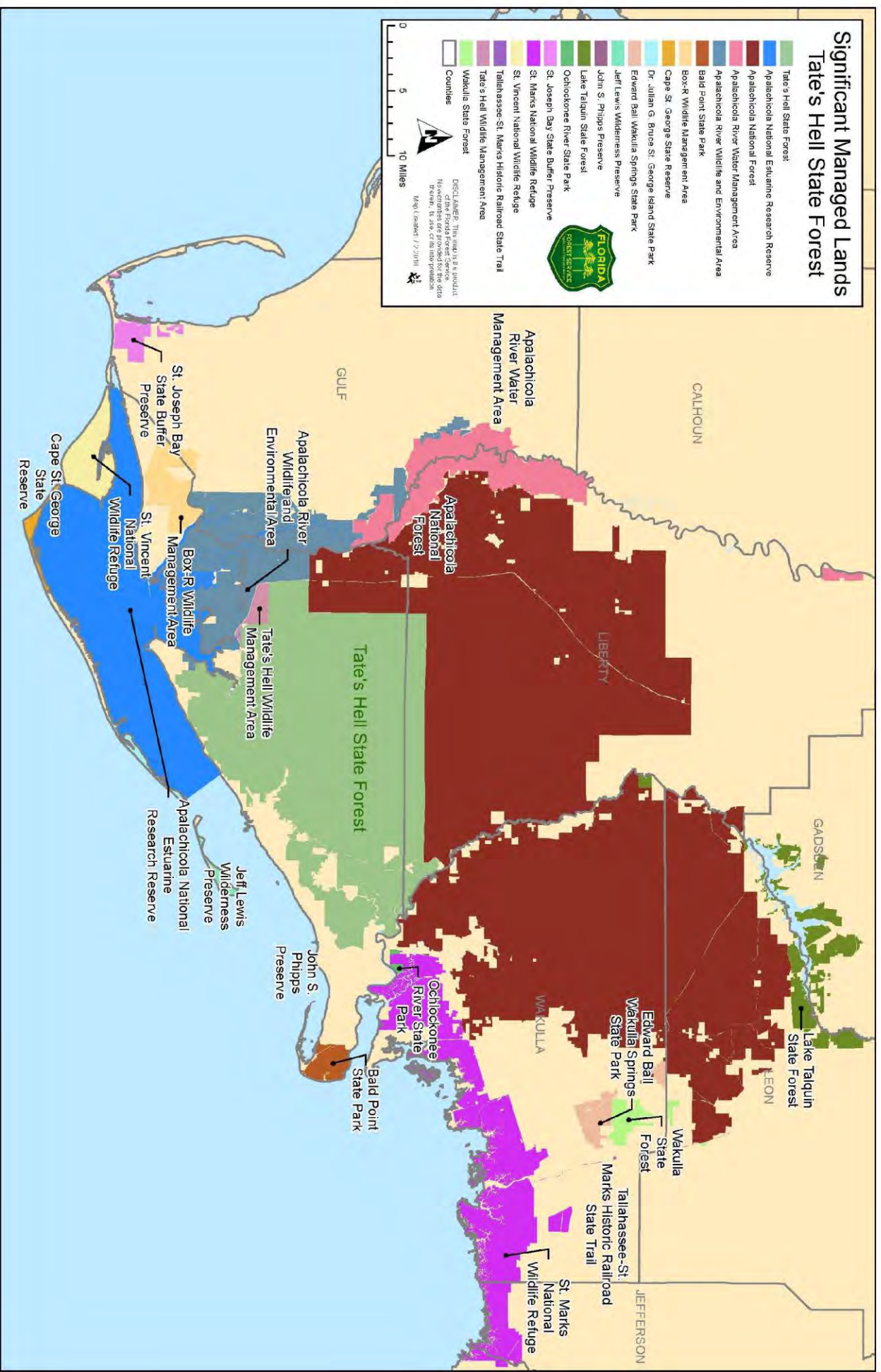
## Tate's Hell State Forest

Legend:

- Tate's Hell State Forest
- Apalachicola National Estuarine Research Reserve
- Apalachicola National Forest
- Apalachicola River Water Management Area
- Apalachicola River Wildlife and Environmental Area
- Bald Point State Park
- Box-R Wildlife Management Area
- Cape St. George State Reserve
- Dr. Julian G. Bruce St. George Island State Park
- Edward Ball Wildlife Springs State Park
- Jeff Lewis Wilderness Preserve
- John S. Phillips Preserve
- Lake Talquin State Forest
- Ochlocknee River State Park
- St. Joseph Bay State Buffer Preserve
- St. Marks National Wildlife Refuge
- St. Vincent National Wildlife Refuge
- Tallahassee-St. Marks Historic Railroad State Trail
- Tate's Hell Wildlife Management Area
- Wadley State Forest
- Counties

Scale: 0, 5, 10 Miles

DISCLAIMER: This map is a public product of the Florida Forest Service. It is not intended to be used for land management purposes. Map created 7/2018.





## 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; Tate's Hell/Carrabelle Tract

| St. Joe Timberland<br>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

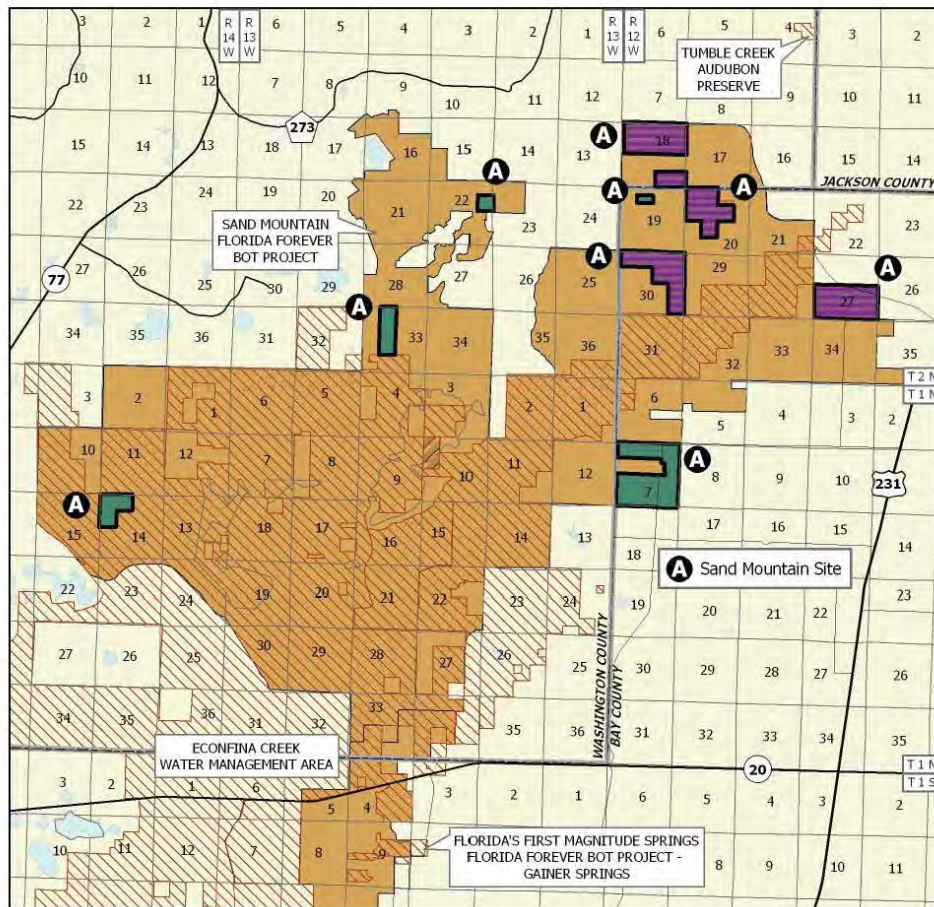
-  Florida Forever BOT Project Boundary
-  Essential Parcel(s) Remaining
-  Change in Ownership\*
-  State Owned Lands

\* 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

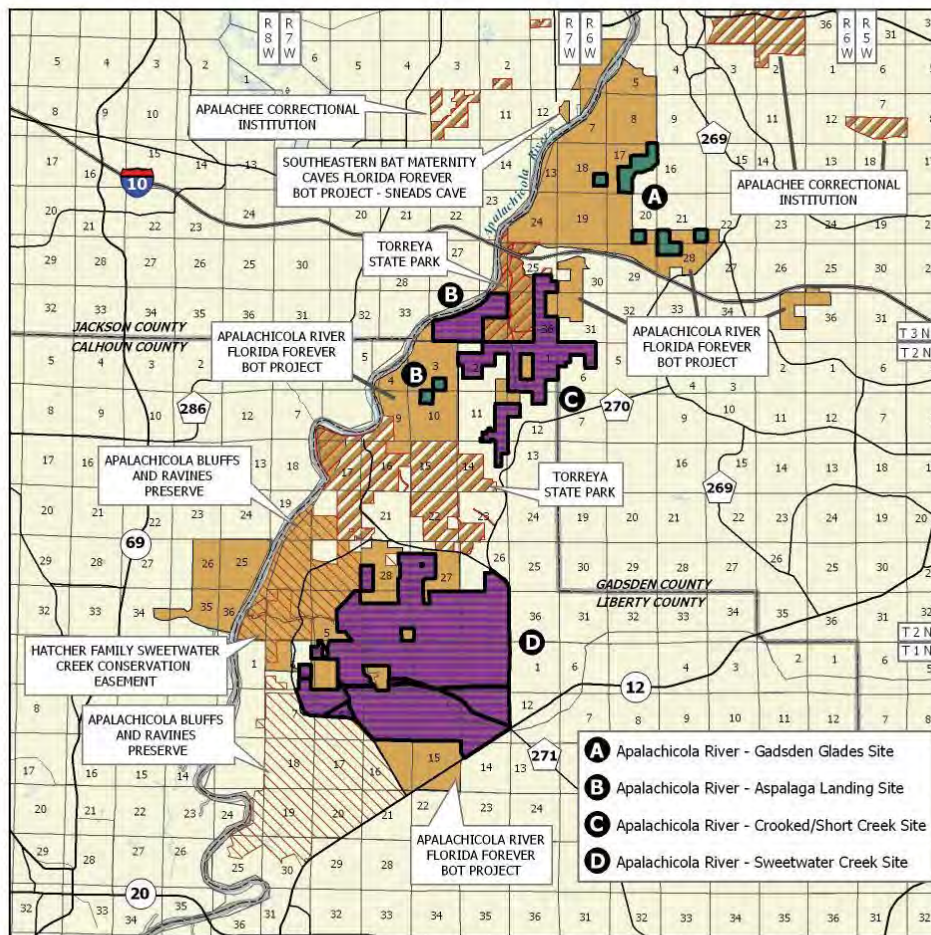
- Florida Forever BOT Project
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 1 2 4  
Miles



JUNE 2007





## ST. JOE TIMBERLAND: MAP 3 OF 9

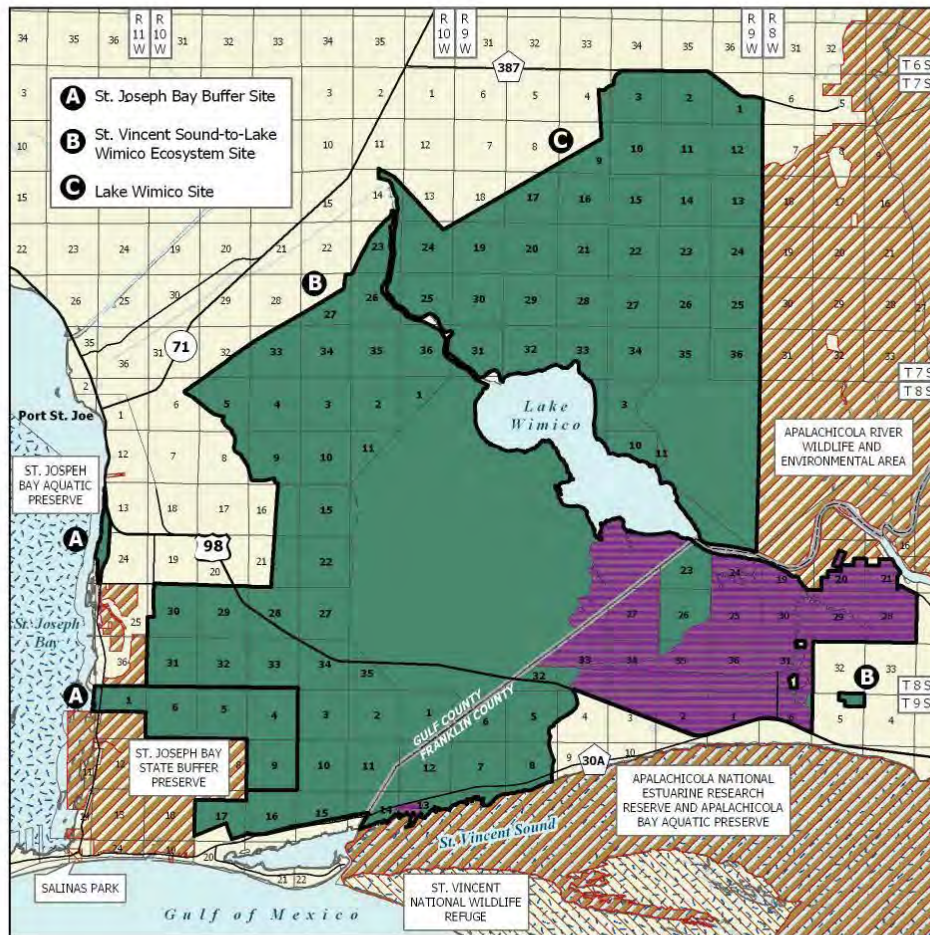
### GADSDEN AND LIBERTY COUNTIES

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



MAY 2006





## ST. JOE TIMBERLAND: MAP 4 OF 9

### GULF AND FRANKLIN COUNTIES

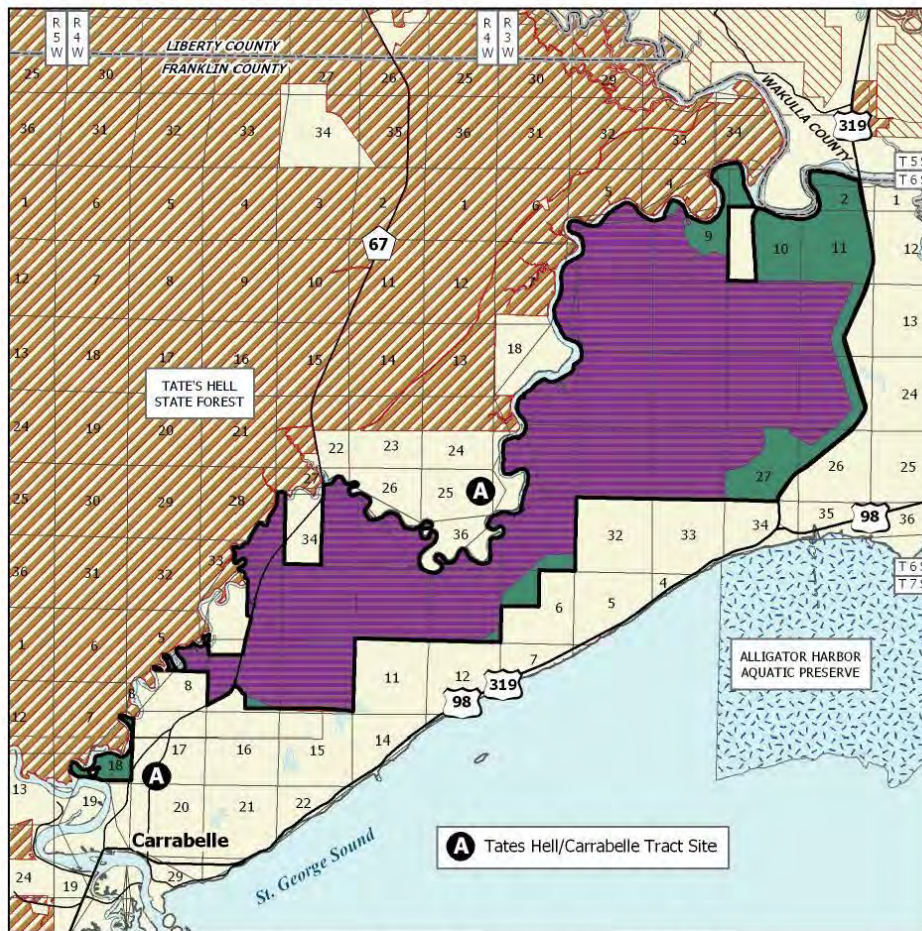
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve



0 1 2 4  
Miles



APRIL 2007



## ST. JOE TIMBERLAND: MAP 5 OF 9

### FRANKLIN COUNTY

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

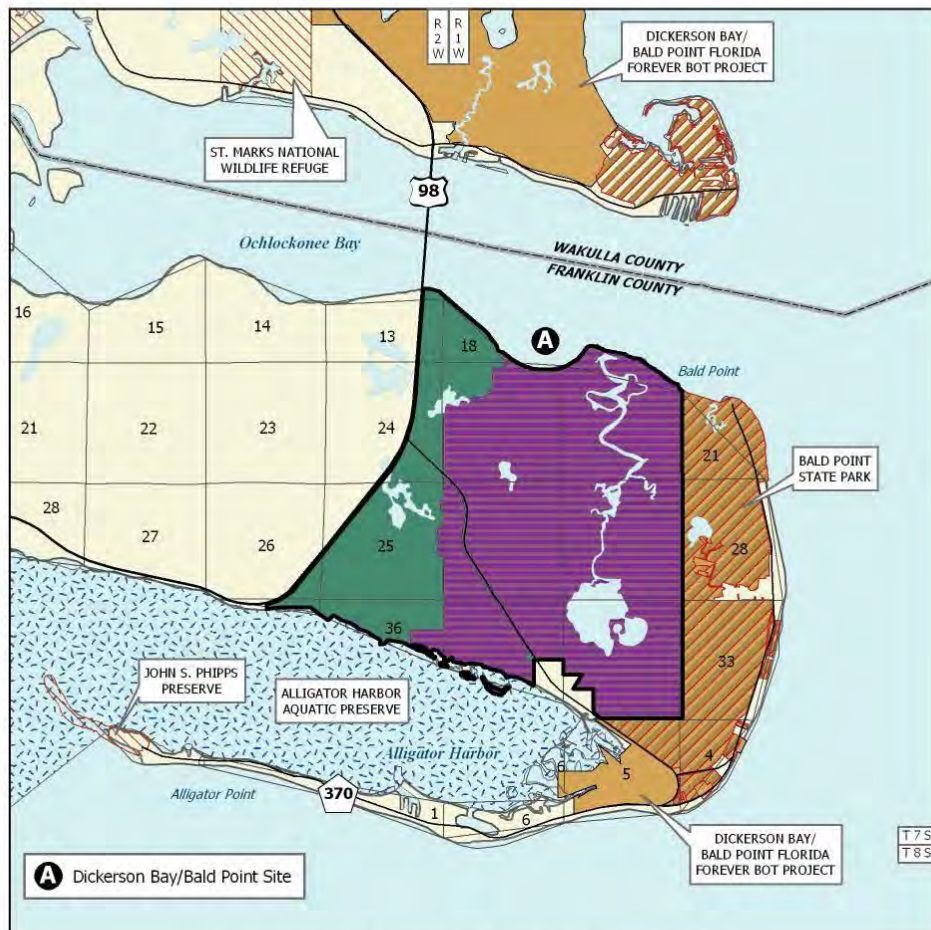
0 0.5 1 2  
Miles



St. Joe Timberland,  
Map 5

MAY 2006





## ST. JOE TIMBERLAND: MAP 6 OF 9

### FRANKLIN COUNTY

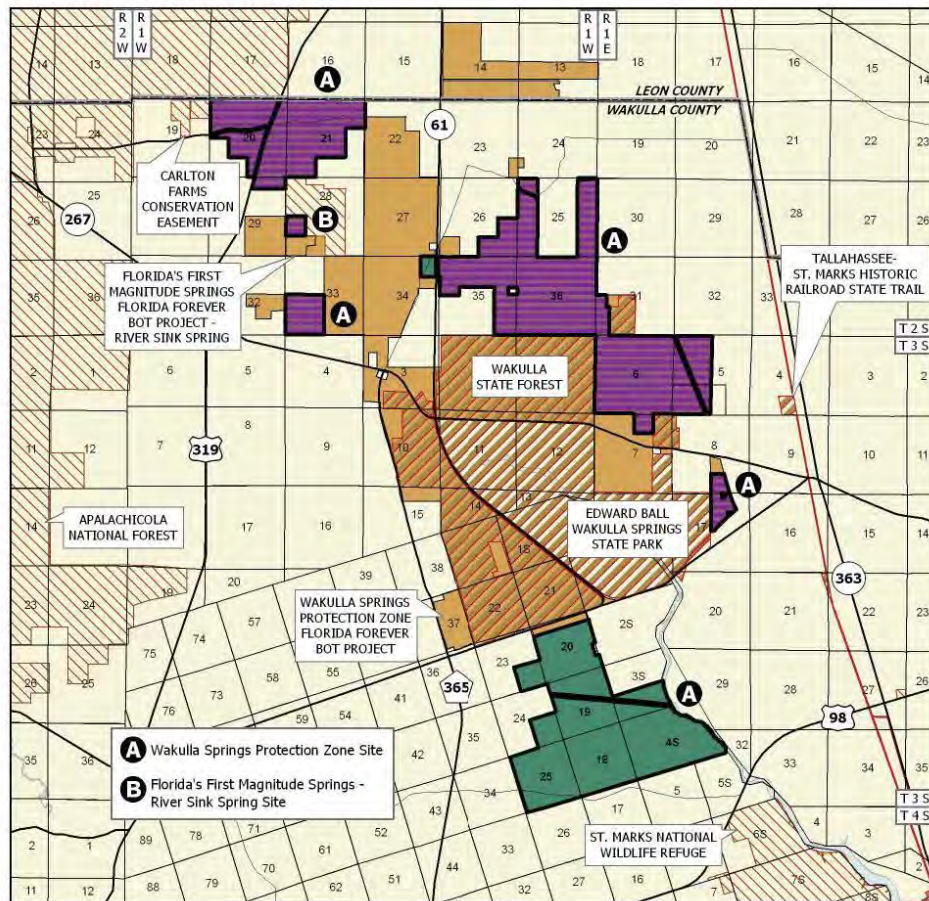
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve

0 0.5 1 2  
Miles



MAY 2006





## ST. JOE TIMBERLAND: MAP 7 OF 9

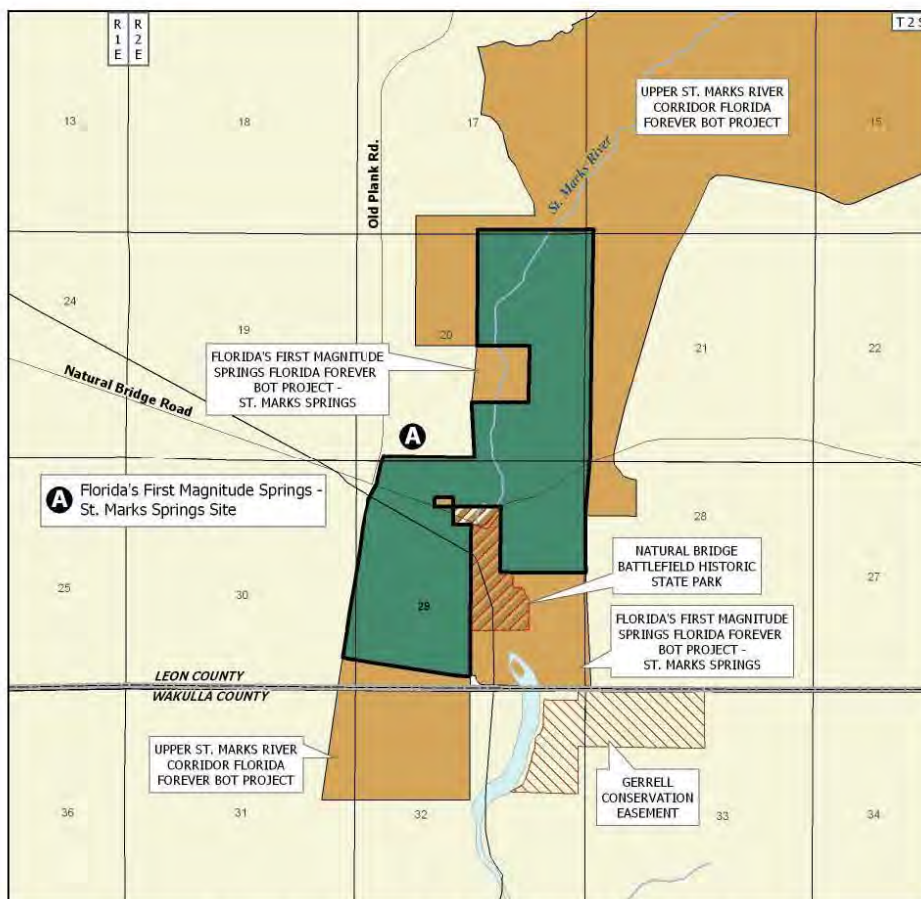
### WAKULLA COUNTY

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

0 0.5 1 2  
Miles



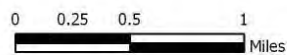
JANUARY 2008



## ST. JOE TIMBERLAND: MAP 8 OF 9

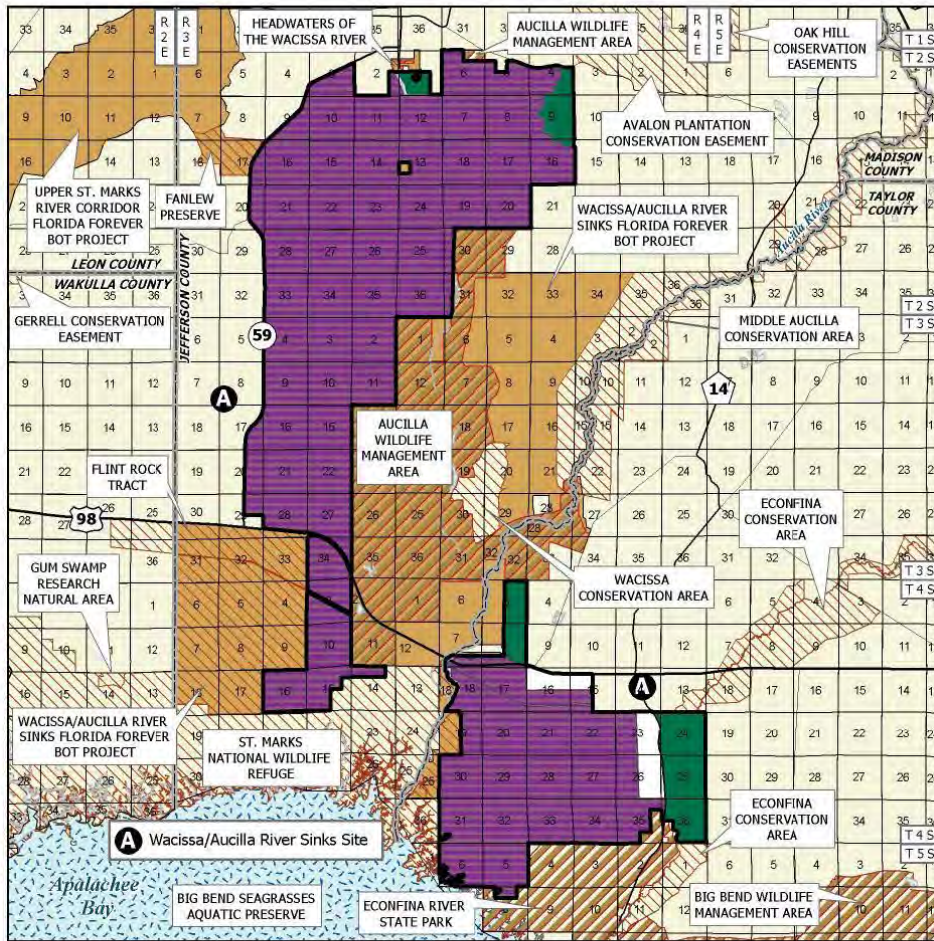
### LEON COUNTY

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



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.

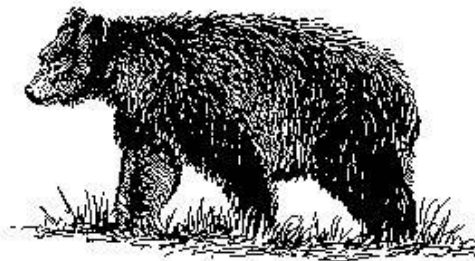
On December 9, 2011 ARC voted to place this project in the Climate Change Lands category of Florida Forever.

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

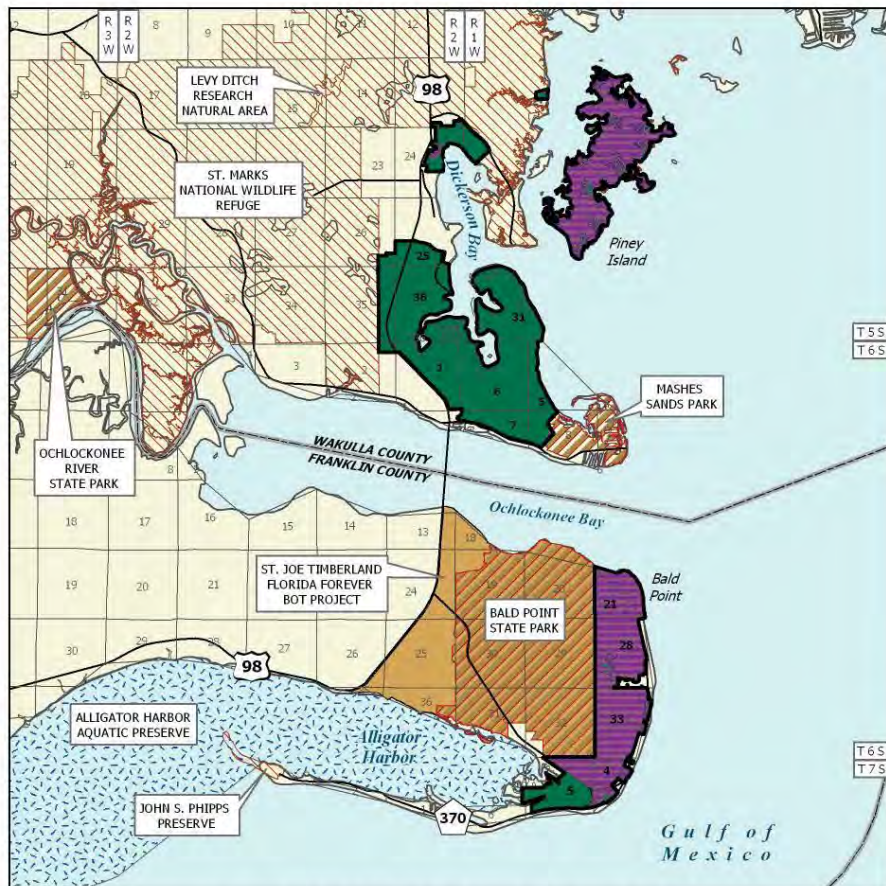
The southern part of this project (i.e., Bald Point and southern Dickerson Bay) is designated for use as a state park that will augment the recreational opportunities of the adjacent Mashes Sands County Park with areas for picnicking, hiking, camping, and canoeing. The beaches of Bald Point are suitable 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<br>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     |
| Merian                                          | G5/S2     |
| Black-crowned Night-heron                       | G5/S3     |
| Southeastern Fox Squirrel                       | G5T5/S3   |
| 11 rare species are associated with the project |           |

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



## 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 IGR 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 Mashers 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 Mashers 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<br>Source of Funds | Startup<br>USFWS | Recurring<br>USFWS | Category<br>Source of Funds | Startup<br>CARL | Recurring<br>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](mailto: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.MvFlorida.com](mailto:Eman.Vovsi@DOS.MvFlorida.com)



AR=37  
SS=0  
CN=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 DMP          | 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   | Pope Place                  | Carrabelle               |                              |                   |           |
| FR00925 | AR   | Parker Place                | Carrabelle               |                              |                   |           |
| FR00926 | AR   | Deep Creek Still            | Carrabelle               |                              |                   |           |
| FR00927 | AR   | Lewis Bluff Bridge Remains  | Carrabelle               |                              |                   |           |
| FR00929 | AR   | Nero Creek Homesite         | 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 September 2019)

**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:

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

#### 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:

[https://dos.myflorida.com/media/31392/minimum\\_review\\_documentation\\_requirements.pdf](https://dos.myflorida.com/media/31392/minimum_review_documentation_requirements.pdf)

\* \* \*

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

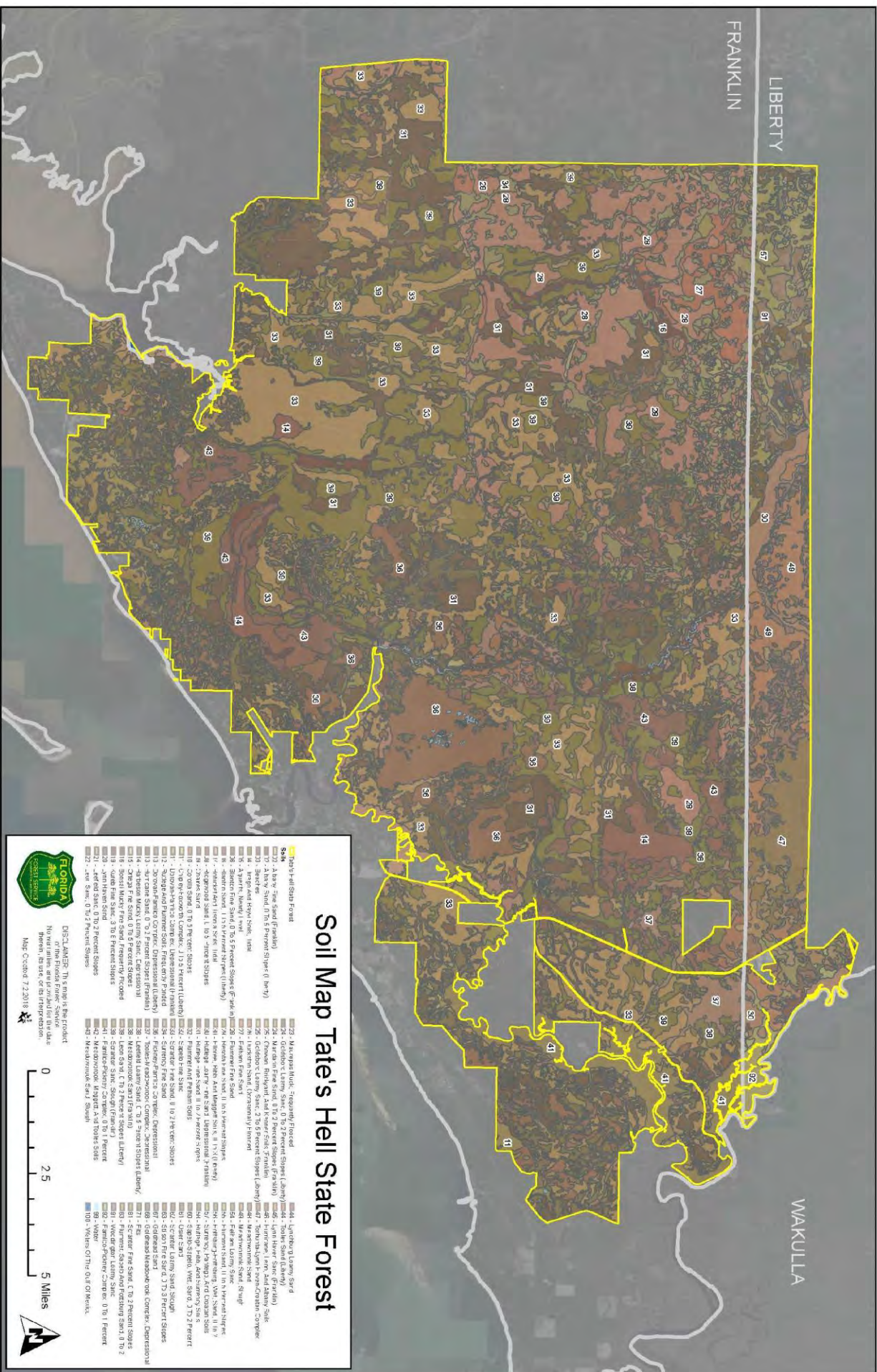
Robin Jackson  
Division of Historical Resources  
Bureau of Historic Preservation  
Compliance and Review Section  
R. A. Gray Building  
500 South Bronough Street  
Tallahassee, FL 32399-0250

Email: [Robin.Jackson@DOS.MyFlorida.com](mailto:Robin.Jackson@DOS.MyFlorida.com)  
Phone: (850) 245-6496  
Toll Free: (800) 847-7278  
Fax: (850) 245-6439

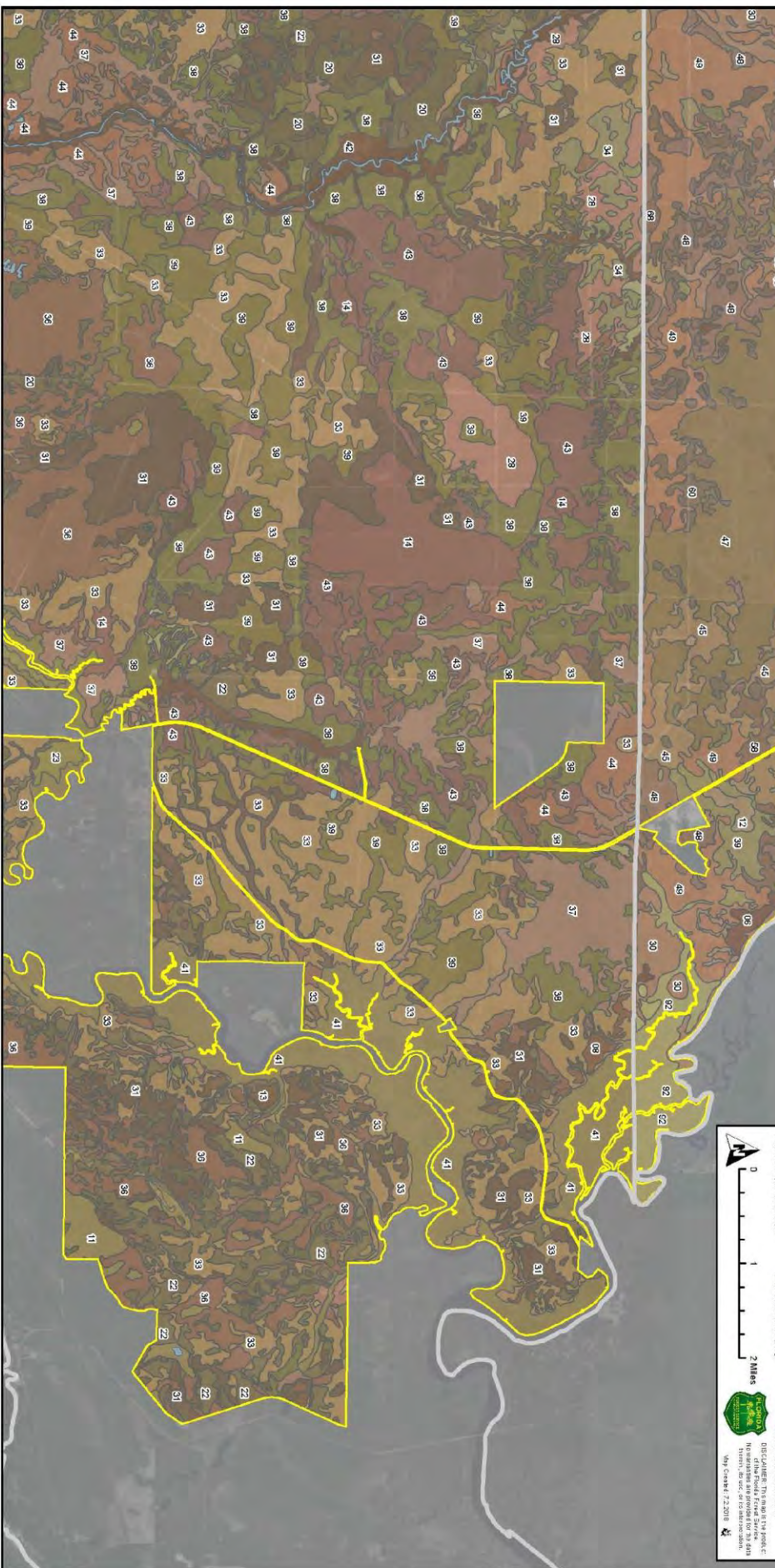
## Exhibit K

### Soil Maps and Descriptions











# Soil Map NW

## Tate's Hell State Forest

- Soils**
- 01 - Tate's Hell State Forest
  - 02 - Albany Fine Sand (Franklin)
  - 03 - Albany Sand, 0 To 5 Percent Slopes (Liberty)
  - 04 - Beaches
  - 05 - Acorns, Nearly Level
  - 06 - Blanton Fine Sand, 0 To 3 Percent Slopes (Franklin)
  - 07 - Blanton Sand, 0 To 3 Percent Slopes (Liberty)
  - 08 - Blanton Sand, 0 To 3 Percent Slopes (Liberty)
  - 09 - Charles Sand
  - 10 - Cordia Sand, 0 To 5 Percent Slopes
  - 11 - Conway-Fornith Complex, 0 To 5 Percent (Liberty)
  - 12 - Conway-Fornith Complex, Depressional (Franklin)
  - 13 - Kulture And Plume Soils, Frequently Floored
  - 14 - Kulture And Plume Soils, Depressional (Liberty)
  - 15 - Kulture And Plume Soils, Depressional (Liberty)
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  - 99 - Kulture And Plume Soils, Depressional (Liberty)
  - 100 - Kulture And Plume Soils, Depressional (Liberty)



0 0.5 1 Mile

© 2004 USFS. This map is a product of the National Forest Inventory. No warranties are made for the data shown. It is not to be used for navigation.

Map Created: 7/2/2008







[illegible]

## 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 Aqueunts 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: Toolles (3%)**

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

**Component: Rutlege (2%)**



Generated brief soil descriptions are created for major soil components. The Rutledge 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 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:** 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:** 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—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 | 5,858          |                  |                          |                |            |     |      |
|                                              |                | 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—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        | 0.6 | 1.0  |
|                                              |                | 40               | Pamlico, depressiona     | Series         | 0.0        | 0.5 | 1.0  |
| 37—Tooles-Meadowbrook complex, depressiona   | 3,330          |                  |                          |                |            |     |      |
|                                              |                | 58               | Tooles, depressiona      | Series         | 0.0        | 0.6 | 1.0  |
|                                              |                | 32               | Meadowbrook, depressiona | 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—Elloree, Bibb, and Meggett soils, 0 to 3 percent slopes, frequently flooded | 15,070         |                  |                |                |            |     |      |
|                                                                                |                | 35               | Elloree        | 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  |
| 38—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                                                             | 1,380          |                  |                |                |            |     |      |
|                                                                                |                | 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            |                  |                           |                    |            |     |      |
|                                                                       |                | 85               | 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         |                  |                           |                    |            |     |      |
|                                                                       |                | 85               | 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                                         | 4,640          |                  |                |                    |            |     |      |
|                                                  |                | 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: Rutlege (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 Tooloes, 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 Toolès 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: Toolcs (22%)**

The Toolcs 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 Toolès, 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 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, 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 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 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—Osier 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                    | 850            |                  |                       |                    |            |     |      |
|                                            |                | 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—Bonsei mucky fine sand, frequently flooded              | 1,970          |                  |                        |                |            |     |      |
|                                                            |                | 89               | Bonsei                 | 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 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: Toolles (3%)**

Generated brief soil descriptions are created for major soil components. The Toolles 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: 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 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: 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 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—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  |
| 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                    | 850            |                  |                       |                    |            |     |      |
|                                            |                | 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, 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  |
| 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.

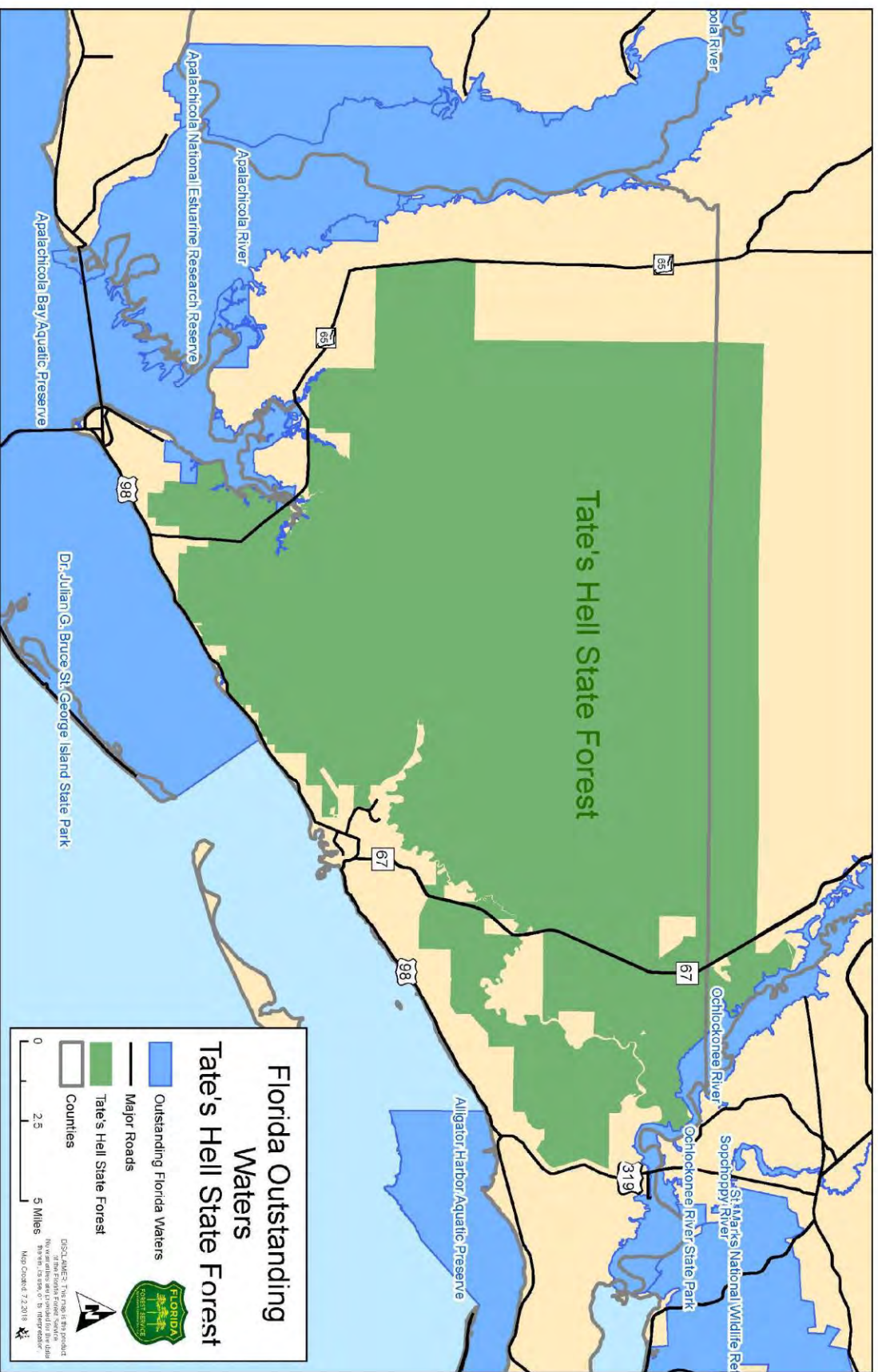
**Component:** Aquents non-hydric - A seasonal zone of water saturation is at 21 inches during January, February, March, April, December. This soil does not meet hydric criteria.

**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](mailto: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](mailto: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  
850-224-8207  
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 - Tates 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](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](http://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](mailto:esachs@fnai.fsu.edu).

Sincerely,

*Tracking Florida's Biodiversity*

Alan Davis

Page 3

August 9, 2017

*Elyse Sachs*

Elyse Sachs  
GIS / Data Services

End

*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 |
|------------------------------------------------|----------------------------------------|-------------|------------|----------------|--------------|
| <b>PLANTS</b>                                  |                                        |             |            |                |              |
| <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>Harperocalis 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 alopecarpa</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 Skulicap                       | G2          | S2         | LT             | E            |
| <b>AMPHIBIANS</b>                              |                                        |             |            |                |              |
| <i>Ambystoma cingulatum</i>                    | Frosted Flatwoods Salamander           | G2          | S2         | T              | FT           |
| <b>REPTILES</b>                                |                                        |             |            |                |              |
| <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            |
| <b>BIRDS</b>                                   |                                        |             |            |                |              |
| <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           |
| <b>MAMMALS</b>                                 |                                        |             |            |                |              |
| <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.





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*Florida Natural Areas Inventory*  
**Managed Area Element Summary**  
**Tate's Hell State Forest**



| SCIENTIFIC NAME                    | COMMON NAME          | Global<br>rank | State<br>rank | Federal<br>status | State<br>status |
|------------------------------------|----------------------|----------------|---------------|-------------------|-----------------|
| <b>MAMMALS (cont.)</b>             |                      |                |               |                   |                 |
| <i>Ursus americanus floridanus</i> | Florida Black Bear   | G5T2           | S2            | RT                | N               |
| <b>INVERTEBRATES</b>               |                      |                |               |                   |                 |
| <i>Anodonta heardi</i>             | Apalachicola Floater | G2             | S1S2          | RT                | N               |
| <i>Quadrula infucata</i>           | Sculptured Pigtoe    | G3             | S2S3          | N                 | N               |

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# *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.*



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## Florida Natural Areas Inventory

### Managed Area Element Summary

#### Tate's Hell State Forest



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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

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*Florida Natural Areas Inventory*  
**Managed Area Element Summary**  
**Tate's Hell State Forest**




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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 |
|------------------------------------------------|----------------------------------------|-------------|------------|----------------|---------------|
| <b>Documented</b>                              |                                        |             |            |                |               |
| <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 telephiodios</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            | G3?         | 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 |
|--------------------------------------------|---------------------------------------|-------------|------------|----------------|---------------|
| <b>Documented-Historic</b>                 |                                       |             |            |                |               |
| <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             |
| <b>Likely</b>                              |                                       |             |            |                |               |
| <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 adamanleus</i>                 | Eastern Diamondback Rattlesnake       | G4          | S3         | N              | N             |
| <i>Elliptio purpurella</i>                 | Inflated Spike                        | G2          | S2         | UR             | N             |
| <i>Elliploideus sloatianus</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 pop. 1</i>            | 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             |
| <b>Potential</b>                           |                                       |             |            |                |               |
| <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 cunicularia 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 ssp. 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             |

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## Florida Natural Areas Inventory

### Aggregated Biodiversity Matrix Report



| Scientific Name                                         | Common Name                  | Global Rank | State Rank | Federal Status | State Listing |
|---------------------------------------------------------|------------------------------|-------------|------------|----------------|---------------|
| <i>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 Cowlii          | 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>Pamassia caroliniana</i>                             | Carolina Grass-of-parnassus  | G3          | S2         | N              | E             |
| <i>Phyllanthus liebmännianus</i> ssp. <i>platylepis</i> | Pinewoods Dainties           | G4T2        | S2         | N              | E             |
| <i>Pinguicula pumiliflora</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 cinnipes</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](mailto:gisrequests@myfwc.com)

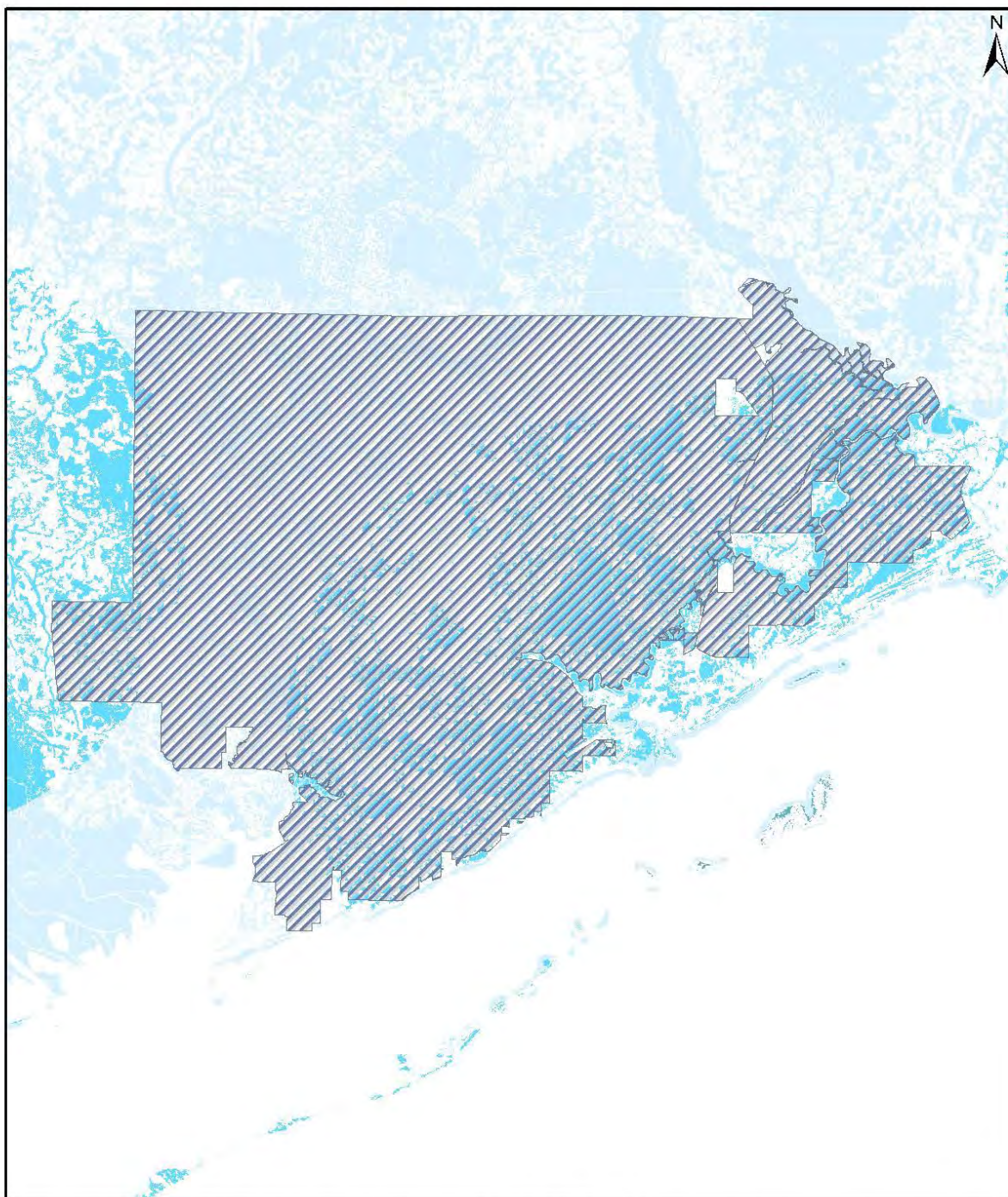
Sincerely,

*Eva Salinas*

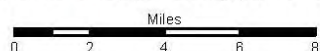
Eva Salinas  
Research Assistant

2017\_6219  
Enclosures





## Tate's Hell State Forest



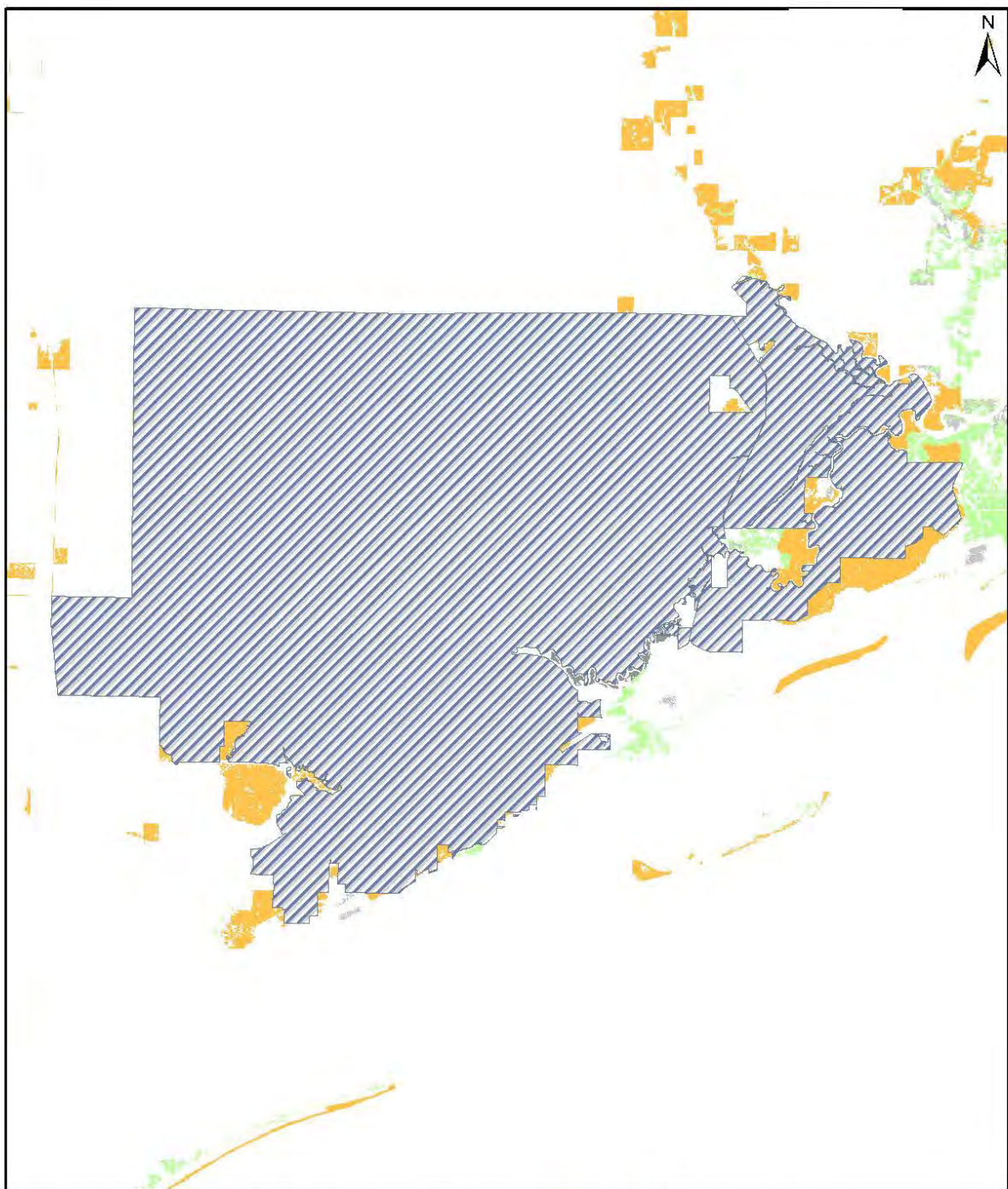
### Priority Wetlands

- 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

0 2 4 6 8  
Miles

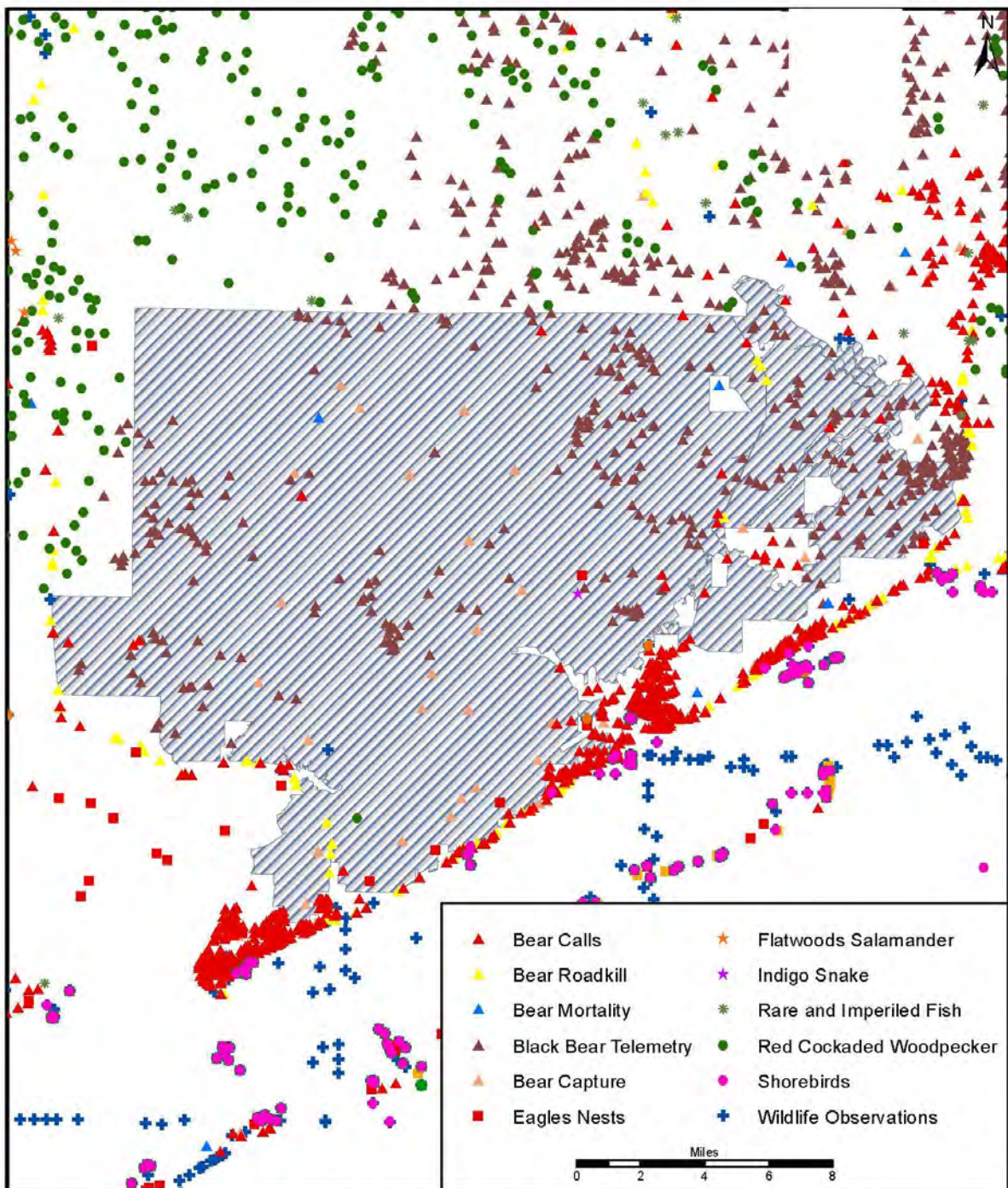
### Prioritized SHCA's



Florida Fish and Wildlife  
Conservation Commission  
MyFWC.com

FWC ID: 2017\_6219 August 1, 2017





## Tate's Hell State Forest

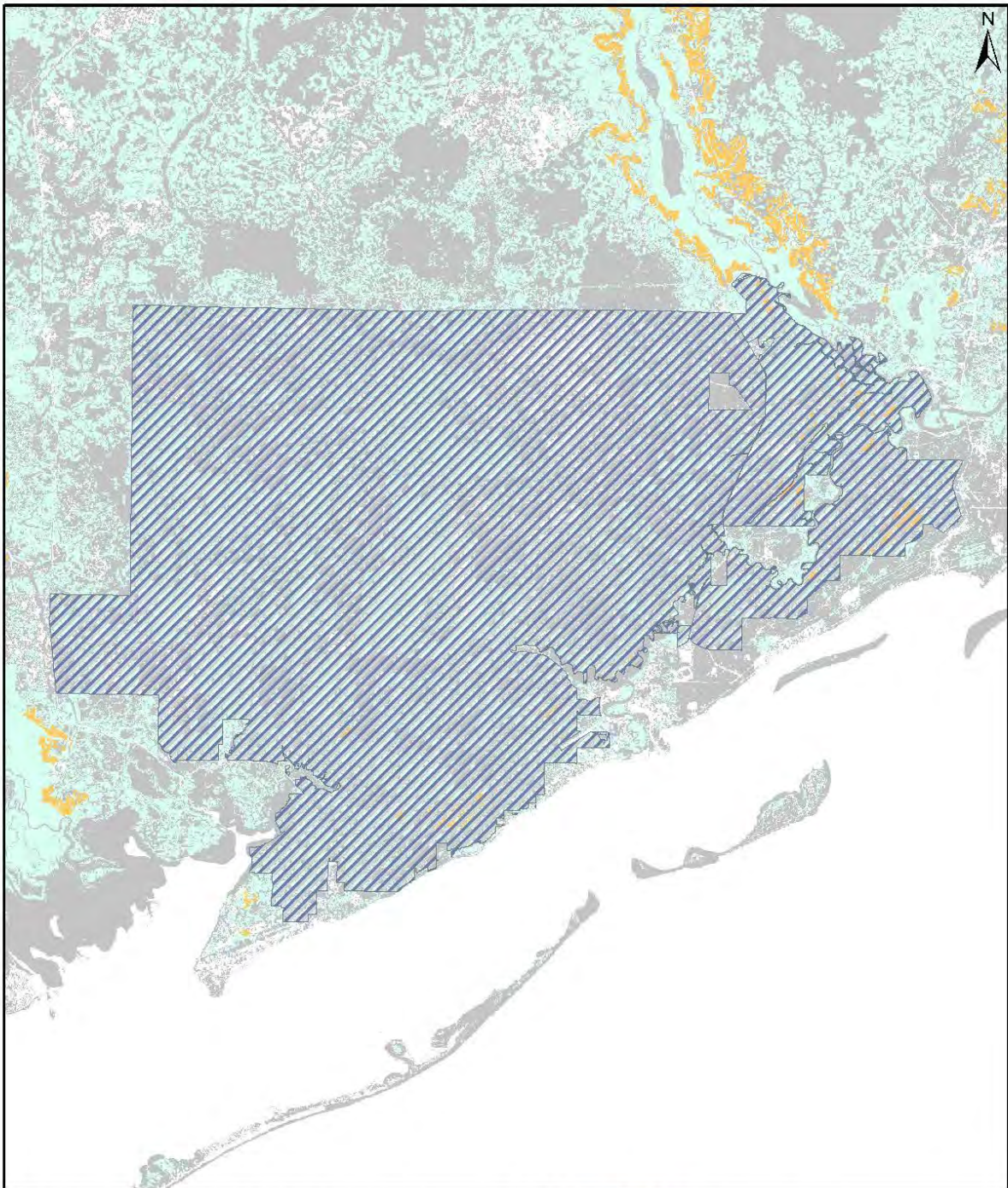
Florida Fish and Wildlife Species Locations



Florida Fish and Wildlife  
Conservation Commission  
MyFWC.com

FWC ID: 2017\_6219 August 8, 2017

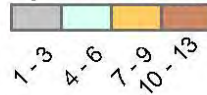




## Tate's Hell State Forest

Miles  
0 2 4 6 8

### Species Richness



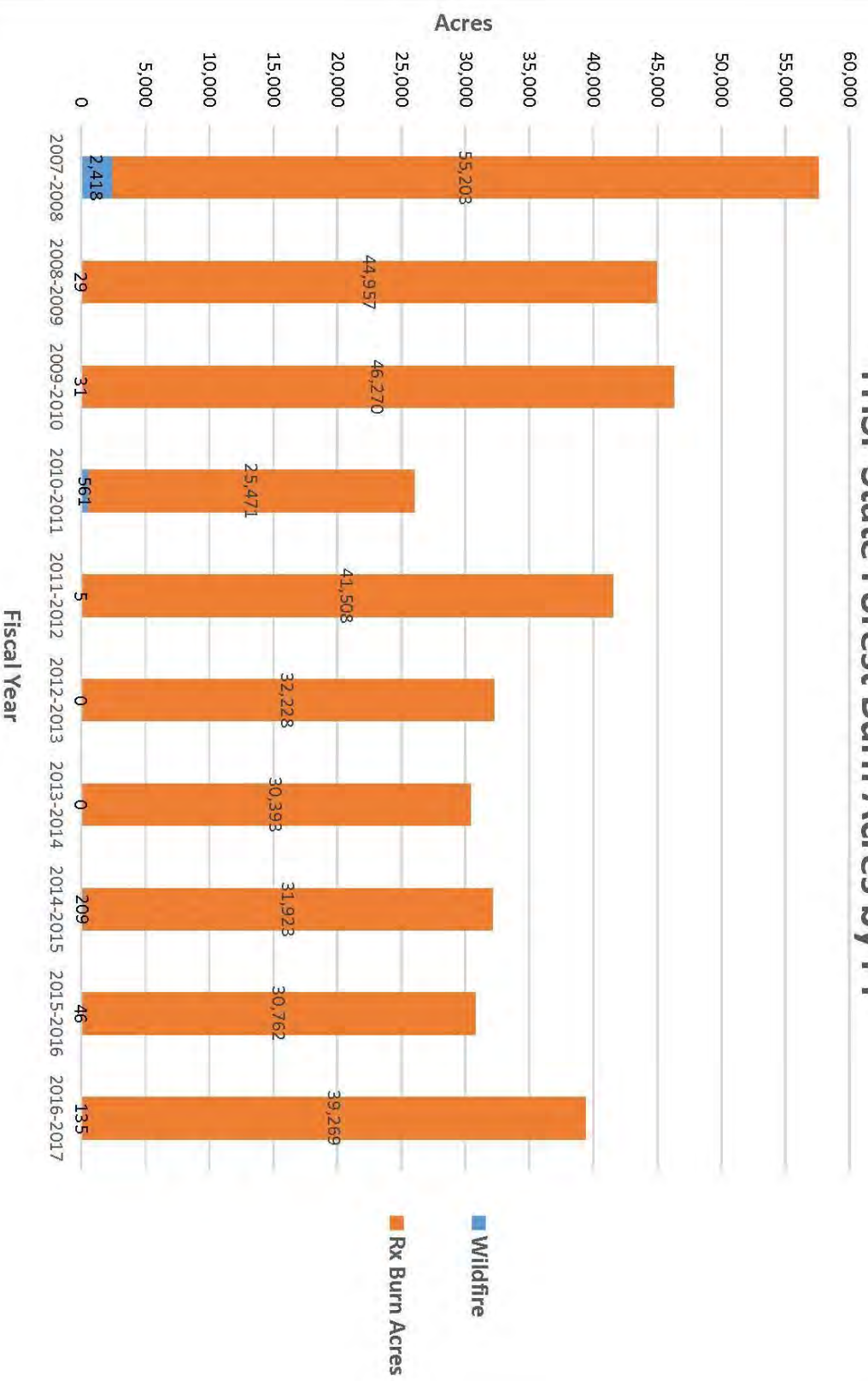
Florida Fish and Wildlife  
Conservation Commission  
MyFWC.com

FWC ID: 2017\_6219 August 1, 2017

## Exhibit P

### Fire History

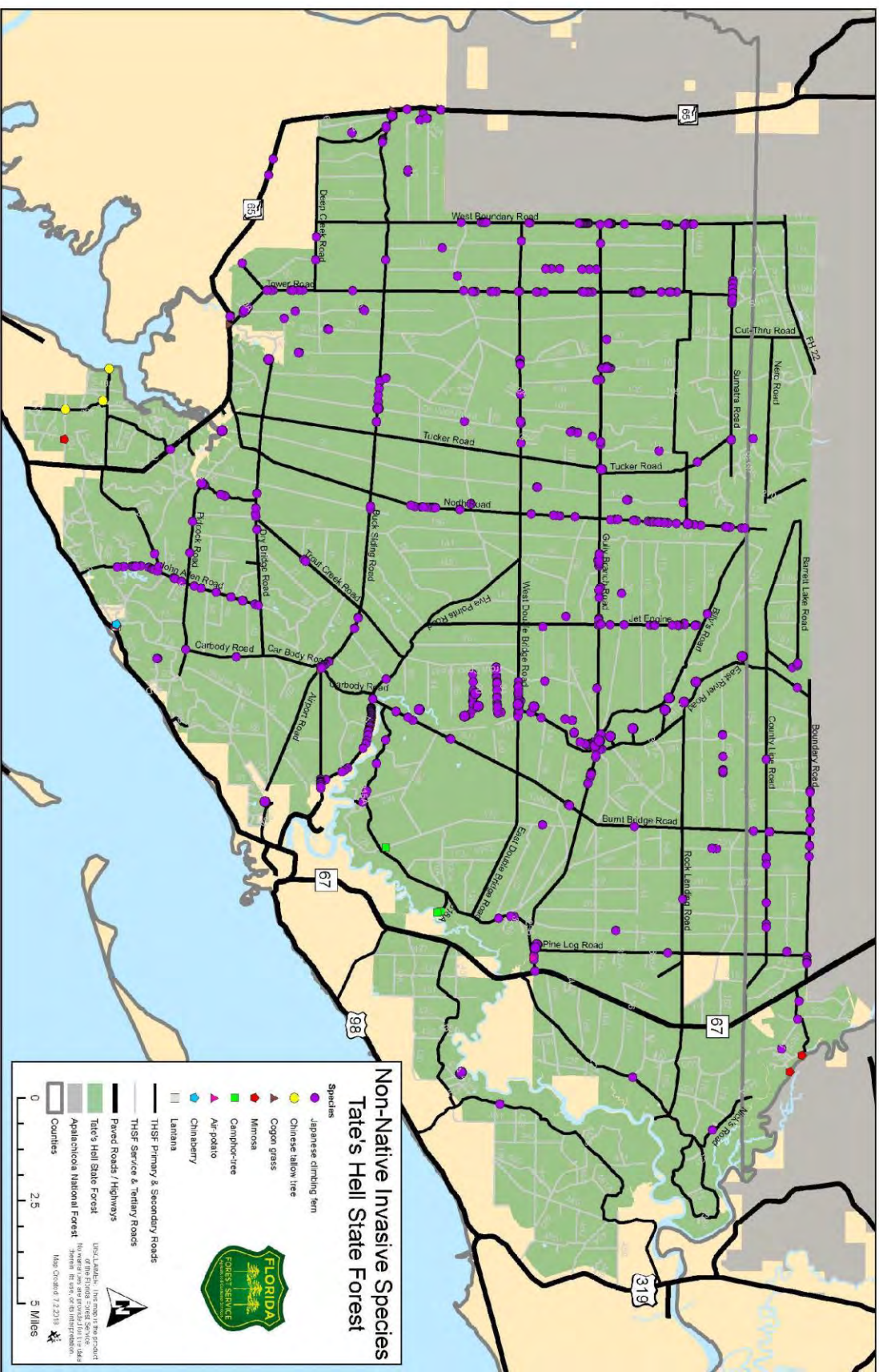
## THSF State Forest Burn Acres by FY



## Exhibit Q

### Non-Native Invasive Species





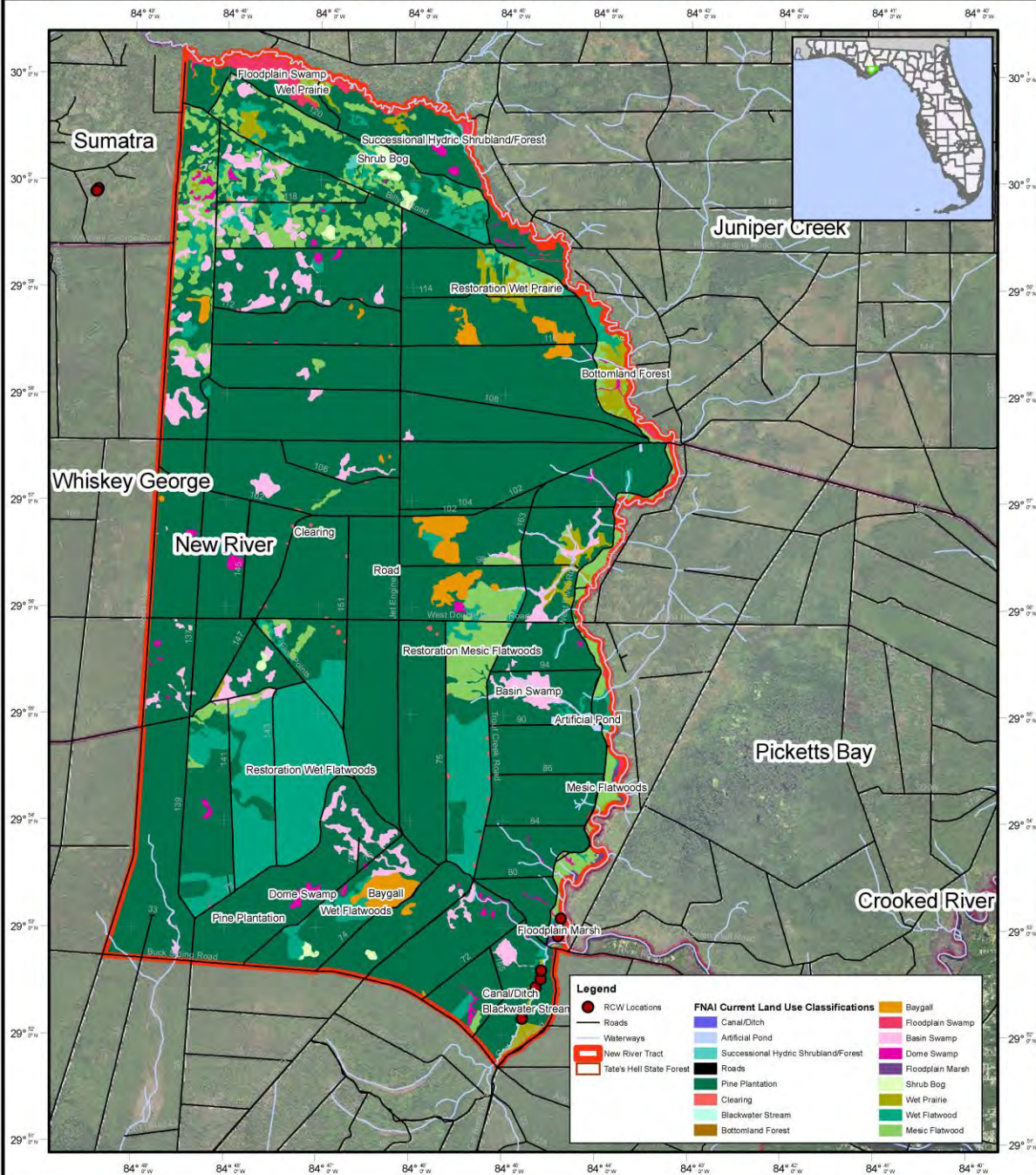


## Exhibit R

### Current Natural Communities



# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, NEW RIVER TRACT



0 0.375 1.5 2.25 3  
Kilometers

0 0.375 0.75 1.5 2.25 3  
Miles

General Disclaimer:  
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Date: 9/7/2017 Created by: B. Ritterholz

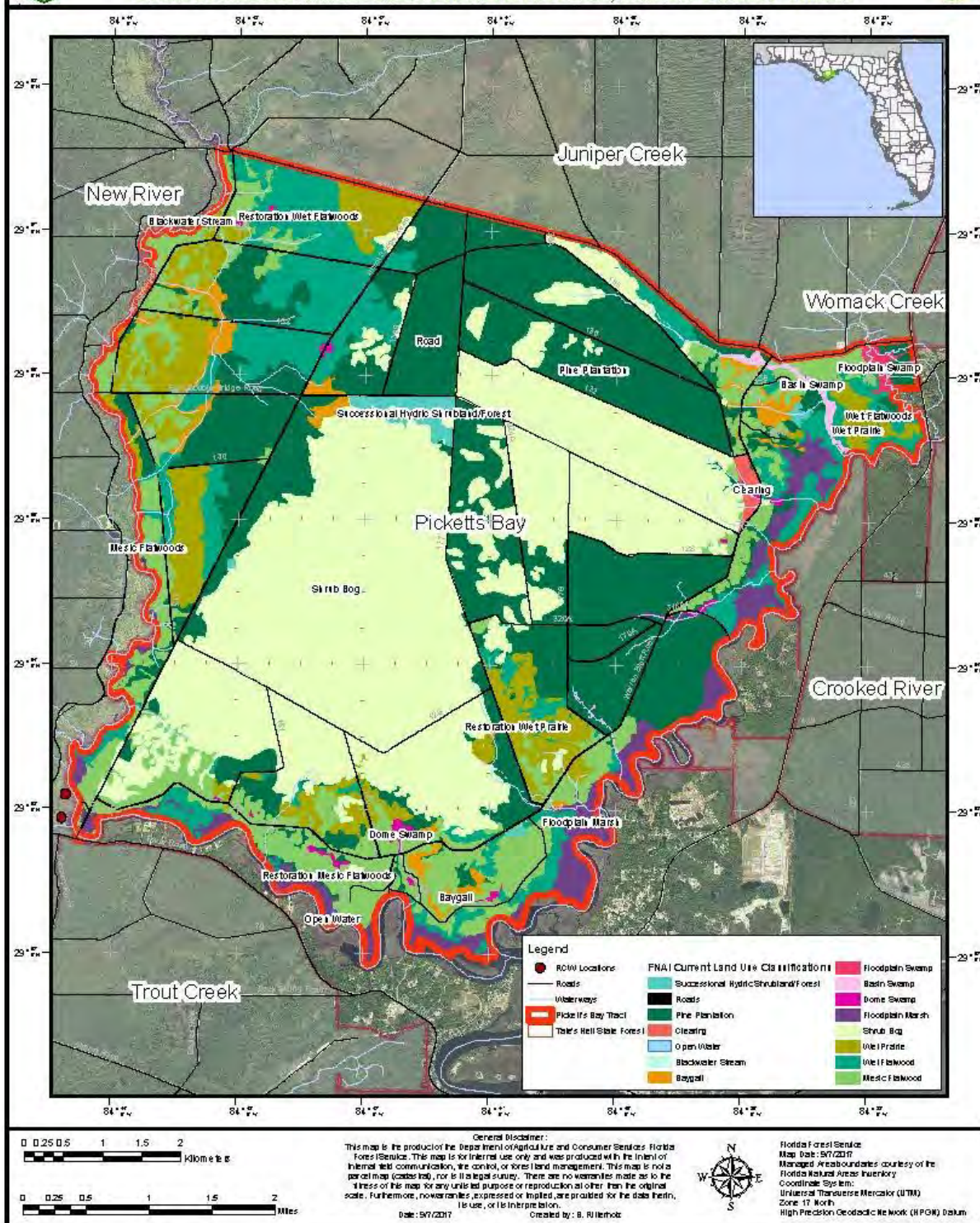


Florida Forest Service  
Map Date: 9/7/2017  
Managed Area boundaries courtesy of the  
Florida Natural Areas Inventory  
Coordinate System:  
Universal Transverse Mercator (UTM)  
Zone 17 North  
High Precision Geodetic Network (HPGN) Datum





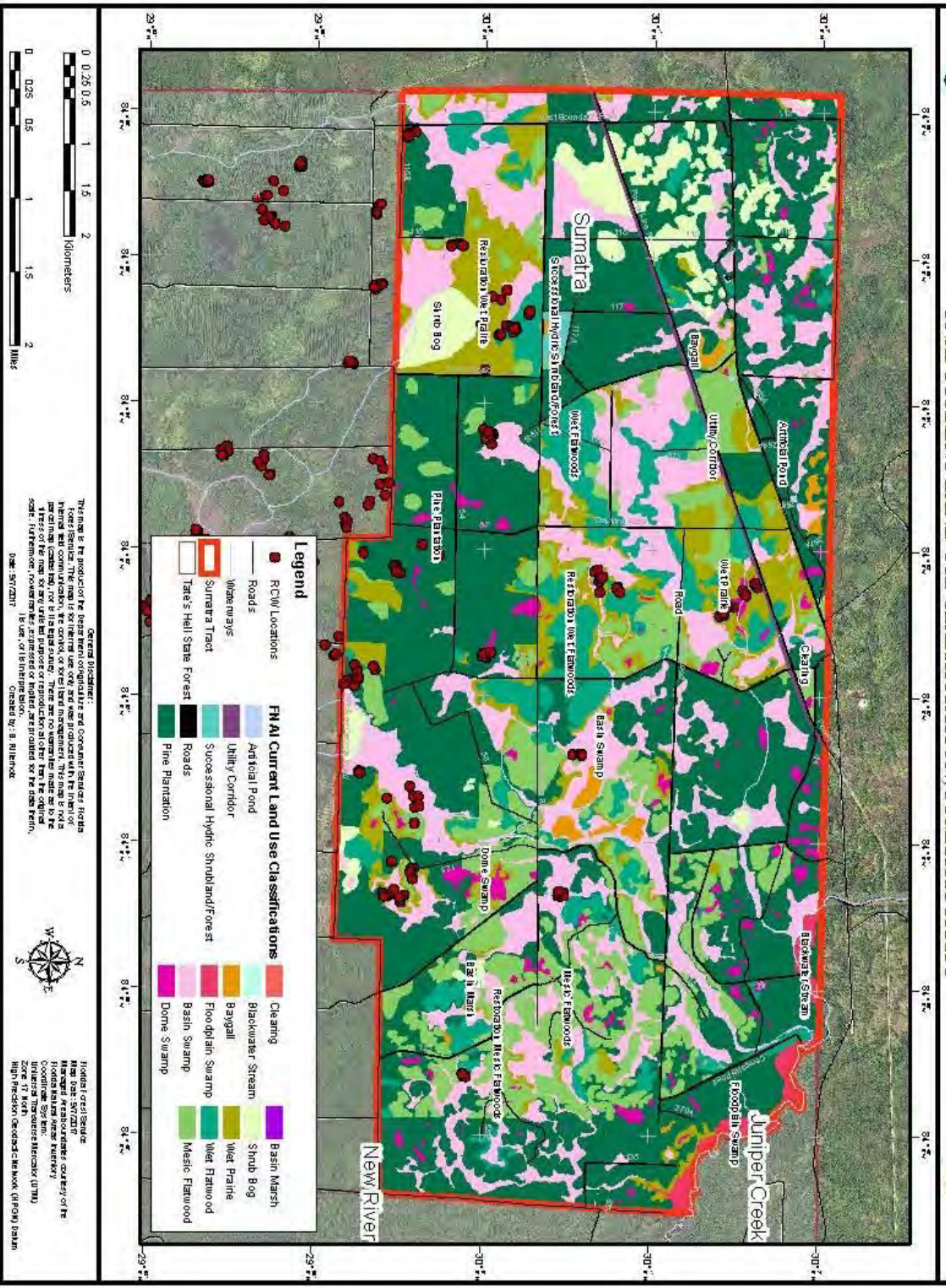
# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, PICKETT'S BAY TRACT



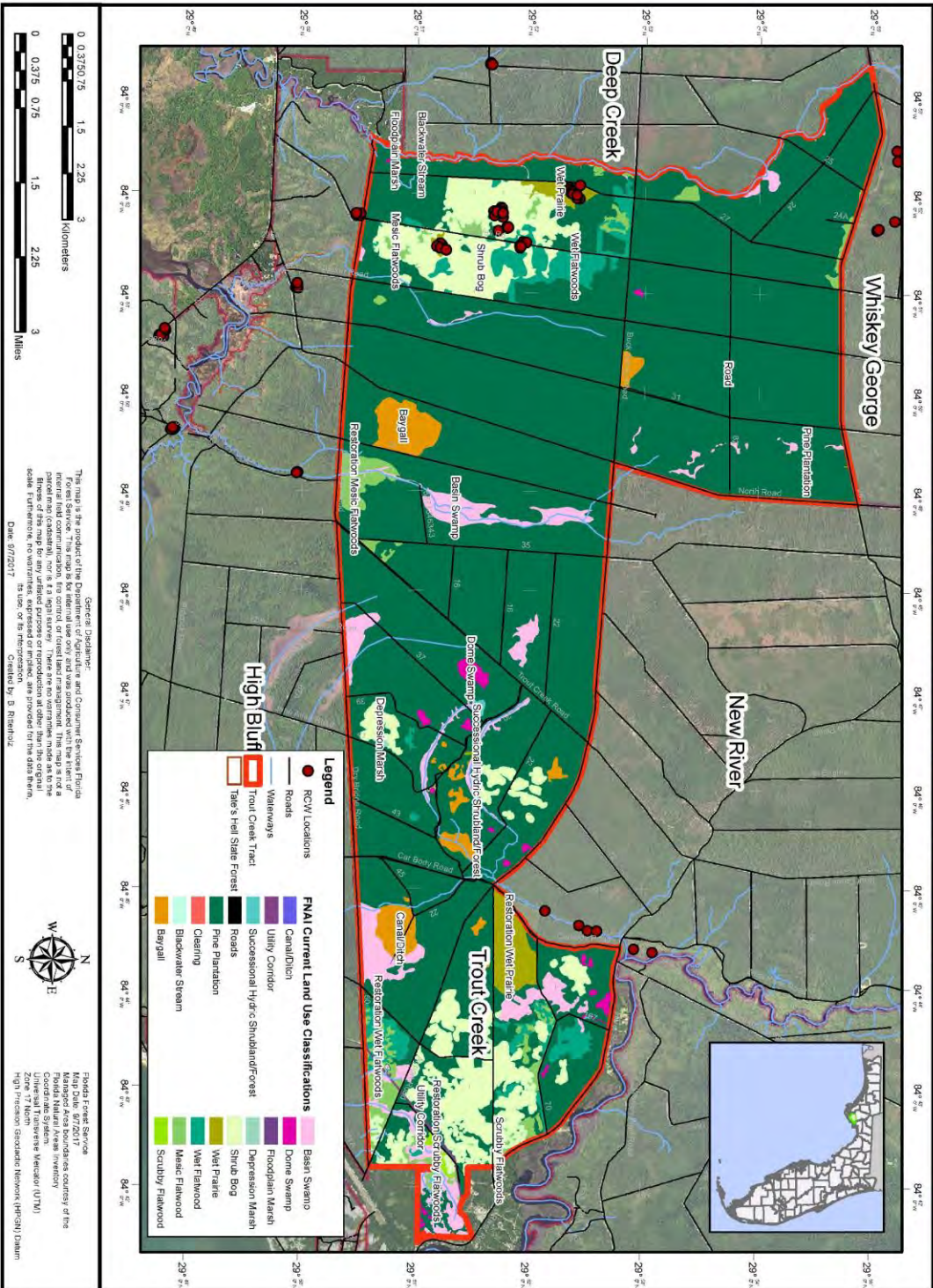




# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATION, SUMATRA TRACT



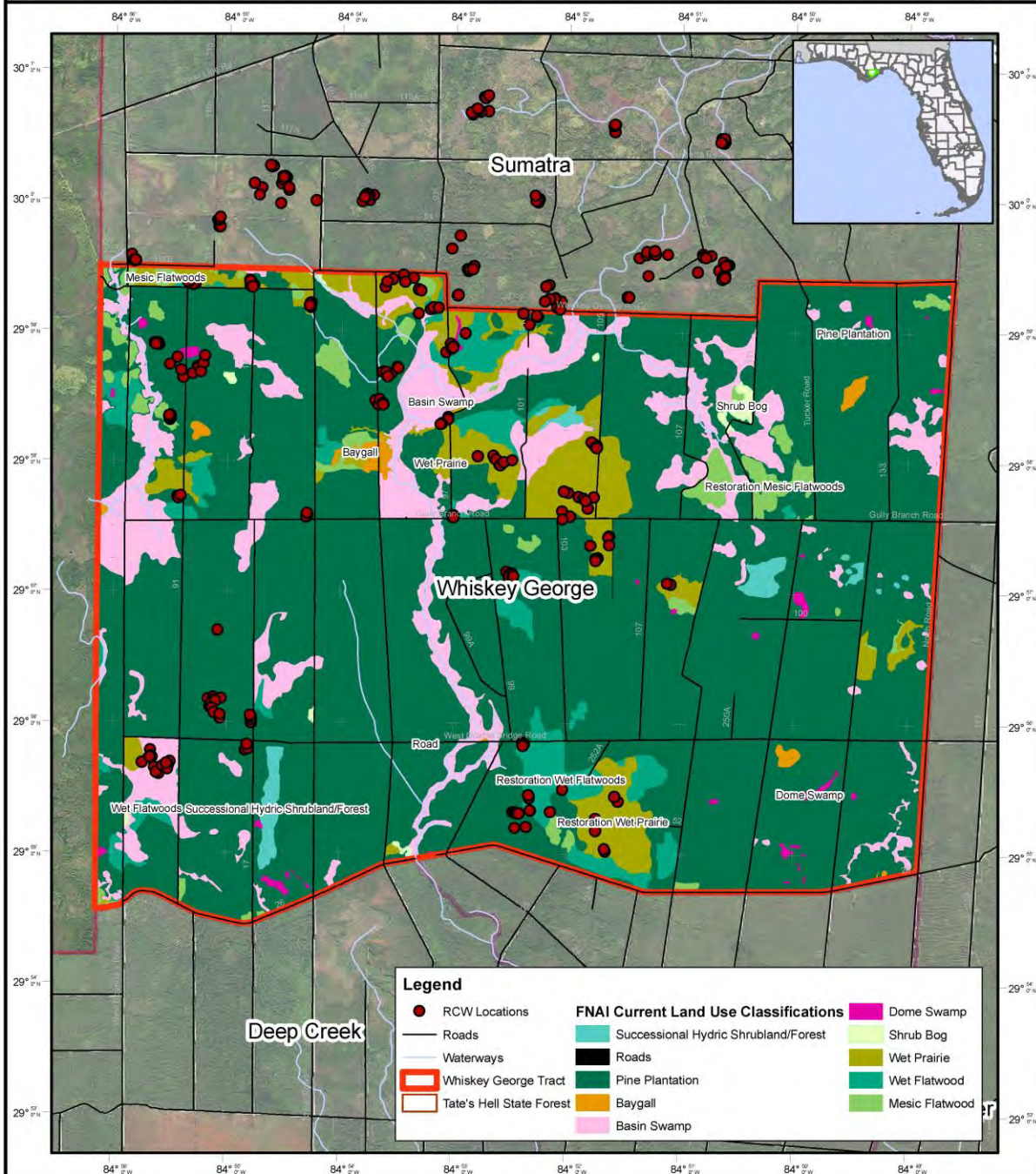


TATE'S HILL STATE FOREST - FFS DISTRICT 4:  
FINAL CURRENT LAND USE CLASSIFICATIONS, TROUT CREEK TRACT





# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, WHISKEY GEORGE TRACT



0 0.250.5 1 1.5 2  
Kilometers

0 0.25 0.5 1 1.5 2  
Miles

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Date: 9/7/2017 Created by: B. Ritterholz

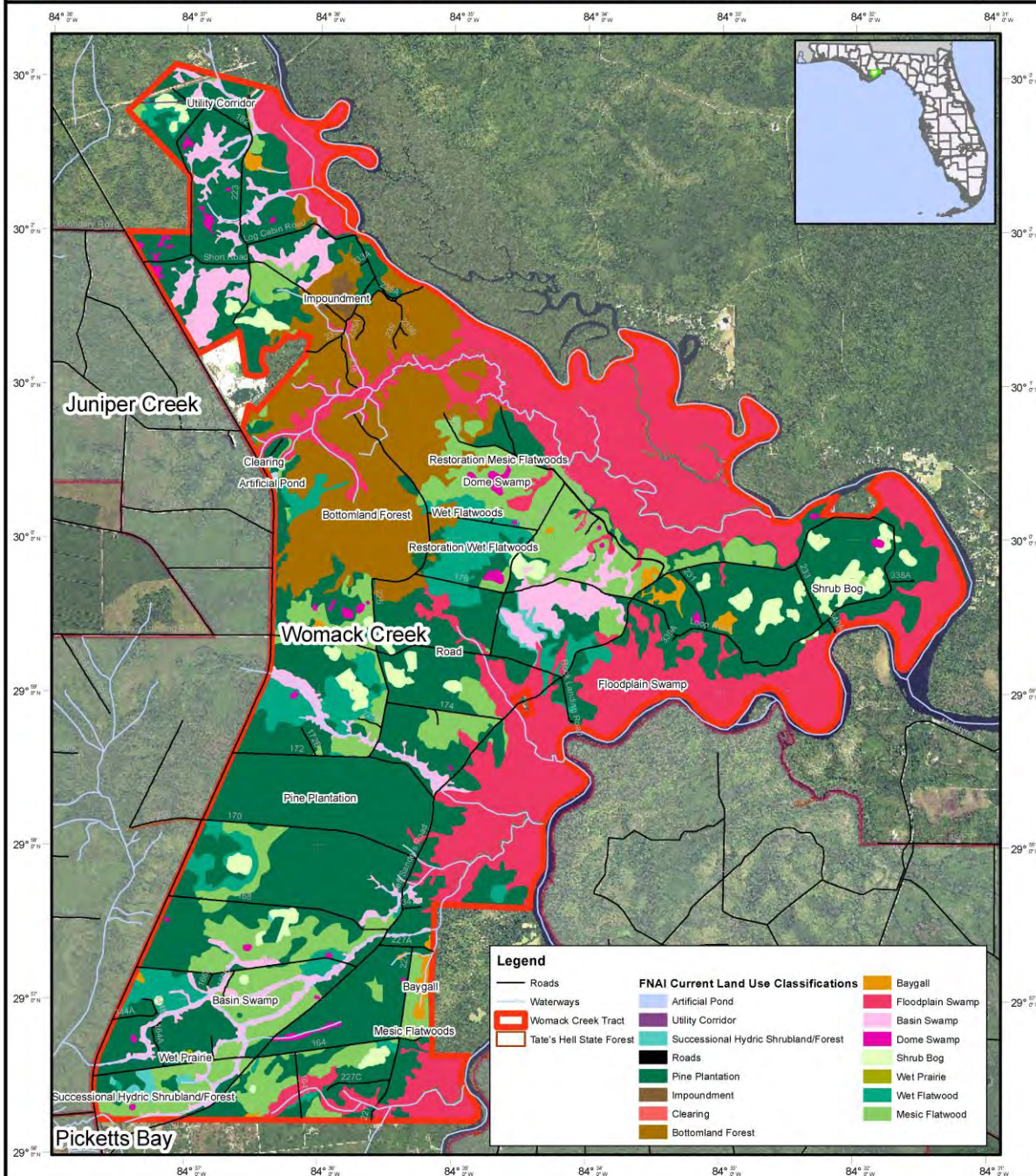


Florida Forest Service  
Map Date: 9/7/2017  
Managed Area boundaries courtesy of the Florida Natural Areas Inventory  
Coordinate System:  
Universal Transverse Mercator (UTM)  
Zone 17 North  
High Precision Geodetic Network (HPGN) Datum





# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, WOMACK CREEK TRACT



0 0.25 0.5 1 1.5 2  
Kilometers

0 0.25 0.5 1 1.5 2  
Miles

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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

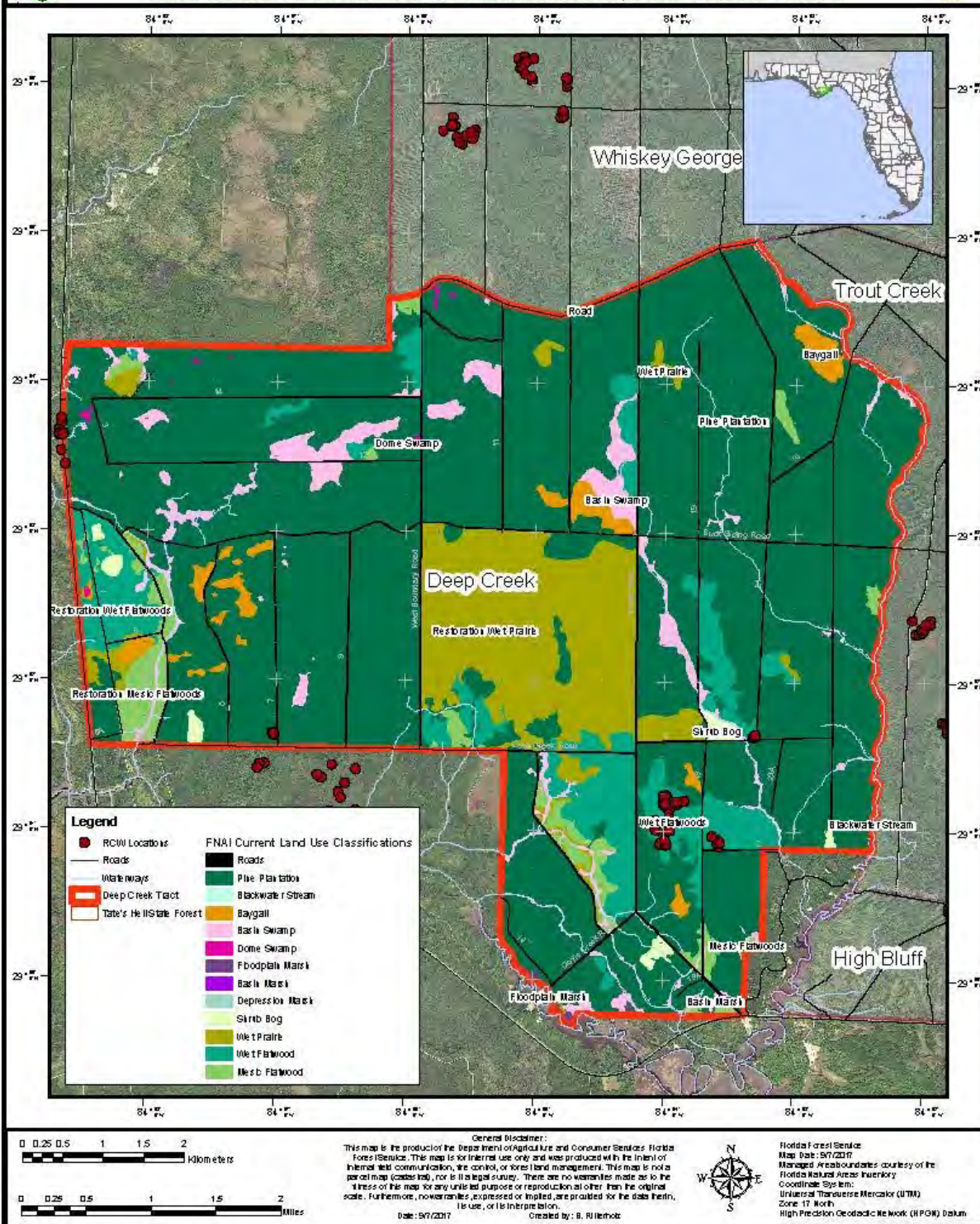


[illegible]

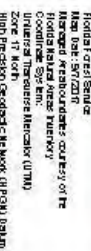




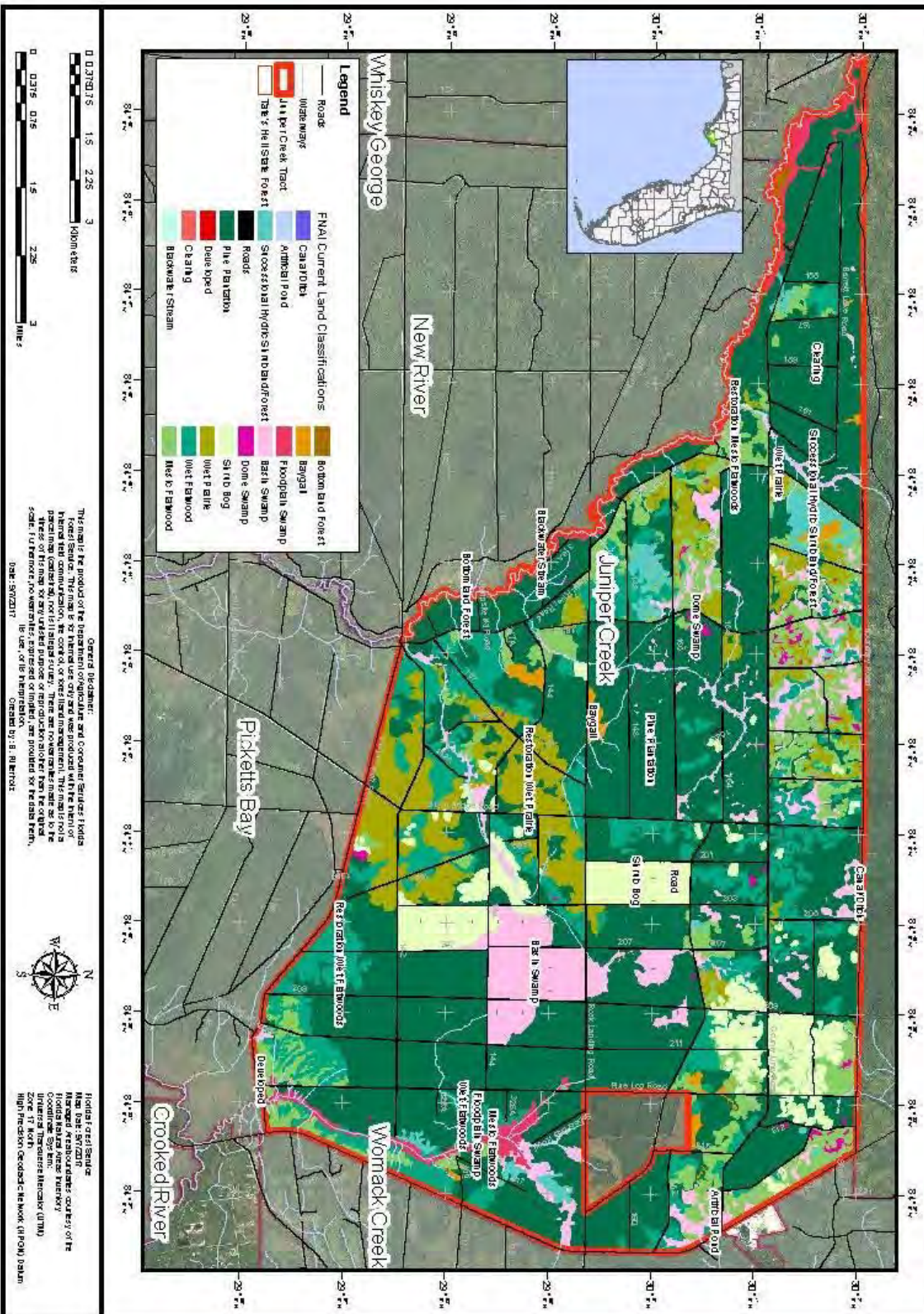
# TATE'S HELL STATE FOREST - FFS DISTRICT 4: FNAI CURRENT LAND USE CLASSIFICATIONS, DEEP CREEK TRACT







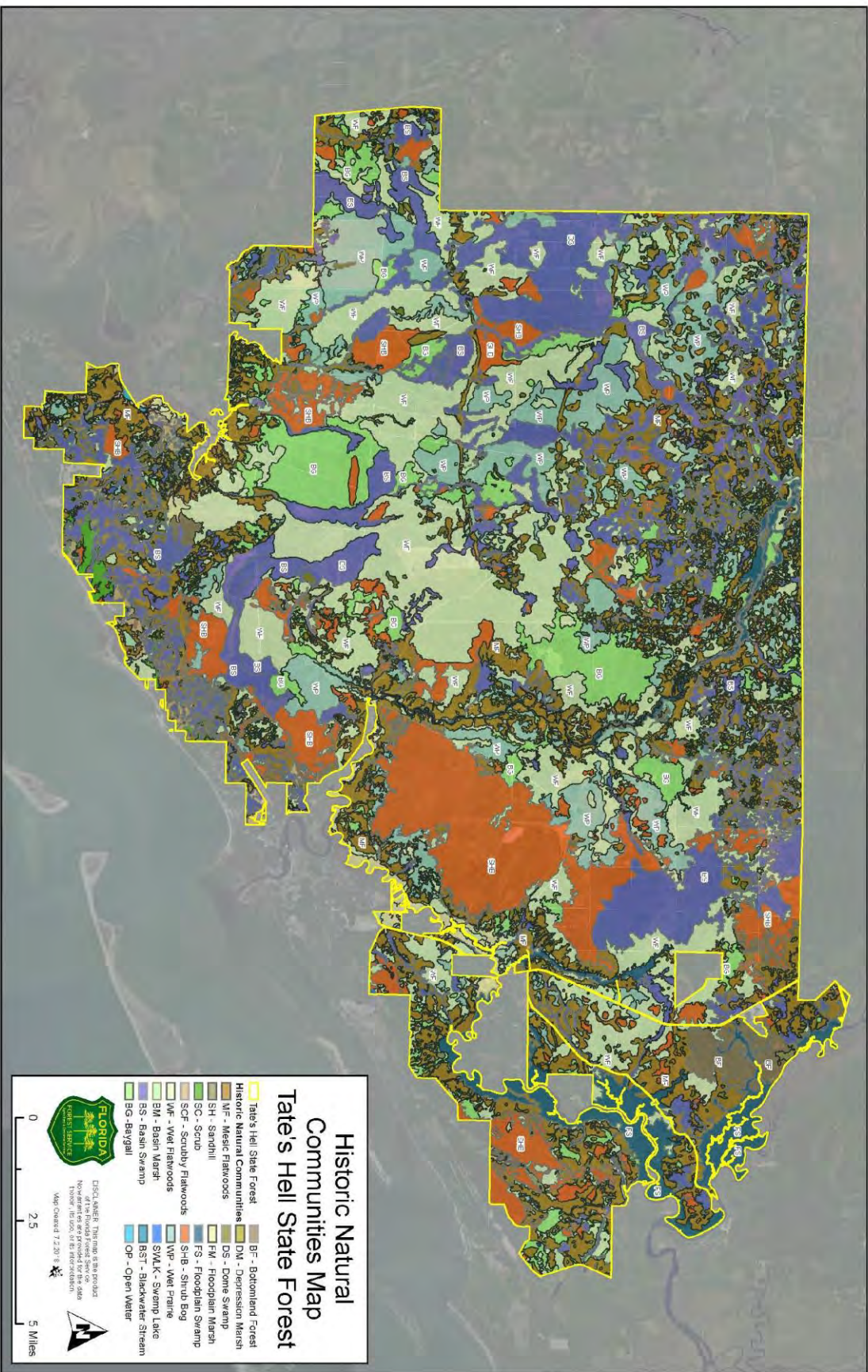




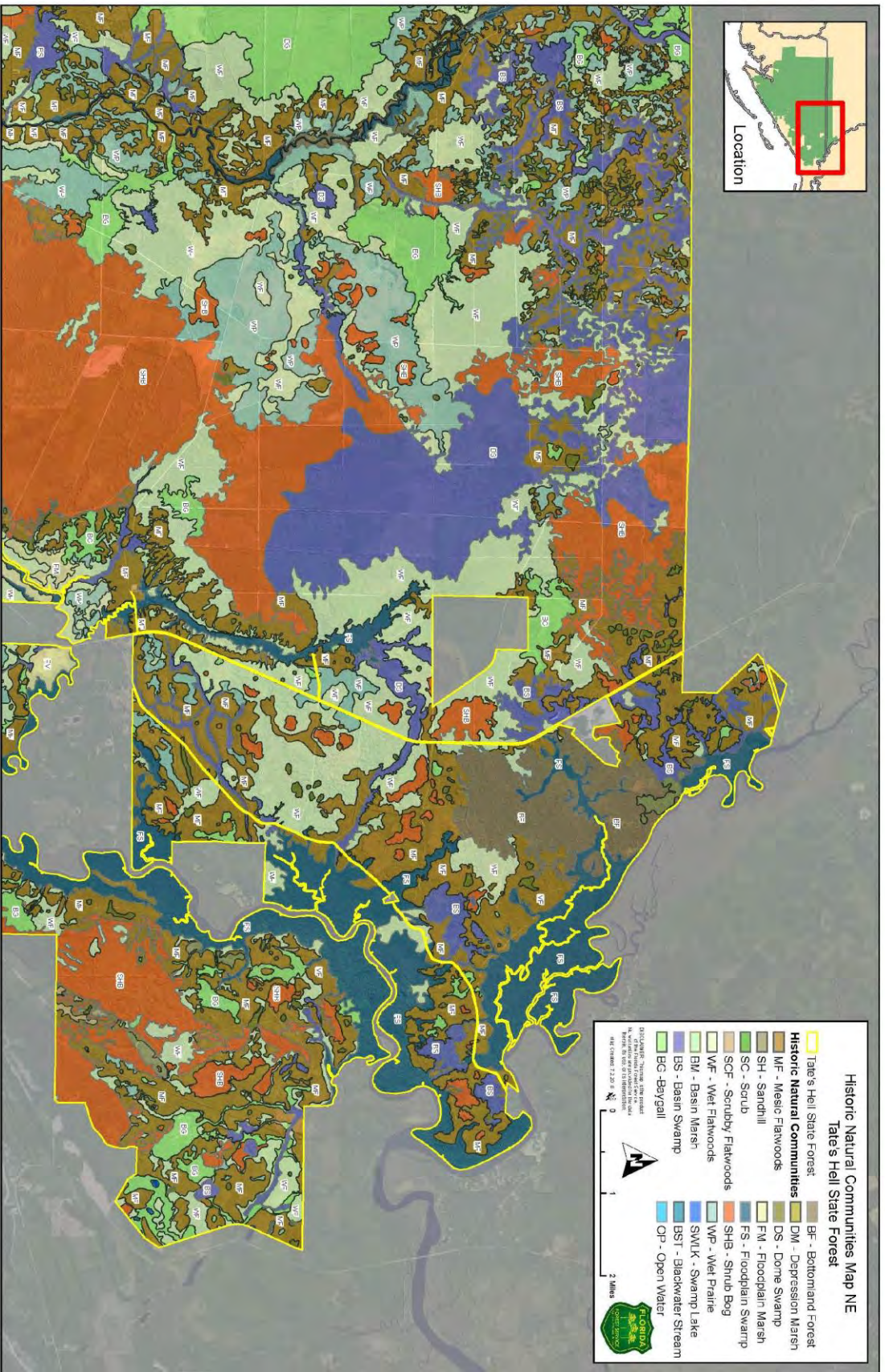
## Exhibit S

### Historic Natural Communities











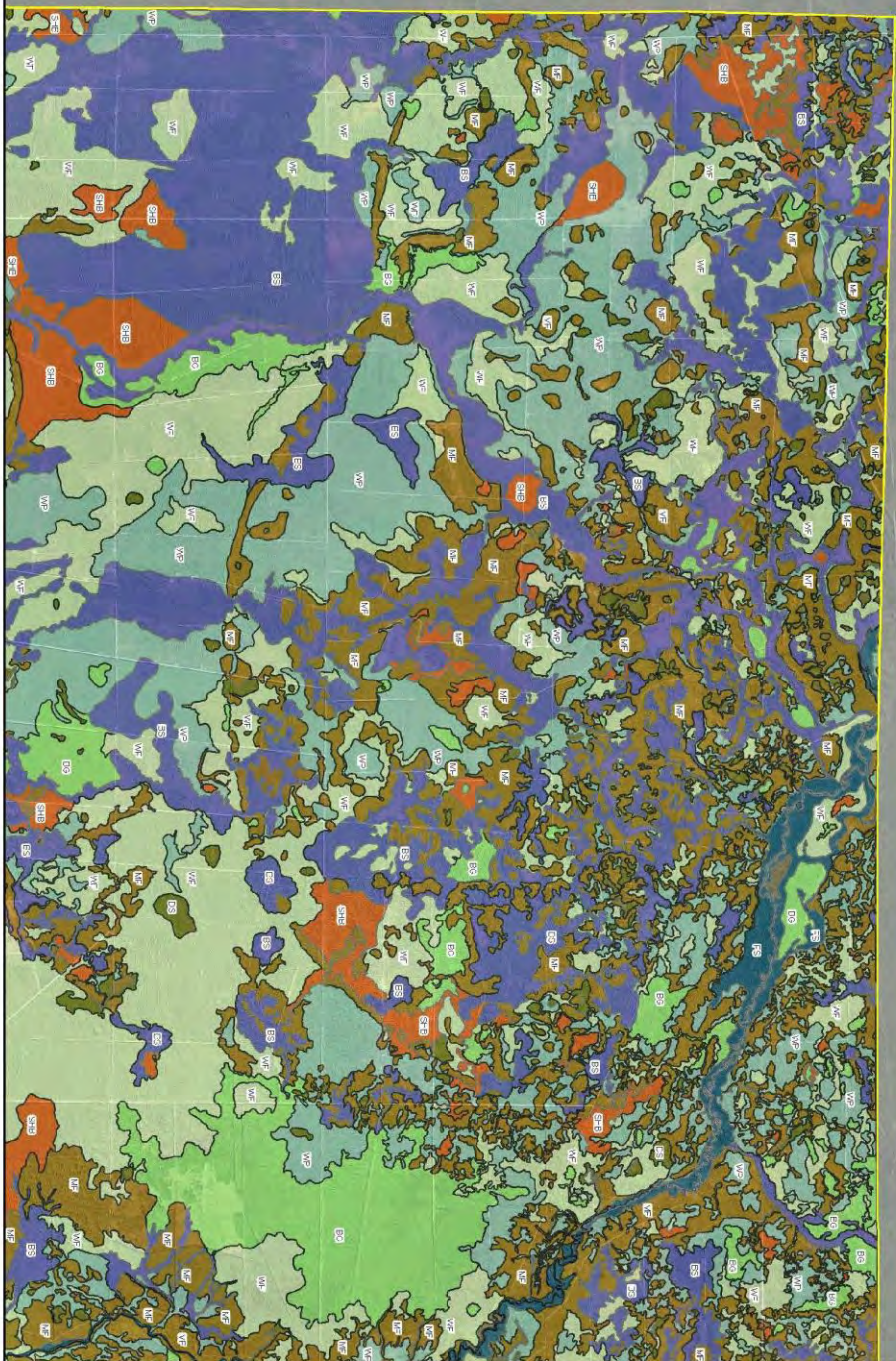
# Historic Natural Communities Map NW Tate's Hell State Forest

Tate's Hell State Forest

Historic Natural Communities

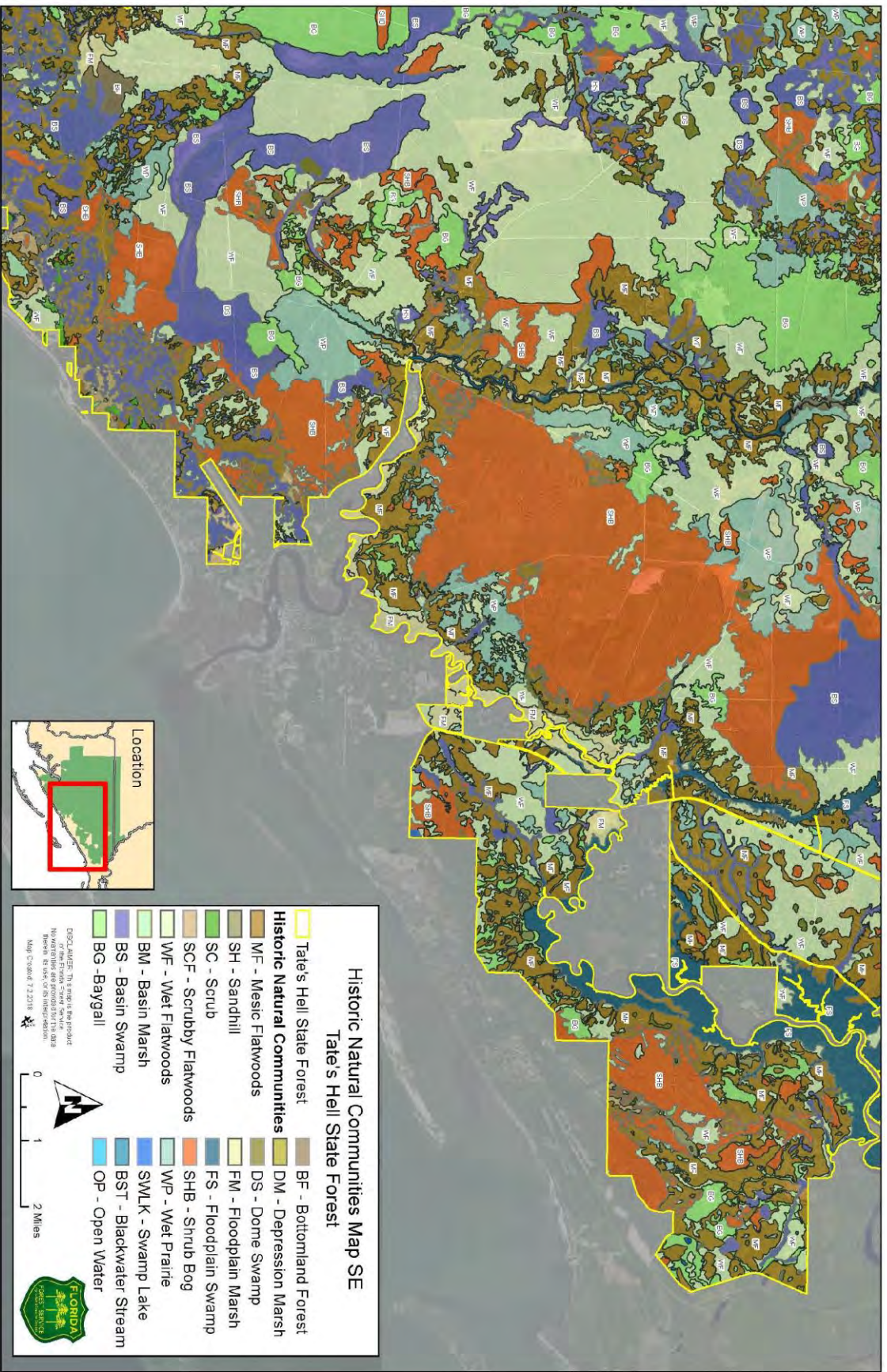
- MF - Mesic Flatwoods
- SH - Sandhill
- SC - Scrub
- SCF - Scrubby Flatwoods
- WF - Wet Flatwoods
- BM - Basin Marsh
- BS - Basin Swamp
- BG - Baygall
- BF - Bottomland Forest
- DM - Depression Marsh
- DS - Dome Swamp
- FM - Floodplain Marsh
- FS - Floodplain Swamp
- SHB - Shrub Bog
- WP - Wet Prairie
- SWLK - Swamp Lake
- BST - Blackwater Stream
- OP - Open Water

DISCLAIMER: This map is the property  
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It is not to be used for any other  
purpose without the written  
consent of the Florida Forest Service.  
Map Created 7/2/2016

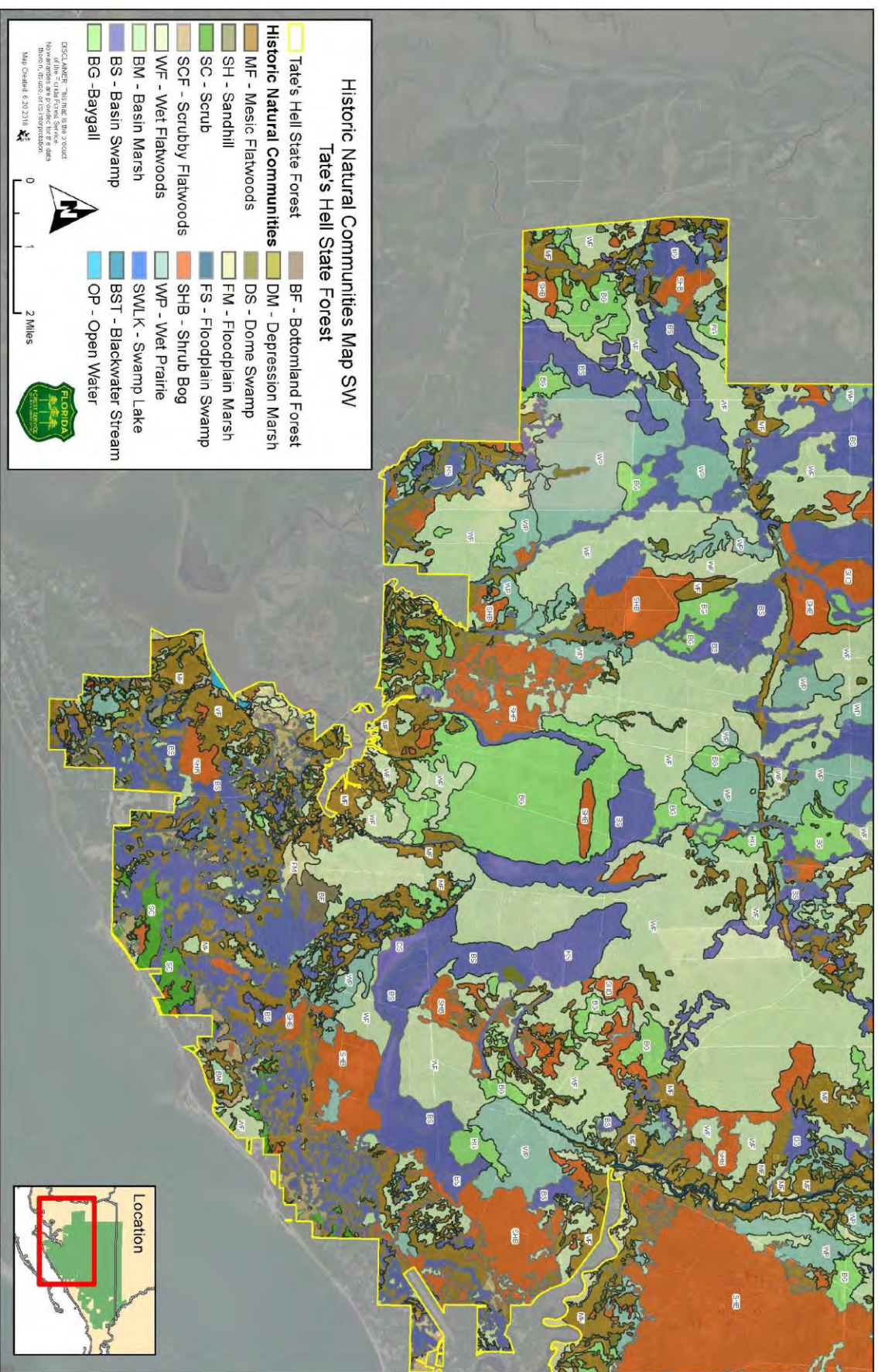


Location









## 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; Tate's Hell/Carrabelle Tract

| St. Joe Timberland<br>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

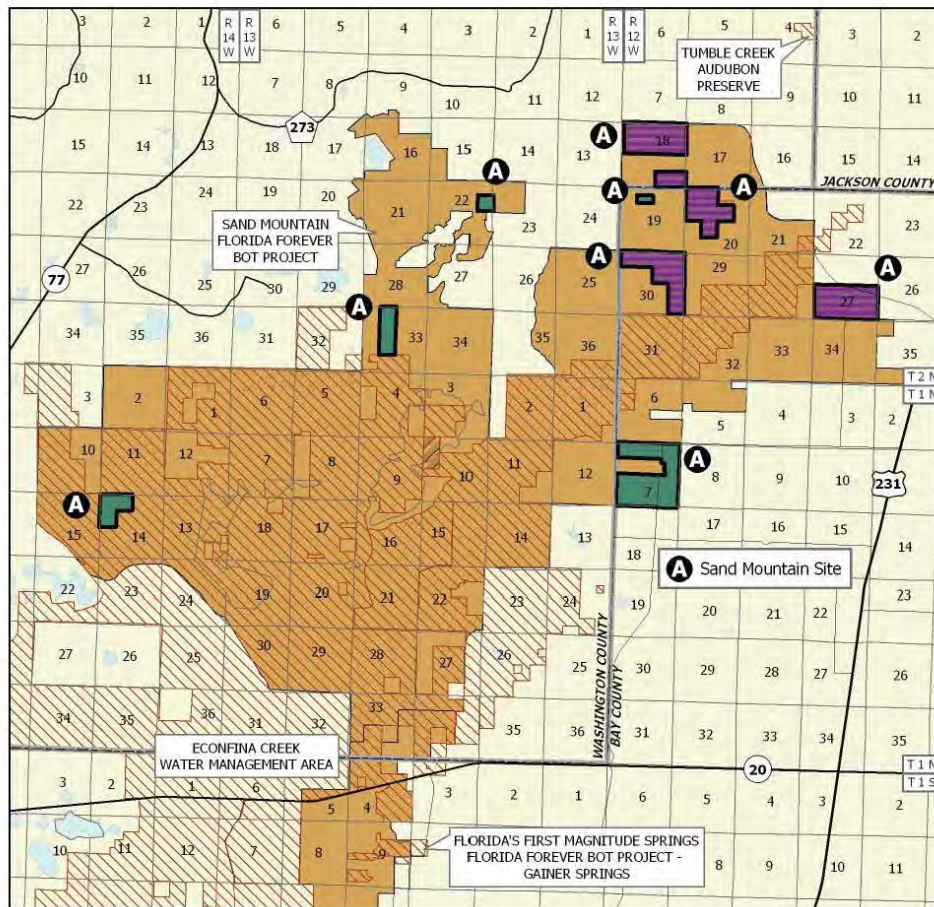
-  Florida Forever BOT Project Boundary
-  Essential Parcel(s) Remaining
-  Change in Ownership\*
-  State Owned Lands

\* 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

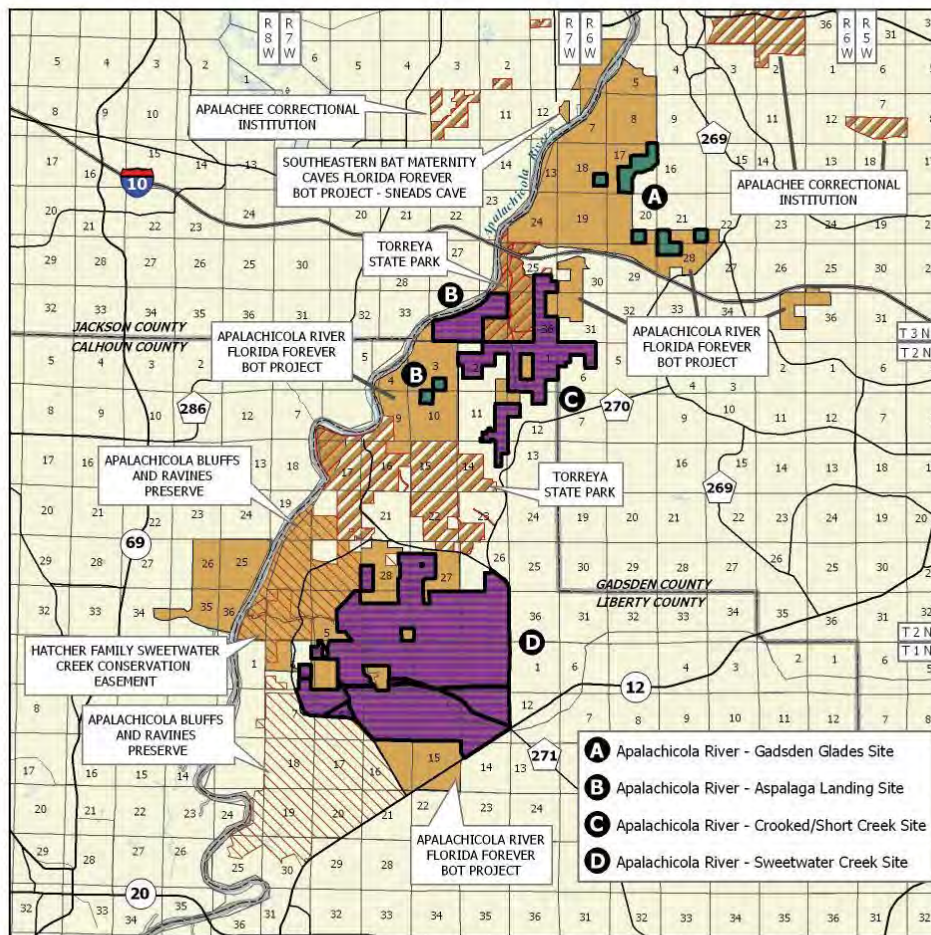
- Florida Forever BOT Project
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 1 2 4  
Miles



JUNE 2007





## ST. JOE TIMBERLAND: MAP 3 OF 9

### GADSDEN AND LIBERTY COUNTIES

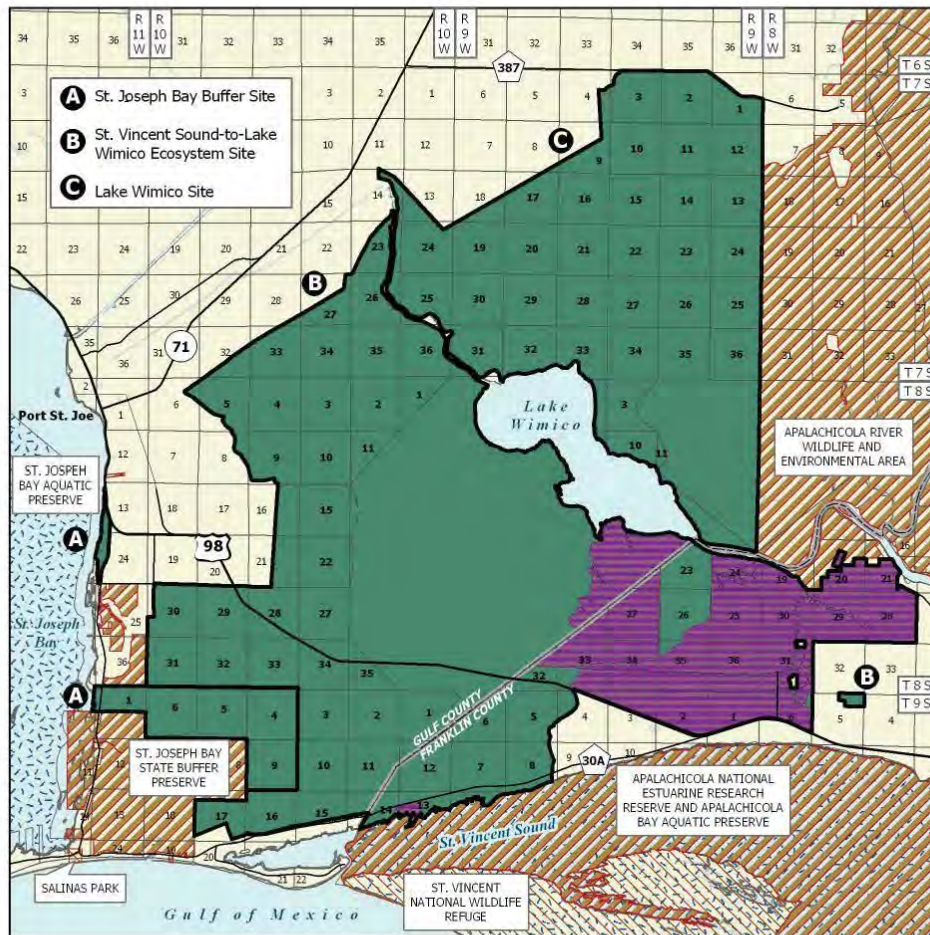
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands



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

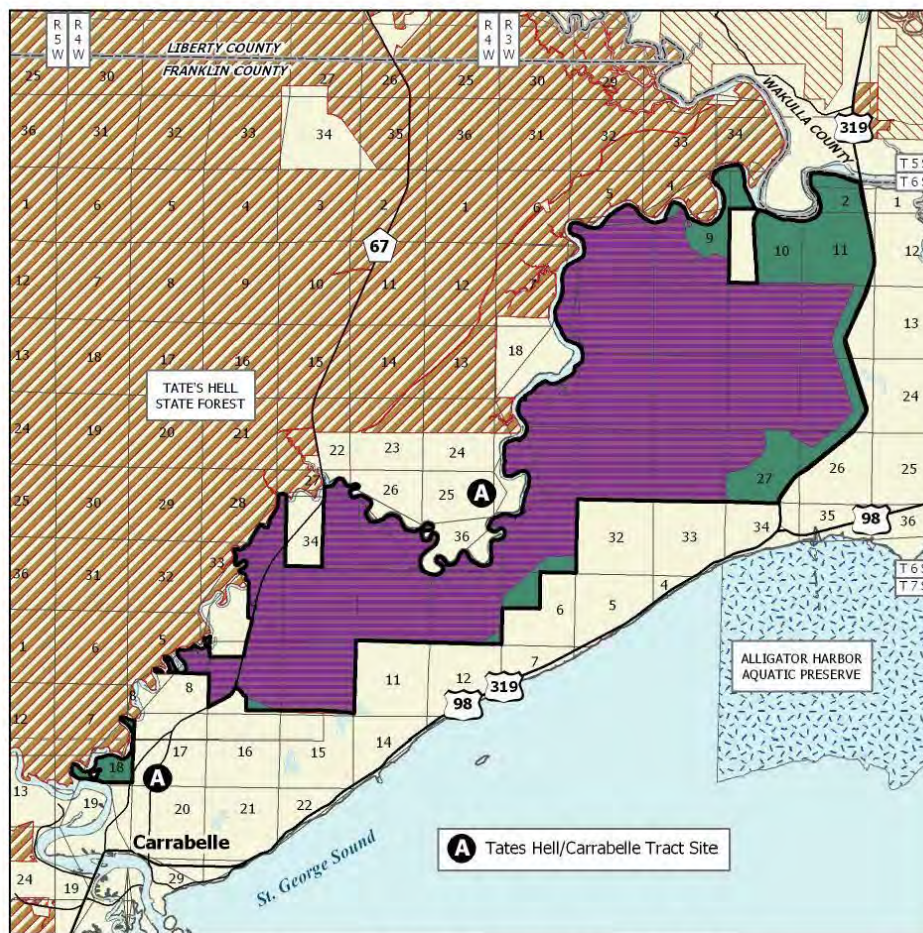


0 1 2 4  
 Miles



APRIL 2007





## ST. JOE TIMBERLAND: MAP 5 OF 9

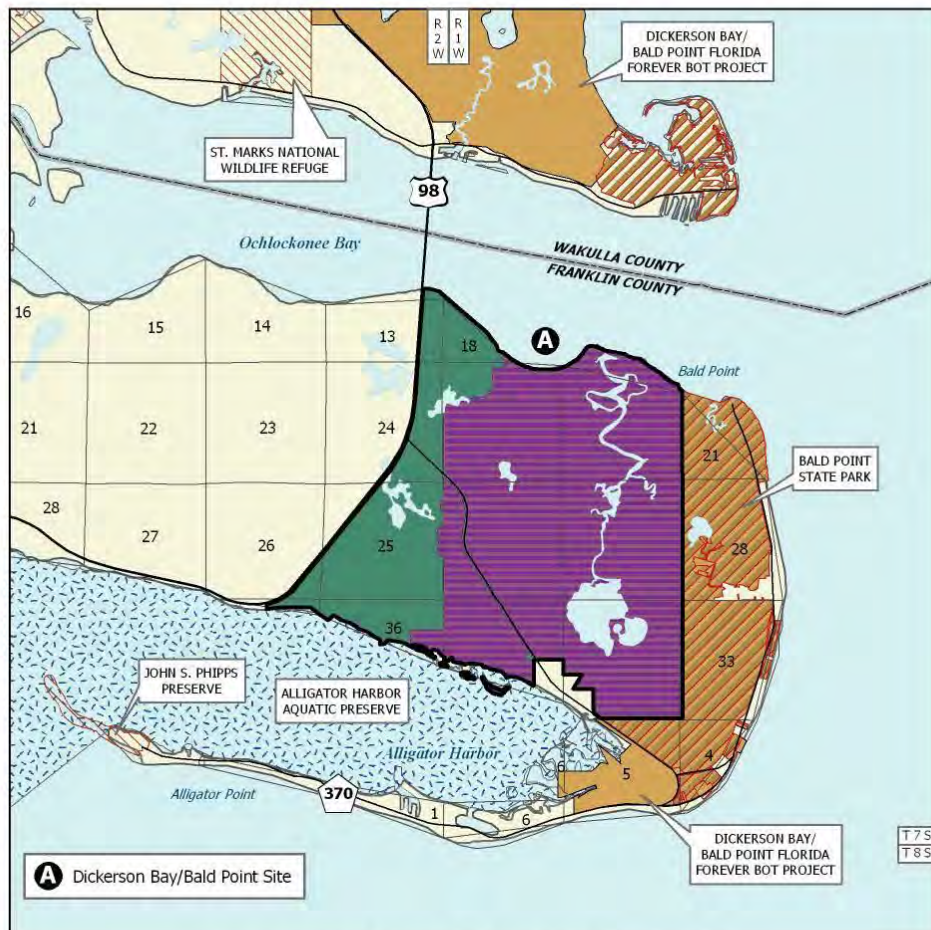
### FRANKLIN COUNTY

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

0 0.5 1 2  
Miles



MAY 2006



## ST. JOE TIMBERLAND: MAP 6 OF 9

### FRANKLIN COUNTY

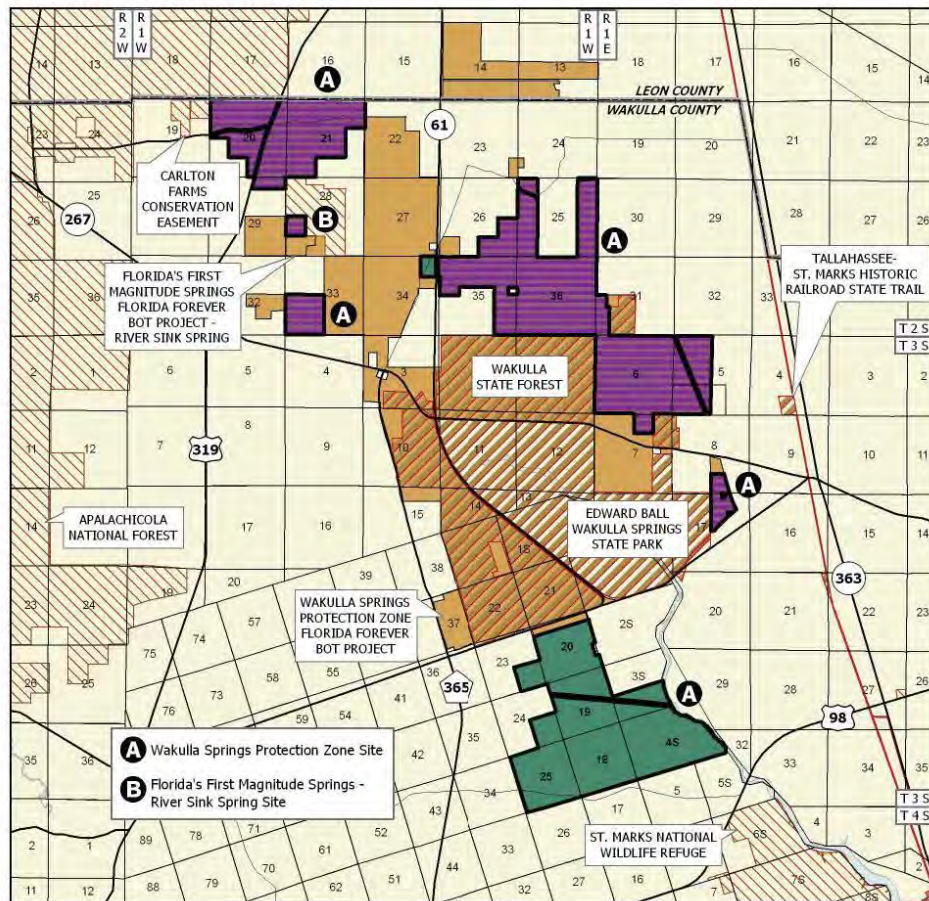
- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands
- State Aquatic Preserve

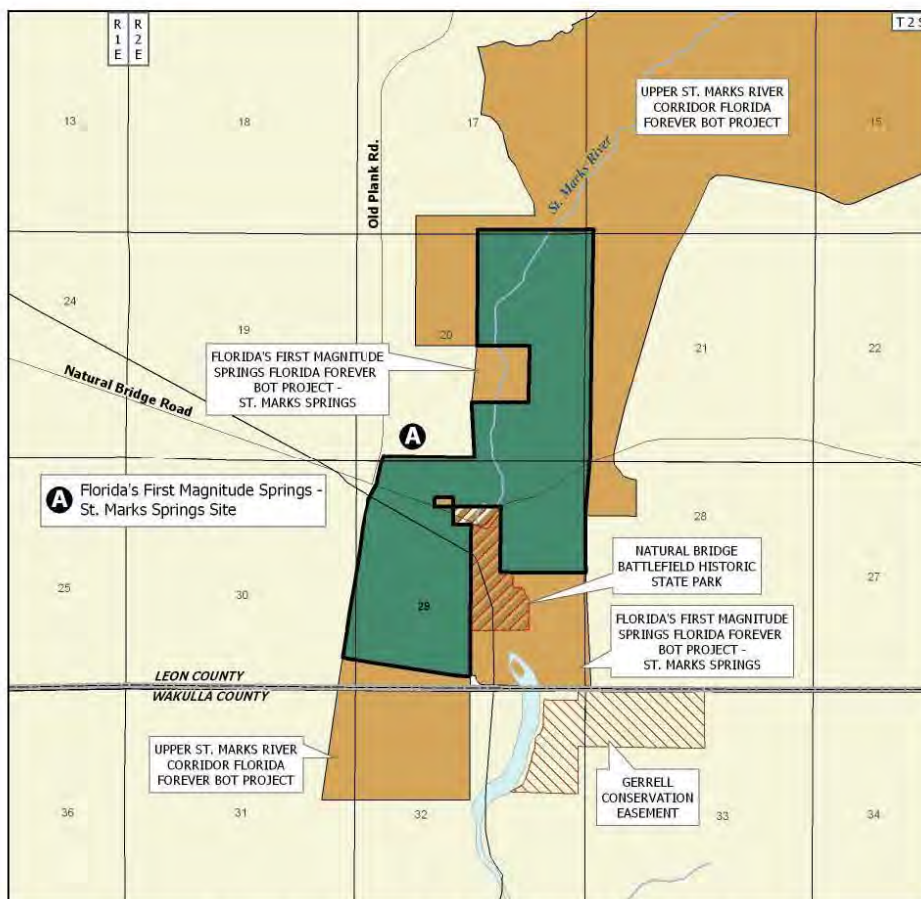
0 0.5 1 2  
Miles



MAY 2006



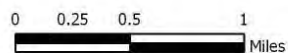




## ST. JOE TIMBERLAND: MAP 8 OF 9

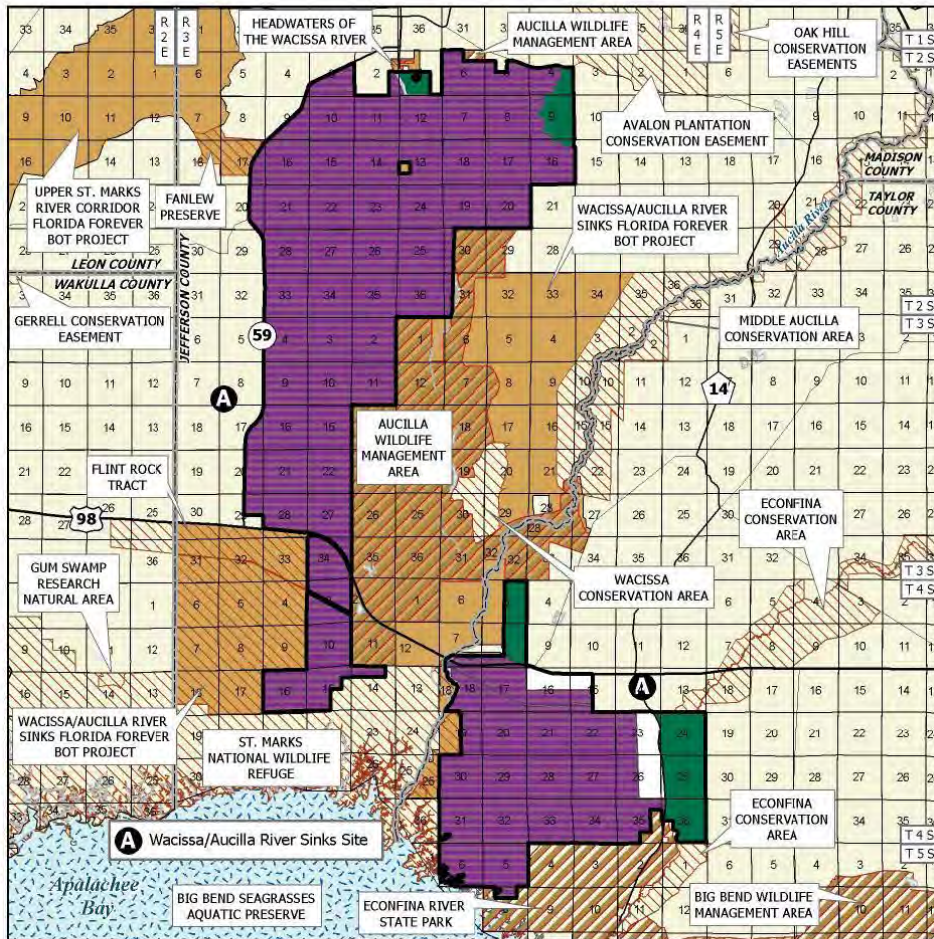
### LEON COUNTY

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



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.

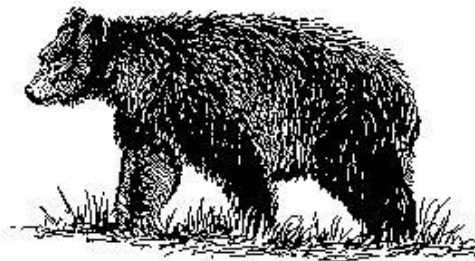
On December 9, 2011 ARC voted to place this project in the Climate Change Lands category of Florida Forever.

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

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## 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

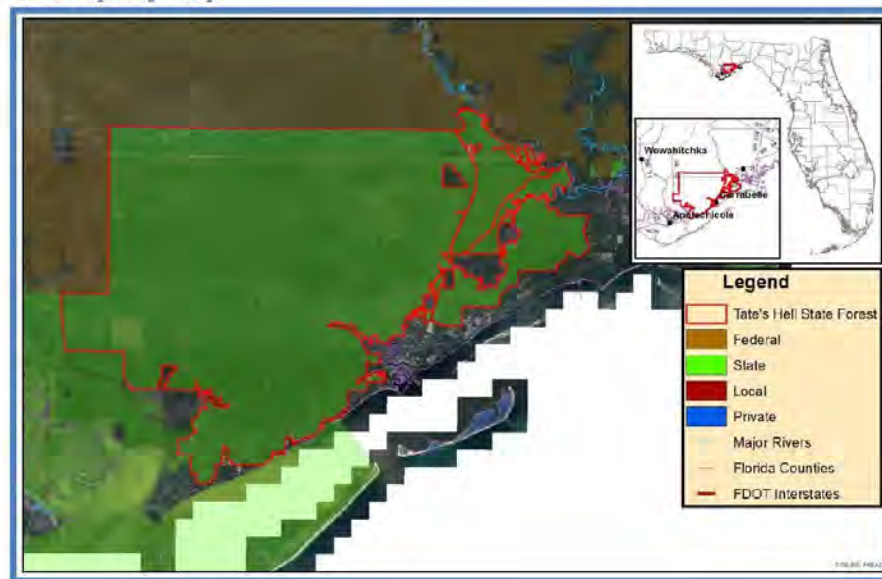
#### Review Team Members Present (voting)

- 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 - 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.F.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 |   | See Appendix A for detail |  |  |      |
|                                                          |           | Missing Vote  |   | Insufficient Information |   |      |   |                           |  |  |      |



### 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        |
| <b>Listed Species Average Score</b>                                         |           |   |   |   |   |   |   |   |  | <b>3.87</b> |
| <b>Natural Resources Survey/Management Resources (I.C)</b>                  |           |   |   |   |   |   |   |   |  |             |
| 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        |
| <b>Cultural Resources (Archeological &amp; Historic sites) (II.A, II.B)</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        |
| <b>Cultural Resources Average Score</b>                                     |           |   |   |   |   |   |   |   |  | <b>4.71</b> |
| <b>Resource Management, Prescribed Fire (III.A)</b>                         |           |   |   |   |   |   |   |   |  |             |
| 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        |
| <b>Resource Management, Prescribed Fire Average Score</b>                   |           |   |   |   |   |   |   |   |  | <b>4.86</b> |
| <b>Restoration (III.B)</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        |
| <b>Restoration Average Score</b>                                            |           |   |   |   |   |   |   |   |  | <b>4.57</b> |
| <b>Forest Management (III.C)</b>                                            |           |   |   |   |   |   |   |   |  |             |
| 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        |
| <b>Forest Management Average Score</b>                                      |           |   |   |   |   |   |   |   |  | <b>4.82</b> |
| <b>Non-Native, Invasive &amp; Problem Species (III.D)</b>                   |           |   |   |   |   |   |   |   |  |             |
| <b>Prevention</b>                                                           |           |   |   |   |   |   |   |   |  |             |
| 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        |
| <b>Control</b>                                                              |           |   |   |   |   |   |   |   |  |             |
| 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        |
| <b>Non-Native, Invasive &amp; Problem Species Average Score</b>             |           |   |   |   |   |   |   |   |  | <b>4.80</b> |



| 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        |
| <b>Managed Area Uses Average Score</b> |        |   |   |   |   |   |   |   |  | <b>4.81</b> |

**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](mailto: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<br>FOREST MGT. ONLY 17-<br>18 EXPENDITURES | Percentages Based<br>on Total Dollar<br>Amount of<br>Expenditures | Assessed Needed<br>Funding Based Upon<br>LMUAC Resource<br>Management |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Resource Management</b>                                                                                                                                                                           | <b>\$ 494,718</b>                                            | <b>25.50%</b>                                                     | <b>\$ 931,248.79</b>                                                  |
| 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 /<br>Boundary Line Maintenance / Forest<br>Inventories and Various Other Activities<br>/ Wildfire Suppression on State Forests                                            |                                                              |                                                                   |                                                                       |
|                                                                                                                                                                                                      |                                                              |                                                                   | \$ -                                                                  |
| <b>Administration</b>                                                                                                                                                                                | <b>\$ 124,482</b>                                            | <b>7.20%</b>                                                      | <b>\$ 262,940.76</b>                                                  |
| Central Office Headquarters                                                                                                                                                                          | \$ 124,482                                                   | 7.20%                                                             | \$ 262,940.76                                                         |
| District/Regions                                                                                                                                                                                     | \$ -                                                         |                                                                   | \$ -                                                                  |
| Units/Projects                                                                                                                                                                                       | \$ -                                                         |                                                                   | \$ -                                                                  |
|                                                                                                                                                                                                      | \$ -                                                         |                                                                   | \$ -                                                                  |
| <b>Support</b>                                                                                                                                                                                       | <b>\$ 586,101</b>                                            | <b>33.90%</b>                                                     | <b>\$ 1,238,012.75</b>                                                |
| 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<br>Maintenance / Technical Support /<br>Management of Apiary and Cattle<br>Leases / State Forest Leases, Lease<br>Amendments, Easements and Other<br>Various Activities | \$ -                                                         |                                                                   | \$ -                                                                  |
|                                                                                                                                                                                                      |                                                              |                                                                   | \$ -                                                                  |
| <b>Capital Improvements</b>                                                                                                                                                                          | <b>\$ 354,427</b>                                            | <b>20.50%</b>                                                     | <b>\$ 748,650.78</b>                                                  |
| New Facility Construction                                                                                                                                                                            | \$ 88,174                                                    | 5.10%                                                             | \$ 186,249.71                                                         |
| Facility Maintenance                                                                                                                                                                                 | \$ 266,252                                                   | 15.40%                                                            | \$ 562,401.07                                                         |
|                                                                                                                                                                                                      |                                                              |                                                                   | \$ -                                                                  |
| <b>Visitor Services/Recreation</b>                                                                                                                                                                   | <b>\$ 223,030</b>                                            | <b>12.90%</b>                                                     | <b>\$ 471,102.20</b>                                                  |
| Information/Education                                                                                                                                                                                | \$ 51,867                                                    | 3.00%                                                             | \$ 109,558.65                                                         |
| Operations                                                                                                                                                                                           | \$ 171,162                                                   | 9.90%                                                             | \$ 361,543.55                                                         |
|                                                                                                                                                                                                      |                                                              |                                                                   | \$ -                                                                  |
| <b>Law Enforcement</b>                                                                                                                                                                               | <b>\$ -</b>                                                  | <b>0.00%</b>                                                      | <b>\$ -</b>                                                           |
|                                                                                                                                                                                                      |                                                              |                                                                   |                                                                       |
| <b>Total</b>                                                                                                                                                                                         | <b>\$ 1,728,911</b>                                          | <b>100.00%</b>                                                    | <b>\$ 3,651,955</b>                                                   |

## 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

## Exhibit Z

### Tate's Hell State Forest Red-cockaded Woodpecker: History, Current Status, and 10-Year Management Plan

**TATE'S HELL STATE FOREST  
RED-COCKADED WOODPECKERS:  
HISTORY, CURRENT STATUS, AND TEN-YEAR  
MANAGEMENT PLAN**

**Prepared by:**

**Brian Camposano, Florida Forest Service**

**and**

**Diane Alix, Florida Fish and Wildlife Conservation Commission**

**March 2019**

**Approved**



**Director**

**Florida Forest Service**



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## INTRODUCTION

The red-cockaded woodpecker (RCW) was listed as endangered in 1970 (35 Federal Register 16047) and received federal protection with the passage of the Endangered Species Act in 1973 (Hardesty *et al.* 1997; USFWS 2003) and presently retains that status. Originally listed as a threatened state species by the Florida Fish and Wildlife Conservation Commission (FWC), the species was reclassified as a Species of Special Concern in 2003. As a result of revisions in the state’s threatened species rules in 2010, the state status is now listed as Federally Endangered. Florida’s statutes (e.g., s. 259.105(2)(a)11, F.S.) provide direction for state lands managers to advance the goals and objectives of imperiled species management on state lands.

The United States Fish and Wildlife Service RCW Recovery Plan (USFWS 2003; hereafter “Recovery Plan”) considered several populations in Florida and Mississippi together as part of the East Gulf Coastal Plain Recovery Unit. Tate’s Hell State Forest (THSF) is within the primary core population designated as the Central Florida Panhandle Unit (Figure 1). This population includes Apalachicola National Forest, St. Marks National Wildlife Refuge, and Ochlockonee River State Park. The East Gulf Coastal Plain Recovery Unit also includes the DeSoto National Forest and Eglin Air Force Base, which are both primary core populations. To meet delisting criteria, these populations, combined with the other named populations in the recovery unit, should total 1,000 potential breeding groups (PBGs) or more, while at least 11 of the 12 primary core populations (across the geographic range) also meet 350 or more PBGs.

The current boundary of THSF comprises over 202,400 acres in Franklin and Liberty counties. According to historical data, freshwater forested wetlands made up 30% of the historical land cover within THSF, while pine flatwoods accounted for 44% of THSF and shrub bogs and wet prairies accounted for 25%. From the 1950's through 1990's and prior to state ownership, the land was managed for timber production, and the landscape was largely altered to promote the growth of slash pine (*Pinus elliotii*). Presently, THSF is roughly 55% pine plantation, 17% pine flatwoods, 13% freshwater forested wetlands, and 10% prairies and bogs, though many pine plantations are considered "restoration pine flatwoods" and are undergoing management to restore to a more natural state. THSF's RCW population has persisted in remote, inaccessible areas where old-growth pines remain, though the majority of cavities presently occur in slash pine.

Although the first cluster on THSF was discovered in 1997, and an additional 28 clusters found in 1999, there has never been an approved management plan for RCWs on this property; though the population has otherwise been managed under the larger umbrella of the USFWS Recovery Plan. Since the discovery of RCWs on THSF, employee turnover and missing data has led to historical RCW management information for THSF that is somewhat incomplete. In recent years, annual breeding season data has been collected by the FWC staff on-site and included in reports to USFWS and annual WMA reports.

It is important to point out some of the constraints to management of RCWs on THSF, especially in relation to other Florida Forest Service managed populations. For example, Blackwater River, Goethe, and Withlacoochee State Forests all have RCW populations which occur in longleaf pine dominated systems; whereas at Tate's Hell State Forest, even-age slash pine dominates the landscape. This presents a unique situation for management, as slash pine senesces and dies far earlier than longleaf pine, and uneven-aged management has not been successful in slash pine stands with the fire return intervals recommended for RCW management. Virtually all research on the management of RCWs occurs in longleaf dominated systems. Given the current distribution of RCW clusters on THSF and the relative stand ages in which they occur, the population is likely to see some fluctuation as it grows over the coming years, as older stands become unsuitable for RCWs and younger stands establish and become suitable. Management techniques must be adaptable to meet the needs of both the forest and the RCW population, while not losing site of the larger goal of forest restoration.

The 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". By working together within FFS and with our partners, such as the FWC, the U.S. Fish and Wildlife Service, and volunteer organizations, protection of this valuable forest resource will be accomplished in fulfillment of the FFS mission. Although

recovery of RCWs may require additional management considerations, this plan does little to alter current public use and will have minimal impact on current resource management activities and strategies.

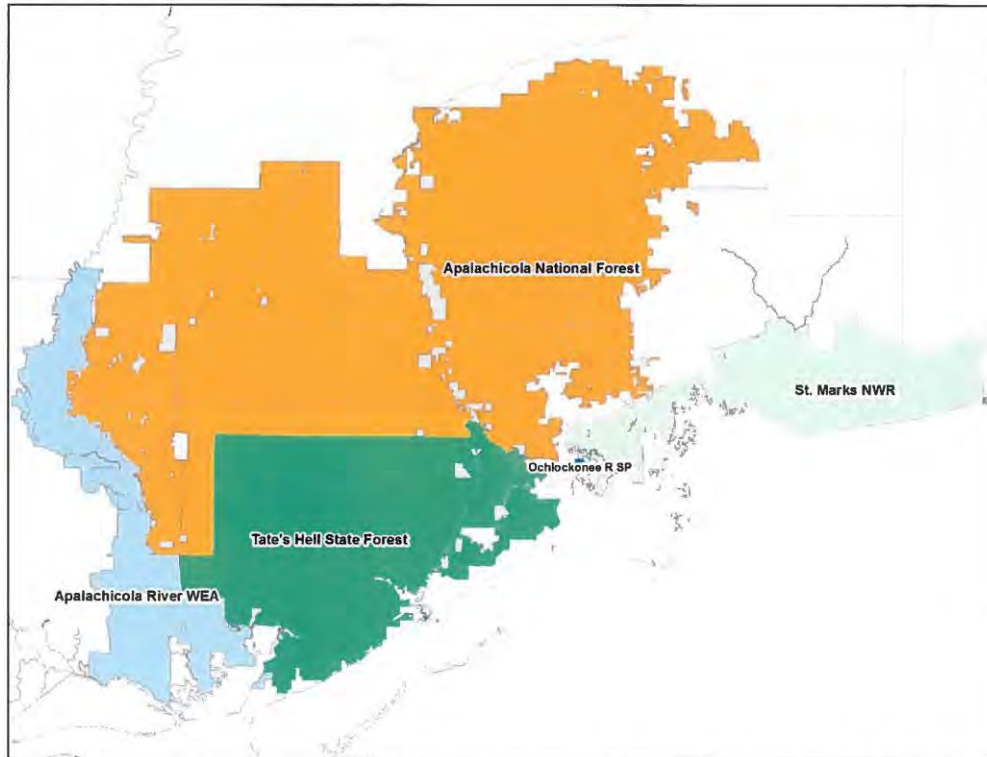


Figure 1. Tate's Hell State Forest and other properties within the Central Florida Panhandle Recovery Unit.

## SITE HISTORY

The natural landscape that historically comprised Tate's Hell was a mosaic of open pinelands; extensive, open, wet grass and pitcher plant savannas; and, cypress sloughs. Pine densities were typically low (30-80 ft<sup>2</sup>/ac.), especially in the savannas where there were thousands of acres with few or no trees at all (0-15 trees per/acre). Most areas had a lush groundcover of wiregrass and other herbaceous plants. Carnivorous plants such as pitcher plants and sundews were very common, owing to the low natural fertility of the soil. It is generally accepted that longleaf pine (*Pinus palustris*) was prevalent on the drier areas, and slash pine (*Pinus elliottii*) and pond pine (*Pinus serotina*) were more prevalent in the wet areas. Pine forests likely contained a mixture of



slash, longleaf, and pond pine. Pond cypress dominated the sloughs and was also scattered throughout the wet flatwoods. Woody shrubs were generally low in density and height, and occurred mainly in the cypress sloughs, basin swamps, shrub wetlands, mixed forest wetlands and some wet/mesic flatwoods. Fires frequently burned large areas, and some areas may have burned more than once in a single year.

By 1877, the town of Carrabelle was founded and catered to the growing timber industry, primarily turpentine. Between 1900-1950 cattle grazing, turpentine, and lumbering continued as major drivers of the local economy. Cattlemen used pine savannahs for grazing and set spring fires to the grass understory to improve foraging, which helped maintain the open understory in many areas together with frequent natural fires. A large lumber mill at Harbeson City was supplied with trees mainly from eastern areas of Tate's Hell. Most harvested trees were the older saw timber pines, and smaller pines were left.

Logging operations resulted in a large network of trams throughout Tate's Hell. Large-scale logging did not occur in most of Tate's Hell until the mid to late 1900's. Around this time, various timber companies purchased the land and major efforts were made to convert the area to slash pine plantations. An extensive network of roads and ditches was developed, and most of the remaining pines were harvested. Most of the harvested areas were bedded and replanted with slash pines at relatively high densities (i.e., 700 trees/acre). Some areas with lower tree densities (e.g., wet savannas) were drained and seeded, or allowed to reseed naturally. Fertilizers were used to speed the growth of the pines, and fires were suppressed to prevent tree mortality. Older pines were left only in scattered areas that were either too small or too wet to be harvested efficiently. The elimination of fire, dryer conditions, intensive site preparation, and increased fertility encouraged tremendous growth of woody shrubs and concomitant loss of herbaceous groundcover. The woody shrubs such as swamp titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), and gallberry (*Ilex glabra*) continue to flourish throughout the forest and make the re-entry of fire into these stands difficult.

In the late 1900's, the rotation age (20-30 years) for most of the pine plantations was reached, and the trees on these sites were harvested. Acquisition of THSF began in 1994 with an initial 24,706 acres, which was followed by the purchase of another 136,000 acres as part of the Preservation 2000 and Conservation and Restoration Lands (CARL) programs. The main purposes of the purchase were to prevent degradation of the waters of Apalachicola Bay by preventing commercial, agricultural, silvicultural and residential development, to restore the altered ecosystems and correct environmental damage, and to protect and conserve rare and endemic plant and animal species and their habitats found in the area, including such species as Florida black bear (*Ursus americanus floridanus*) and RCW.

Much of the land was purchased with existing timber leases. These leases have since been bought out or harvested and the land is now entirely under state management. Current restoration practices include annual prescribed burning, retention of relict trees, thinning even-aged pine stands, reforestation of understocked stands, and maintaining an appropriate basal area across the forest. All of these activities will serve to improve the conditions for the continued use and potential expansion of RCWs.

## POPULATION STATUS

The first two clusters were discovered in 1997-1998. In 1999, staff used low-altitude helicopter surveys to search for new cavity trees. An additional 28 clusters were discovered through this method (Sullivan 2004). Aerial surveys are still being used to locate previously unknown clusters in inaccessible areas. The number of RCW clusters on THSF has steadily increased since 2006 largely due to the discovery of previously unknown natural clusters, the establishment of recruitment clusters, and the splitting of existing clusters (Figure 2). As of spring 2018, there were 73 known RCW clusters on THSF, 61 of which were recorded as active (Figure 3).

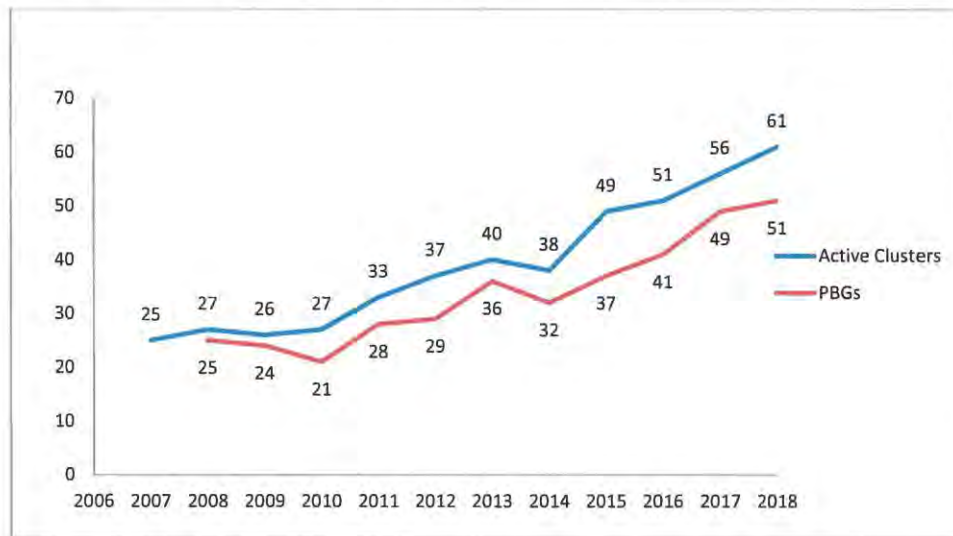


Figure 2. THSF active RCW clusters and PBGs from 2006-2018.

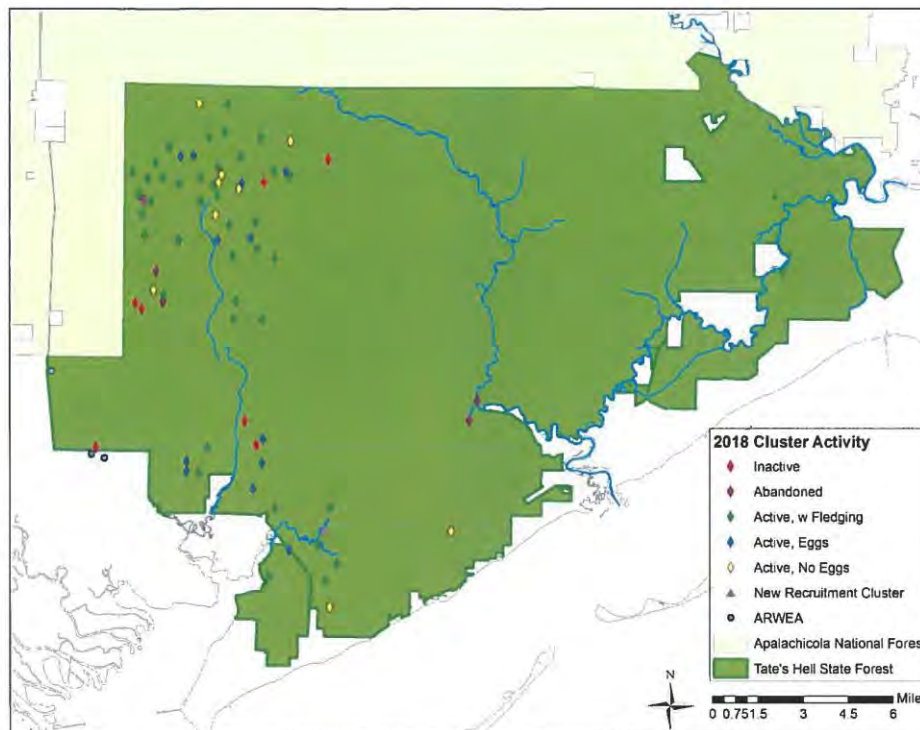


Figure 3. Locations and 2018 breeding status of RCW clusters on THSF.

## GENERAL UPDATES SINCE ACQUISITION

### Land Acquisition

The majority of land acquisition for THSF occurred between 1994 – 2000, funded largely by Preservation 2000. Since 2000, there have been five acquisitions totaling just over 57,928 acres, with the most recent being in the New River Unit as the result of a land swap with the United State Department of Agriculture – Forest Service. Further details may be found in the THSF 10-Year Resource Management Plan (Florida Forest Service 2019).

### Staffing

Currently, there is no FFS Forest Biologist on THSF. However, FWC contributes one Biological Scientist III, one full-time OPS Wildlife Technician, one partial-time OPS Technician, and one Biological Intern to wildlife management and monitoring for the area, which includes the management of RCWs on the forest. FFS staff at Tate's Hell consists of one Operations Administrator, two Forest Area Supervisors, one Forestry Supervisor II, three foresters, three

forestry technicians, and numerous forest rangers. FFS staff assist with RCW management activities when requested.

### Natural Community Mapping

After the initial property acquisition, FNAI (1997, 2000) delineated 14 historical ecological communities within THSF based on a review of 1953 aerial photography, soils maps, field data, and other information. In 2016 and 2017, FNAI was contracted by FFS to revise the historic natural communities map, map communities on acquisitions after the initial mapping effort, and create a current natural community inventory, resulting in 26 natural community types and/or land cover classifications (Table 1).

Table 1. Acreages of each natural community, both historic and current, as well as altered land cover types mapped on THSF in 2016 and 2017.

| Natural Community                    | Historic Acreage | Current Acreage |
|--------------------------------------|------------------|-----------------|
| Basin Marsh                          | 495              | 425             |
| Basin Swamp                          | 35997            | 17294           |
| Baygall                              | 13579            | 2975            |
| Blackwater Stream                    | 305              | 306             |
| Bottomland Forest                    | 1961             | 1878            |
| Depression Marsh                     | 140              | 123             |
| Dome Swamp                           | 2500             | 1466            |
| Floodplain Marsh                     | 1787             | 1671            |
| Floodplain Swamp                     | 6517             | 6380            |
| Mesic Flatwoods                      | 39883            | 18417           |
| Pine Plantation                      | 0                | 112940          |
| Sandhill                             | 494              | 314             |
| Scrub                                | 658              | 615             |
| Scrubby Flatwoods                    | 925              | 861             |
| Shrub Bog                            | 25342            | 12185           |
| Successional Hydric Shrubland/Forest | 0                | 853             |
| Swamp Lake                           | 29               | 27              |
| Wet Flatwoods                        | 48895            | 14460           |
| Wet Prairie                          | 24908            | 8293            |
|                                      |                  |                 |
| Altered Landcover Types              |                  |                 |
| Artificial Pond                      | 0                | 48              |
| Canal/Ditch                          | 0                | 33              |
| Clearing                             | 0                | 198             |
| Developed                            | 0                | 12              |
| Impoundment                          | 0                | 41              |
| Road                                 | 0                | 2439            |
| Utility Corridor                     | 0                | 166             |



Presently, the RCW population on THSF occurs entirely on the western side of the New River, bisecting the forest. Within this area, RCW clusters occur in areas historically typed as mesic and wet flatwoods, wet prairie, and basin swamp; the latter two not necessarily associated with RCW habitat. Clusters within areas which are typed as wet prairies or basin swamps generally occur on dryer islands within the larger community and retain some older-growth longleaf pines that were inaccessible to harvest prior to state acquisition. However, clusters occurring in more hydric areas throughout the forest often spend at least part of the year either partially or wholly submerged – but are often still productive in terms of producing offspring. Current natural community types mapped on THSF within RCW habitat include all of the same communities as the historic typing, with the inclusion of pine plantation and the “restoration” areas within each community, or those areas actively being restored to a more natural state.

### **Hurricane Impacts**

Historically, strong hurricanes have not majorly impacted THSF. Prior to 2018, the last major storm to affect the area was Hurricane Dennis (2005), which came ashore near Santa Rosa Island as a category 3 storm; still far to the west of THSF. However, on October 10, 2018, Hurricane Michael came ashore in Mexico Beach as the 3<sup>rd</sup> most intense storm (in terms of central pressure) to make landfall in the contiguous United States, with sustained winds up to 155 miles per hour that strengthened right up until landfall. This storm caused billions of dollars of property damage and leveled entire forests; leaving trees snapped like matchsticks. Although the effects of this storm were widespread and very devastating, THSF largely escaped major damage to the forest, especially compared to Apalachicola National Forest to the north and west. A total of 25 cavity trees were lost on THSF during Hurricane Michael, though other trees are now windthrown and leaning (especially in foraging habitat) and may ultimately be lost where the lean is too pronounced. The other major concern from Hurricane Michael is the degree to which saltwater intrusion affects the trees still standing, as roughly one-quarter of THSF was exposed to some degree of storm surge. Any potential effects from storm surge will likely show this spring as trees begin to break dormancy. As a result, it will be imperative to monitor all clusters for signs of mortality associated with saltwater during spring and summer 2019.

### **Prescribed Fire**

Prescribed fire is essential not only to RCW management and survival, but to the integrity and health of longleaf pine ecosystems and other pine-forested systems in the southeastern United States. Overall, THSF has been successful with establishing and growing the prescribed fire program since 1997, except where extended droughts or other unfavorable burning conditions precluded fire (Figure 4). The prescribed fire accomplishments generally grew from the 1997-98 fiscal year until hitting a peak (in terms of acreage burned) during the 2007-08 fiscal year, and has subsequently levelled out somewhat, accomplishing somewhere between 35,000 – 45,000 acres annually.

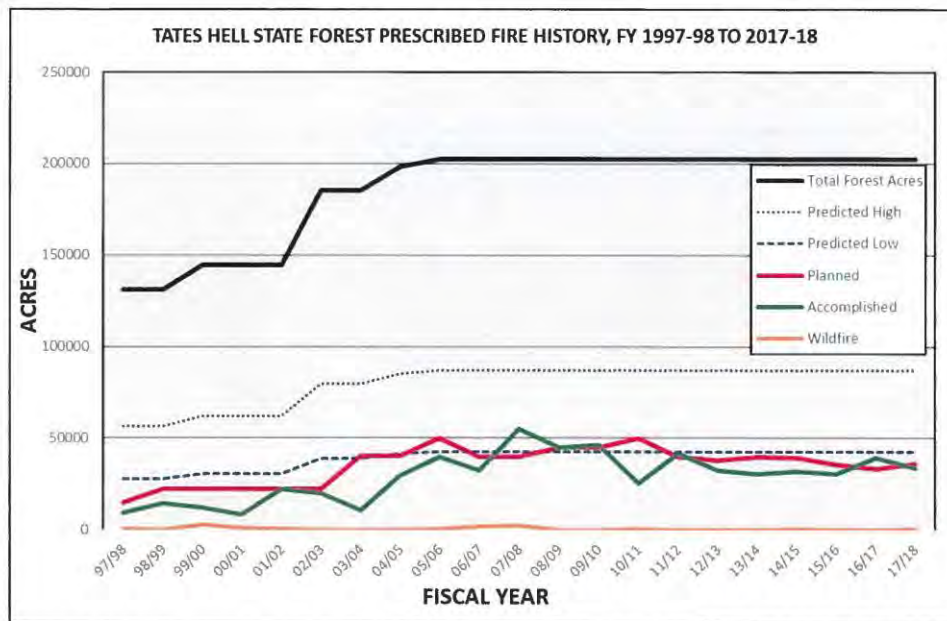


Figure 4. Historic prescribed fire planning and accomplishments from FY 1997-98 to FY 2017-18. Note that the dashed lines represent the projected annual maximum and minimum acreage needed to achieve the forest-wide fire return interval, while the red line represents what was planned for burning each year and the green line represents actual acres burned.

Prescribed fire has focused on all upland sites, especially those that are, or may potentially become, occupied by RCWs, though habitat associated with RCW clusters is highly variable in terms of ecological condition. THSF was very intensively managed and harvested for wood fiber production and not managed with prescribed fire prior to state acquisition, leaving few older trees, diminished foraging habitat, and ample fuel for fires. At the same time, much of the planted pine on THSF is slash pine (*Pinus elliottii*), which is not the most ideal pine species for RCWs. Since state acquisition, staff at THSF has worked tirelessly to conduct timber thinning, reintroduce prescribed fire, and restore habitat degraded by prior management. Still, some areas of the forest are not ecologically capable of sustaining RCWs primarily due to stand age and structure, species composition, and prescribed fire history.

Growing season fire provides additional ecosystem benefits compared to dormant season fire (e.g., increase in herbaceous groundcover biomass, flowering, and seed viability). Examining the prescribed burn history from FY 2000-01 through FY 2017-18 (Figure 5), there has been a slight increase in growing season burning, especially in May, when comparing the previous six years to the 12 years prior to that time, though there is an evident decrease in prescribed burning later in

the growing season. Very heavy fuels often prevent prescribed burning in the growing season on THSF, except where areas have been burned numerous times and fuel levels are much lower. Fortunately, some growing season fire on THSF is focused in and around habitat that supports RCWs. The reduced acreage burned later in the growing season is attributed to conditions unfavorable for prescribed fire. Conditions may include excessive amounts of rainfall preventing a successful prescribed burn or to avoid additional stressors to pines.

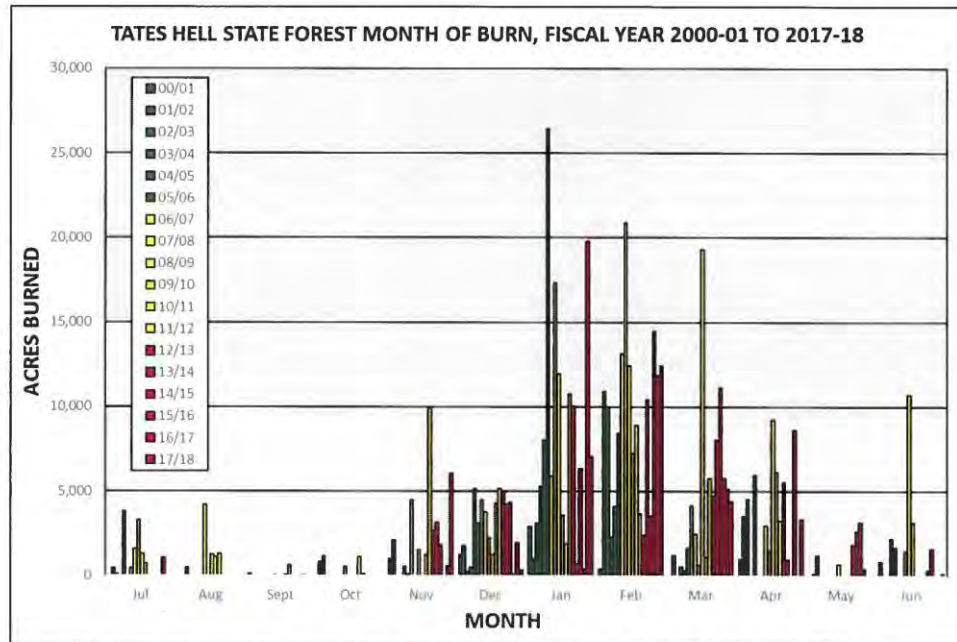


Figure 5. Acreage burned by month on Tate's Hell State Forest from FY 2000-01 to 2017-18.

## POPULATION STATUS AND ACCOMPLISHMENTS TO 2019

### Banding

Banding efforts are coordinated among the Central Florida Panhandle Recovery Unit. All nestlings have been banded every year that staff were available. Records are maintained at the Tate's Hell office in Carrabelle and provided to Forest Management personnel as needed.

### Translocation and Relocation

Translocation has never occurred on THSF, and there are currently no plans for either translocation or relocation on THSF. These techniques should be considered to expand the

population in new areas of the forest or for mate provisioning in clusters with single birds, where appropriate.

### **Cluster Zone Management**

Clusters (both new and existing) should be marked and maintained in accordance with the Cluster Zone Management standards and guidelines (see Appendix A1). Emphasis should be placed on timber stand improvement (TSI) activities within the 10-acre zone around each cluster to control cavity competitors and discourage cluster abandonment. This should be accomplished and maintained wherever possible with prescribed fire.

Active clusters have been well marked and managed in compliance with the Cluster Zone Management standards within the surrounding 10-acre area. As midstory vegetation continues to decrease through mechanical treatments and dormant season prescribed fire, an effort will be made to increase growing season burning in suitable clusters and foraging areas.

### **Artificial Cavity Inserts and Recruitment Clusters**

Artificial inserts should be added or replaced to ensure that each existing cluster has at least four suitable cavities following USFWS Recovery Plan guidelines. Further, recruitment clusters should be established and maintained in proportion to the number of occupied clusters, such that the amount of recruitment clusters is 10% or greater of the total occupied clusters. Recruitment clusters should be maintained in good condition by maintaining four suitable cavities.

On THSF, all guidelines were followed as outlined in the Recovery Plan. Although recruitment clusters were created and maintained, some never became occupied. Artificial inserts were also utilized to maintain the minimum four usable cavities in each existing cluster as specified in the Recovery Plan. Artificial cavity inserts and recruitment cluster installation activity is summarized below (Table 2).

Table 2. RCW cavity inserts installed on Tate's Hell State Forest, 2001-2019. Missing years indicate no inserts were installed or there is missing data.

|         | Total Installed | New Recruitment Clusters | Rehabbed Inactive Clusters |
|---------|-----------------|--------------------------|----------------------------|
| 2001    | 3               |                          | 1                          |
| 2002    | 13              |                          |                            |
| 2003    | 10              | 2                        |                            |
| 2004    | 20              | 4                        |                            |
| 2005    | 15              | 3                        |                            |
| 2006-09 | 0               |                          |                            |
| 2010    | 29              | 5                        | 1                          |
| 2011    | 32              | 4                        |                            |
| 2012    | 13              |                          | 1                          |



|       |     |    |    |
|-------|-----|----|----|
| 2013  | 0   |    |    |
| 2014  | 30  | 3  | 2  |
| 2015  | 30  | 0  | 2  |
| 2016  | 32  | 2  | 2  |
| 2017  | 30  | 3  | 1  |
| 2018  | 20  | 1  | 2  |
| Total | 277 | 27 | 12 |

### **Non-Native Invasive Species**

Non-native, invasive species threaten the integrity of the ecosystems that support RCWs not only on THSF, but throughout the range of the species. Non-native invasive species should be treated with priority given to those infestations that pose the greatest threat to RCWs. Staff has maintained the non-native, invasive species treatment program on THSF and has utilized herbicide to aggressively treat invasive plant species regardless of proximity to RCW trees on an annual basis. THSF employs staff members to conduct the treatment and monitoring of non-native, invasive species on all tracts of the forest.

### **Foraging Habitat Maintenance**

Foraging habitat should be maintained according to guidelines described in the Recovery Plan (USFWS 2003) and Appendix 2. To implement this, staff utilize the prescribed burn program and timber management program, which has been successful overall. Although we do not have formal trend data in relation to hardwood control and groundcover condition, casual observations indicate that both characteristics continue to improve. Generally, foraging habitat has continued to improve since the implementation of active management. Still, there are areas where foraging habitat does not meet the minimum “managed stability” guidelines in terms of midstory and groundcover, which leaves room for improvement. In terms of pine stocking density, basal area is quite variable, but generally meets the “managed stability” standard in most places. Current and future forest management practices do and will fully integrate harmonious timber and RCW management.

### **Timber Management Guidelines**

Coordination and communication between the THSF field staff and FWC biologist should occur regularly to ensure that silvicultural strategies and activities support RCW habitat improvement and sustainability while still fulfilling silvicultural goals and objectives, which has been successful overall. THSF has generally been operating under the timber management guidelines established in the Recovery Plan (USFWS 2003). The THSF staff has completed annual timber inventory on all applicable stands across the forest, including those with foraging habitat. THSF staff will continue to update timber inventories throughout the forest to better inform forest management decisions, as well as those related to RCWs. THSF staff, in consultation with the FFS

Forest Management Bureau and the USFWS, will use this data (as appropriate) to redefine specific stand requirements for RCWs at THSF to allow for compatible timber harvest.

### **Population and Habitat Monitoring**

RCW population and habitat monitoring must be completed annually. Population monitoring involves banding legs of individual birds with unique color-coded bands and a numbered metal band, and maintaining records pertaining to cluster activity status, nesting, fledging success, and population dynamics. Habitat monitoring pertains to individual cavity trees, clusters, and foraging zone conditions, including silvicultural operations.

All THSF RCWs have been banded as described above when staff was available to conduct banding activities. Each cluster has been visited at least once annually and inspected in accordance with the USFWS Recovery Plan protocol. All clusters have been monitored for nesting activity and to identify and map all cavity trees. All relevant data has been collected and maintained. Staff has used this data to make annual maps and to graphically demonstrate changes in population size.

Habitat monitoring has been conducted in multiple ways. Timber inventory data has been collected in all RCW foraging partitions on THSF. This data should be sufficient to perform a foraging analysis and determine what resources are necessary for nesting success. Ground cover monitoring, as well as general habitat monitoring, has been conducted less systematically. However, focus has been on the prescribed burn program and the maintenance of the RCW population. Attempts have been made to collect ground cover data during the timber inventory process, though FFS does not currently require this as a component of this process.

### **Disaster Contingency Plan**

A written RCW disaster contingency plan has been developed to anticipate activities that may be needed in the event of a hurricane or other weather phenomenon that damages RCW nesting and foraging habitat. The plan is included as Appendix A4.

### **Partnerships**

The partnership between FFS and FWC to manage the RCW population on THSF is of critical importance. FWC is the lead in all population and habitat monitoring work on THSF, working closely with FFS staff to discuss issues and solve problems as they arise. FFS and FWC staff also cooperate with the Southern Range Translocation Cooperative (SRTC), and the "All Florida" group, which brings together all Florida RCW population managers for annual discussion on recovery efforts across the state, though THSF does not presently request birds for translocation. These partnerships have been maintained and strengthened over time and continue to do so. The Florida Forest Service also occasionally utilizes assistance from the Department of

Corrections to assist with conducting pre-burn vegetation control activities in and around RCW cavity trees.

### **Summary**

On a qualitative basis, the relative success of initiating a RCW management program and subsequent growth since 1997 can be attributed to all of the efforts described above. THSF and FWC staff have undergone a coordinated effort to remove and control midstory vegetation in cluster zones, to increase prescribed burning forest-wide, to install recruitment clusters and augment cavities in cluster zones, and to band and track birds within the population.

The initial management and associated activities have been successful. THSF has expanded from an undiscovered population in 1997 to 51 potential breeding groups in 2018. All chicks have been banded (when staff has been available), though unbanded adults are routinely observed and most likely originate from the much larger Apalachicola National Forest population or undiscovered clusters on THSF. Overall, RCW habitat is also improving and increasing in both quality and quantity.

### **GOALS AND OBJECTIVES: 2019-2029**

The overarching long-term goals for RCWs on THSF are:

- To achieve a RCW population whose size and distribution will allow the maintenance of a viable population with the minimal need to construct artificial cavities or to translocate birds; and,
- To achieve and maintain this population while at the same time maintaining appropriate and compatible levels of other multiple use activities, including recreation and a viable, sustainable timber management program that includes even and uneven-aged management and the continued harvest of pine.

The FFS is committed to achieving these goals through coordination, communication, and involvement of all FFS and FWC staff, and other partners who can help achieve these goals. These goals will be accomplished through a combination of habitat and population management tools, including innovative timber management techniques, prescribed burning, control of non-native invasive species, intra-population translocation (if warranted), placement of artificial cavities and/or drilled starts, placement of recruitment clusters, rehabilitation of inactive or currently abandoned clusters, and natural growth of the resident population.

### **Population Objective and Rationale**

The long-term intent of the FFS at THSF is that management of forest resources occurs in such a way that suitable RCW habitat exists in appropriate community types, and that intensive

management of RCWs is no longer needed. At that point, only non-intensive population sampling should occur to ensure there are no population decline trends, although continued protection of cavity trees and cluster zones will be necessary. Setting a numerical objective is useful in developing and achieving specific objectives, providing a level of certainty, and determining the resources necessary to reach the objectives.

A reasonable interim population objective for THSF is 75 potential breeding groups, which takes into account tract size and spatial arrangement of clusters that facilitates long term survival of the species. Preferably, this population goal would be sufficient so the natural dispersal of RCWs both within THSF and between THSF and adjacent populations (e.g. Apalachicola National Forest) occurs and helps decrease the threats associated with stochastic events, catastrophes, and genetic drift and inbreeding, which otherwise may occur in any population with less than 250 potential breeding groups. RCWs have naturally dispersed onto THSF on at least ten documented occasions (since 2013) from the Apalachicola River Wildlife and Environmental Area (ARWEA) and ANF, and likely have dispersed to other populations from THSF, and therefore, it is possible natural dispersal will continue to occur. Occasional inter-population immigration and emigration can be a powerful force to resist genetic drift and inbreeding.

Achieving the target population goal will help facilitate range-wide recovery and the ultimate down-listing and/or delisting of the RCW. As part of the Central Florida Panhandle Primary Core population with 75 potential breeding groups, THSF would contribute to the 1000 potential breeding groups required in the Central Florida Panhandle Primary Core population for delisting purposes, though a property like Apalachicola National Forest is expected to contribute the bulk of required potential breeding groups at time of delisting.

Currently on THSF, there are 68 managed clusters and 51 potential breeding groups. There are numerous potential sites suitable for new recruitment clusters, with additional sites becoming available each year with continued restoration and management. Also, there are five abandoned clusters; though only two of which could become active and support RCWs with additional prescribed burning and cavity management. The largest limiting factor to growth on THSF is the age structure and species composition of the forest. As mentioned previously in the plan, the forest was managed very intensively prior to acquisition by the state, including the installation of hundreds of miles of roads and ditches, harvesting of nearly all the old-growth longleaf pine, utilizing high-intensity site preparation techniques, and reforestation utilizing largely slash pine on sites with altered hydrology. As a result, restoration has been a slow process since THSF was acquired by the state of Florida. RCWs have managed to hang on in part because of the close proximity to the much larger population at ANF and what little residual longleaf was left on THSF, but also largely in part from the restoration and management efforts by FFS and FWC staff since the mid-1990's. With proper management, the forest structure has begun to improve toward a



more natural system and RCWs have begun naturally creating cavities in slash pine. These conditions will only continue to improve over time, and as a result, the RCW population should respond accordingly.

The interim population objective of 75 should not be viewed as the final goal for THSF, but rather the next decision point for population management objectives, forest management needs, and needs associated with intensive species monitoring and management. Any future plan(s) should focus on natural population expansion to areas of the forest unoccupied by RCWs, minimizing the need for intensive and specialized management techniques (e.g., recruitment cluster construction, chick banding, etc.), unless such management techniques are still warranted. Further, any such plan should emphasize sound forest and foraging habitat management, and continued integration of all THSF programs in such a way that the multiple uses of silviculture, recreation, RCW management, prescribed burning, and others exist over the whole forest.

### **Time Line for Population Objectives**

Currently in the planning and growth process, goals do not need to be maximized or based on fixed percentages. THSF contains far more potential habitat than could possibly be restored and/or occupied in the next 10-year period. Since proper habitat restoration takes many years, often decades, population management over the next ten-year period should focus on maintaining an overall positive population growth rate. Sufficient growth rates can be achieved through natural expansions, addition of one or more managed recruitment clusters per year, natural recruitment, and through proper land management. Clusters can be added as prescribed burning restores potential sites with at least four trees (preferably six or more) of suitable diameter. Growth will occur as natural expansion occurs and recruitment clusters become occupied over time, while active clusters grow from a single bird or a captured status (e.g., not an independent cluster) to a potential breeding group.

The need for artificial recruitment clusters will be evaluated against overall population growth and the discovery or development of natural clusters. Additional recruitment clusters should be added when existing managed clusters begin to exceed 90% occupancy, and suitable recruitment cluster sites are available. When fewer than 10% of the managed clusters are vacant, recruitment clusters may be strategically placed in suitable habitat in accordance with the recruitment cluster plan developed for THSF. The number of unoccupied, available clusters on the forest is equal to approximately 10% of the number of existing active clusters. Recruitment clusters should be located at least 500 meters (3/10 mile) from an existing cluster, contain a minimal amount of hardwoods in the canopy and midstory (ideally at or below 10 ft<sup>2</sup>/ac basal area, though this condition is rarely met on THSF), and have several suitable pines greater than 14" in diameter at breast height in close proximity to each other. Prescribed burning should be conducted according

to the recommended fire return interval to begin preparing habitat for new clusters, as well as provide for other ecosystem needs.

Objective 1: Maintain a population growth rate so that the objective of 75 potential breeding groups across THSF can be attained in ten years. [TFC, FWC, and FM]

Objective 2: During this ten-year period, the objective of recruitment cluster placement will be to continue to enhance and strengthen the aggregation of clusters within the forest and in relation to other managed lands. The emphasis will be on maintaining existing recruitment clusters, rehabilitating old clusters, strategic placement of new recruitment clusters, and relocating birds to single bird or single sex clusters and to recruitment clusters or rehabilitated clusters. Replacement of old artificial cavities will continue as necessary. [THSF and FWC]

Objective 3: Once the objective of 75 PBGs is reached on THSF, the plan will be revised to set a new population objective (if deemed necessary). However, any new plan developed should focus more on holistic forest and foraging habitat maintenance than on artificial cavity construction and should continue to assure the integration of all THSF programs in such a way that the multiple uses of silviculture, recreation, RCW management, prescribed burning, and others exist over the whole forest. [TFC, FWC, and FM]

Objective 4: Continue to evaluate THSF for evidence of natural RCW activity in areas not currently occupied by RCWs, including aerial surveys by FWC. [THSF and FWC]

### **Staffing**

As the THSF RCW population has grown, the magnitude of prescribed burning and tree preparation, monitoring, banding, habitat maintenance, cluster management and all other associated activities has also increased. Currently, FWC is the lead on all RCW population monitoring and management, as FFS does not have a dedicated biologist position on staff at THSF. FWC and FFS staff can become strained with RCW management activities, particularly during nesting season, and it is especially difficult to keep RCW trees prepared for prescribed burning year-round. As a result, we must explore options to lessen the burdens for RCW management staff, whether by reducing and streamlining RCW field work or increasing the capacity of field staff. RCW management activities that are essential will be identified and completed through cooperation between FWC and FFS. Additional funding may be necessary for contracts and/or OPS labor to complete activities. Volunteers are intermittently utilized for various tasks as appropriate (e.g., fledge checks, activity checks, tree prep) though they are not necessarily a reliable source of staffing. Inmate crews are also occasionally utilized for tree preparation ahead of prescribed fires.

Objective 5: Maintain current staffing levels, which are sufficient for the current management level, while seeking additional assistance to sustain growth as needed. The options for assistance include requesting a full-time FFS biologist position for THSF, additional assistance from the FWC WMA office, and/or funding an OPS Biological Scientist II, either through FFS budget request or from grant funds. [THSF, FWC, and FM]

Objective 6: Utilize Department of Corrections inmates to prepare RCW trees for prescribed burning and utilize volunteers for RCW-related activities as appropriate. [THSF and FWC]

Objective 7: Maintain sufficient staffing or increase staffing to carry out sufficient prescribed burning to maximize good burn days when fuel, weather, and resource conditions allow. Utilize burn teams when they are available. [TFC and FWC]

Objective 8: Develop an annual budget for RCW management materials and supplies, including those necessary for artificial cavities, climbing trees, using “peeper scopes” for examining cavities from the ground, banding, cluster zone maintenance, and others. Maintain a cache of inserts needed for hurricane preparation. [THSF and FWC]

### **Banding**

Banding 100% of chicks each year has become an onerous, time-consuming process that unnecessarily risks harm to individual birds through handling and band failure without a distinct, biological reason for doing so. Banding has been instituted across the range of RCW populations to track recovery of individual populations and to track individual birds during translocations. At THSF, no translocation activities have been conducted, and due to the current size of the population, it is ineligible to receive translocated birds from outside of the population. Therefore, THSF will use a modified banding protocol to band a subset of chicks each year in the forest to monitor population trends and ensure the population maintains a positive growth rate.

Objective 9: Within the first year of plan approval, develop and implement a modified banding protocol based on the THSF population size and guidelines in the USFWS Recovery Guidelines. Band all nestlings from selected clusters annually and maintain associated records. Evaluate whether sufficient population data for management can be attained by banding a subset of the population and if not, revert to banding 100% of chicks each year. Any intra-population translocations should utilize only banded birds to track success. [THSF, FWC, and FM]

### **Population Monitoring**

Objective 10: Continue full monitoring of the populations through annual cavity tree and cluster surveys in all THSF clusters indefinitely. All cavity trees and clusters will be visited annually to obtain data used for mapping and reporting. [THSF and FWC]

### **Translocation and Relocation**

THSF has never utilized inter-population translocation onto the forest and is presently larger than the maximum threshold to accept translocated birds. Since the population grows with proper management and there is not a surplus of suitable habitat immediately available for translocation, THSF will not seek this type of translocation onto the forest, except in the event of a catastrophic event which significantly reduces the population, or it is otherwise determined to be necessary to maintain the population.

Objective 11: Utilize intra-population translocation on a small scale, if necessary, to encourage gene flow and mitigate effects of demographic stochasticity. This could be accomplished by moving individual birds of the opposite sex to single bird groups. This practice, known as mate provisioning, could significantly minimize inbreeding in the absence of natural dispersal. [TFC and FWC]

### **Cluster Zone Management**

Objective 12: Keep all new and existing cluster trees well marked and mapped. Ten-acre cluster buffer zones will be marked on the ground only when needed for protection of the cluster in cases when forest activities could threaten cavity trees. (See Appendix A1 for marking protocol). [THSF and FWC]

Objective 13: Seek to keep clusters from becoming inactive due to excessive midstory development. Hardwood tree species taller than 15' in height should not be allowed to grow within 100' of any active cavity tree. Continue timber stand improvement activities of hardwoods and pines, when needed, in the 10-acre buffer zone around each cluster to control cavity competitors and discourage cluster abandonment. Hardwood control should be accomplished through prescribed fire whenever possible. Shrubby oak patches and other woody vegetation may also be treated with appropriate herbicide applications as necessary. [THSF and FWC]

Objective 14: Avoid placement of new food plots in RCW cluster and foraging zones. [TFC and FWC]

### **Artificial Cavity Inserts and Recruitment Clusters**

Objective 15: Add and replace artificial inserts, drilled cavities, or drilled starts to ensure that each active cluster has at least four suitable cavities. These artificial cavities should be placed in trees within the existing cluster zone, if possible. Other factors affecting cavity suitability may be addressed on a case by case basis, such as removing flying squirrels and wasps. If a cavity is habitually inhabited by flying squirrels, or not used for several years, it may be considered unsuitable and an additional cavity can be added as a replacement. [THSF and FWC]



Objective 16: Within the first year of implementation of this plan, and in coordination and consultation between TFC staff, FWC staff, and the State Lands Section of the Forest Management Bureau, a map will be developed that shows where potential recruitment clusters may be placed, and/or existing clusters reactivated for the next five to ten-year period. This map will be updated as appropriate until the population objective for this plan has been reached. The map will be submitted to the Forest Management Bureau Chief and FFS Director for review and approval. Recruitment clusters should be located strategically to strengthen current population aggregation and to offset any cluster losses in senescent slash pine stands. [TFC, FWC, and FM]

The map should show active clusters and potential breeding groups from the most recent breeding season, inactive clusters (including historical), foraging zone partitions around each active cluster, and the stands within which proposed recruitment clusters will be located over the next five to ten years. The map will be accompanied by a brief plan that includes a potential timeline of recruitment cluster installation and the condition (age, basal area, density, midstory, groundcover, burn history, etc.) of stands within the half mile partition of the recruitment clusters. This map may be revised annually, as needed, and as conditions change across the forest which may warrant revising recruitment cluster plans for any given year.

Objective 17: Once the map from objective 16 is approved, establish, monitor, and maintain the recruitment clusters following the guidelines presented in Appendix A1. Revisions to the map must be approved by the Forest Management Bureau Chief and FFS Director. [TFC, FWC, and FM]

### **Prescribed Fire**

Prescribed burning is the single most significant element to managing RCWs. Overall, the appropriate fire return interval for communities on THSF is once every 2-3 years in RCW habitat. At least half of this burning should be done in the growing season, when fuel loading and weather considerations allow. RCW population growth rates level off and subsequently decline during the years when prescribed fire frequencies are not maintained. Growing season burning, generally during the period from April to August, maintains suitable habitat for RCWs and other pineland species, maintains plant and animal biological diversity, enhances a good seedbed for pine regeneration, improves the quality and diversity of groundcover, and controls hardwoods in cluster zones.

Increasing and maintaining prescribed fire frequency and seasonality in the flatwoods is essential to maintain healthy flatwoods on THSF. Burning in the flatwoods is important to many different species, including RCWs. There are areas where flatwoods are being lost to successional hardwood hammocks. Hardwood succession could negatively affect sustainable timber management into the future, as well as many different flatwoods wildlife species.

At this point, dormant season fires are likely to comprise the majority of prescribed fire at THSF, though a shift to more growing season burning should occur as conditions allow. In areas where duff has accumulated in the absence of prescribed fire, burning should occur under conditions where chances of total duff consumption and subsequent overstory mortality are minimized. Until fuel loadings have decreased and duff has been reduced, maintaining the frequency of fire, regardless of season, should be viewed as a priority.

Objective 18: Maintain a prescribed burning program in RCW clusters and foraging areas on at least a two to three-year fire return interval in the flatwoods. Burn planning should account for the number of clusters burned as well as total acreage. One-fourth to one-third of all RCW cluster zones should be burned annually. Given the variability of weather conditions and staffing levels, success in achieving these objectives should be measured through trends in a long-term data set of prescribed fire. [THSF, TFC, and FWC]

Objective 19: The prescribed burning database will be maintained indefinitely. The database will show the date and location of all prescribed burns and updated cluster mapping. [THSF]

Objective 20: Use mechanical and/or chemical treatment in cluster and foraging zones where needed to establish or facilitate midstory control with fire. [THSF and FWC]

### **Non-Native Invasive Plant Species**

Objective 21: Non-native, invasive species threaten the integrity of the pine ecosystem that supports RCWs on THSF. Infestations near RCW clusters will be given the highest priority for control treatment and monitoring. Infestations of Japanese climbing fern (*Lygodium japonicum*) and cogongrass (*Imperata cylindrica*) threaten all of THSF and should also be given the highest priority. [THSF and FWC]

Objective 22: The practice of planting non-native, invasive species in wildlife food plots and in blocking closed roads will be discontinued in RCW clusters and foraging zones. Control efforts should be focused on locations where these plantings exist in current RCW clusters and foraging zones and are spreading into native habitat. [THSF and FWC]

Objective 23: Avoid the clearing and placement of wildlife food plots in RCW cluster and foraging zones, especially where high-quality groundcover exists. [THSF and FWC]

### **Foraging Habitat Maintenance**

Over the years, qualitative observations by a number of RCW experts and THSF staff, in addition to data collected, suggest that THSF, with its vast pine flatwoods, relatively high levels of biodiversity, and its continued commitment to restoration, is capable of many acres of high quality habitat that should easily be able to support and maintain a viable RCW population and good quality foraging habitat over the long-term as restoration continues to improve conditions.

Further observations suggest that RCWs fledge young and undergo natural population growth at levels of overstory foraging characteristics that may be outside of RCW Recovery Plan guidelines.

The RCW Recovery Plan (USFWS 2003) provides that managers may formulate population-specific guidelines in consultation with the USFWS. These guidelines must be based on sound science using multiple years of RCW data and its relationship to quantity and quality of foraging habitat. The resulting site-specific guidelines must still meet or exceed recommendations concerning herbaceous groundcover, hardwood midstory, canopy hardwoods, and distance from the cluster center. They can vary from existing guidelines for pine basal area, age, size class distribution and stem density.

Between the two sets of guidelines described in the Recovery Plan, the Recovery Standard (See Appendix A2) is considered more applicable to THSF in the long term than the Managed Stability Standard (See Appendix A3). The Managed Stability Standard is designed for private landowners and, if followed, will not result in the need for incidental take permits. However, the Managed Stability Standard is not designed to increase population size and its wide-spread application may result in population fragmentation and subsequent demographic problems, may not provide future nesting or good quality foraging habitat, and/or maintain the population's long-term viability. The Managed Stability Standard is not a long-term goal of this plan because it may not result in recovery of the THSF RCW population or the Central Florida Panhandle Primary Core population. The intent of the FFS, recognizing the habitat conditions and history of RCWs at THSF, is to develop an approach to RCW foraging habitat at THSF that will most likely lie somewhere between these two existing standards. However, until THSF-specific foraging guidelines are developed and approved by the USFWS, the FFS will, at a minimum, ensure that all silvicultural activities result in residual foraging conditions that meet or exceed the Managed Stability Standard, while striving to achieve foraging conditions described by the Recovery Standard over the long-term recovery of the species.

Objective 24: Initiate an analysis of foraging habitat partition data into appropriate size classes and provide this data to ongoing USFWS region-wide efforts to study RCW foraging data and revise foraging habitat guidelines. [THSF, FWC, and State Lands Section]

Objective 25: Collect groundcover data that can be used in foraging zone analyses as part of ongoing forest inventory. If the data collected during forest inventory is insufficient, collect additional groundcover data (as necessary) to increase the utility of the existing foraging zone assessment in achieving objective 24. [THSF, FWC, and State Lands Section]

Objective 26: Identify, or allow to develop, a minimum of 150 acres of good quality foraging habitat (USFWS 2003) for each active cluster. This may warrant revision pending any approved modified foraging guidelines for THSF by the USFWS. In the interim, ensure that all facets of the

minimum Managed Stability Standard are met or exceeded while striving to meet or exceed habitat characteristics described in the Recovery Standard. [THSF and FWC]

Objective 27: Maintain open foraging habitat to promote RCW population growth, prevent decline, minimize RCW predation, and promote stand health by following Managed Stability Standard timber guidelines (at a minimum) from the RCW Recovery Plan until THSF foraging guidelines have been developed, if applicable. Should the need arise to achieve specific silvicultural or RCW management objectives by thinning to basal areas or densities below these guidelines, a brief stand-specific plan will be developed by THSF and FWC staff and approved by the Forest Management Bureau. This plan may be shared as a courtesy to the USFWS. If the plan is implemented, cluster activity and fledgling production of the affected clusters must be monitored in detail and the results reported to the Forest Ecologist and Forest Management Chief, who will then inform the USFWS of these results. [THSF, FWC, and FM]

Objective 28: Use prescribed fire, especially during the April to July timeframe whenever possible, as the preferred method to control the height and density of midstory hardwoods, and to promote the vigor of native groundcover. Fire pretreatments, such as overstory thinning of pines and hardwoods, and timber stand improvement (mechanical or chemical midstory control) should be used when necessary and feasible. [TFC and THSF]

### **Timber Management Guidelines**

A sustainable timber program must be maintained at THSF in order to promote forest health and maintain the revenue necessary to continue FFS staffing and programs as described in the most recent approved THSF 10-Year Land Management Plan. Longleaf pine stands at THSF were harvested to near extirpation from the property prior to state ownership. Longleaf pine that naturally occurred on slightly higher "islands" surrounded by wetlands inaccessible to equipment often escaped harvest and comprise some of the trees anchoring RCW clusters today. After harvest, many stands were replaced with plantations (slash and loblolly pine) and thrived under the altered hydrological regime. When forest management began under state ownership in the late 1990's, conditions were far from ideal for RCWs; with an overstocked forest and intensive management history. And yet, RCWs persisted. With renewed effort on prescribed burning, harvesting overstocked stands, and restorative management, the pine flatwoods stands of THSF have continued to improve and support a more viable and robust RCW population (among other species).

Many practitioners would agree that managing timber in RCW habitat is difficult and requires a high degree of forestry and silvicultural expertise. The same may also be said of uneven-aged management in longleaf pine. Although this may be true, THSF has an educated skilled staff of foresters capable of achieving this task.



Objective 29: Develop THSF timber management guidelines that emphasize uneven-aged longleaf pine silviculture in RCW habitat and retention of some large, old trees suitable for natural RCW cavities based on guidelines in the State Forest Handbook. Use even-aged approaches where necessary, such as in restoration of off-site plantations and in developing existing longleaf pine plantations to the point where they can be managed with uneven-aged approaches. [TFC and FM]

Objective 30: THSF staff will continue to coordinate and communicate with FWC staff for the RCW program to ensure that silvicultural strategies and activities go forward while supporting RCW habitat improvement and sustainability. [THSF and FWC]

Objective 31: THSF staff will work with FWC staff for the RCW program to formulate thinning strategies consistent with foraging habitat guidelines from the Recovery Plan or from timber guidelines specific to THSF. [THSF and FWC]

Objective 32: Continue to favor longleaf pine as the preferred regeneration species on sites where it is native. [THSF]

### **Habitat Monitoring**

Objective 33: Conduct annual habitat monitoring activities in accordance with guidelines listed in the Recovery Plan. Integrate timber inventory data with RCW foraging data to avoid replication in data collection. [THSF and FWC]

### **Disaster Contingency Plan**

Objective 34: Implement the Disaster Contingency Plan (Appendix A4). Annually review and update the plan as necessary. Develop post-hurricane monitoring and damage assessment protocols, as well as approaches to clean up or rehabilitate cluster sites and install artificial cavities. Develop guidelines for timber salvage in cluster and foraging zones. Coordinate with BRSF where this type of catastrophe has previously occurred. [THSF and FWC]

### **Partnerships**

Objective 35: Continue to develop and utilize partnering relationships with other groups involved in RCW management including the FWC, USFWS, and volunteers. Maintain membership and coordination with SRTC. Cross-train and share resources with the other Florida state forests that manage RCW populations: Blackwater River, Goethe, Picayune Strand, and Withlacoochee State Forests. [TFC, FWC, and FM]

## REFERENCES

- Florida Fish and Wildlife Conservation Commission. 2012. Florida's Endangered and Threatened Species. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. 12 pp.
- Sullivan, J. D. 2004. Red-cockaded woodpecker surveying and management in atypical habitat, Tate's Hell Wildlife Management Area. Pages 542-548 in R. Costa, and S. J. Daniels editors. Red-cockaded woodpecker: road to recovery. Hancock House, Blaine, Washington, USA.

## ACRONYMS

|       |                                                    |
|-------|----------------------------------------------------|
| ANF   | Apalachicola National Forest                       |
| ARWEA | Apalachicola River Wildlife and Environmental Area |
| BA    | Basal Area                                         |
| BRSF  | Blackwater River State Forest                      |
| DBH   | Diameter at Breast Height                          |
| FM    | Forest Management                                  |
| FWC   | Florida Fish and Wildlife Conservation Commission  |
| GSF   | Goethe State Forest                                |
| PBG   | Potential Breeding Group                           |
| RCW   | Red Cockaded Woodpecker                            |
| SRTC  | Southern Range Translocation Cooperative           |
| TFC   | Tallahassee Forestry Center                        |
| THSF  | Tate's Hell State Forest                           |
| TSI   | Timber Stand Improvement                           |
| USFWS | United States Fish and Wildlife Service            |
| WSF   | Withlacoochee State Forest                         |

## APPENDICES

## **A1. RCW Cluster Zone Management**

The cluster, whether active or inactive, single or multiple tree, is defined as the aggregate of cavity trees, plus at least a 200-foot zone around each tree. This means that the cluster boundary extends at least 200 feet out from each tree in the cluster. All small clusters should be enlarged to at least 10 acres in size such that the minimum size for a foraging zone is 10 acres. If boundaries are to be marked, they will be clearly delineated with a circular spot of white paint on the inside and a square spot on the outside of outer boundary trees.

The shape of the cluster boundary does not need to be circular but should conform to natural and man-made boundaries so that it includes high quality pine habitat and does not include wetlands, open fields, or pure hardwood stands. Cavity trees should be as near the center of the 200-foot zone as possible. All cavity trees will be marked with a white band and identified with a numeric tag. The following standards and guidelines will ensure that RCW clusters (including active, inactive and recruitment clusters unless otherwise specified) are not adversely affected by management activities:

- 1). Timber harvests, and other cutting or killing of trees is prohibited within active clusters during the nesting season (March 20 to July 15). Harvest within any managed cluster must protect or improve RCW habitat (e.g., thinning, SPB control, midstory removal). Thinning of pines should not reduce the BA to lower than 40 ft<sup>2</sup>/ac and should favor retaining larger trees. Any vegetation management in clusters should occur only after consultation with the Forestry Supervisor II.
- 2). Snags may not be removed unless they pose an imminent or immediate threat to public safety or an RCW cavity tree.
- 3). Relict old-growth, "cat-faced," or flat-topped pines shall not be removed from clusters.
- 4). Timber harvest, timber stand improvement, and activities using mechanized equipment such as reconstruction or maintenance of existing roads, power lines, or pipelines through clusters is allowed only if the activities occur outside the nesting season. Minimal activities along open roads, such as mowing or road grading, may be allowed during the nesting season.
- 5). The development of new concentrated equipment or human use areas such as logging decks, skidder trails, off-road vehicles staging area and trails, game food plots, quail cover plots, oil and gas drilling pads and staging areas, and trail heads is prohibited within clusters.



- 6). Construction of linear rights-of-way such as roads, power lines, turnout ditches, or power lines is prohibited in clusters.
- 7). Cutting of cavity trees (living or dead) in clusters is prohibited unless they pose an imminent or immediate threat to public safety, or to protect the cluster from insect attack. The USFWS and the FWC must be notified and will issue a concurrence before any cavity tree may be cut.
- 8). Hardwood stems within clusters will be controlled through the Timber Stand Improvement (TSI) program. This treatment should be applied to a minimum of 10 acres around the cluster and configured to minimize effects on key riparian areas. The goal of TSI is not to kill all hardwoods, but to reduce their height so that they can be maintained at lower heights by controlled burning. Pines may also be cut as part of the TSI process if they hinder or block the open aerial pathway to a cavity tree. Controlling hardwood and pine midstory will discourage cluster abandonment and competition for cavities from such species as flying squirrels.
- 9). Firelines shall be no closer than 200 feet from a cavity trees unless an extreme emergency dictates the need to plow lines closer. Such fire lines should be rehabilitated within 6 months if the biologist or Forestry Supervisor II renders it beneficial. Pre-suppression firelines may be constructed adjacent to private property in the event a cavity tree resides within 200 feet of the property boundary, so long as doing so poses no threat to the viability of that tree or trees.
- 10). Cluster zones should generally be excluded from salvage sales of dead or damaged trees. Salvage sales may occur in cluster zones if evaluation by the Forestry Supervisor II concludes that doing so will facilitate other cluster health.
- 11). Motorized equipment in the cluster is not permitted from March 20 to July 15 except on established roads, or for active fire suppression, mowing to protect cavity trees, or prescribed burning (ATV only).
- 12). The vegetation around the base of all active and inactive cavity trees will be cleared either by mowing (i.e., Brown Tree Cutter) or by hand no more than two months prior to any planned prescribed burning. The vegetation should be cut or cleared to a distance of at least 20 feet from the tree. Clearing should not be deep enough to remove the herbaceous/grassy understory vegetation or to damage tree roots. All shrubs and trees (with the exception of relicts) growing under or into the crown of the cavity tree should be removed. Active cavity trees will be backfired around in the cleared areas prior to a planned burn of the surrounding stand.

## **A2. Recovery Standard Foraging Habitat Guidelines**

The following is excerpted from the RCW Recovery Plan (USFWS 2003) guidelines for foraging habitat. The Plan should be consulted for more specific details and as the final word on these guidelines.

1. For sites of high productivity (site index of 60 or more for longleaf pine), each family group (cluster) of RCW should be provided with 120 acres of good quality foraging habitat as defined below. An exception is provided for group selection wherein a 200-acre foraging area can account for patches from which large trees have been removed in groups as part of uneven-aged management.
2. All foraging habitat should be within 0.5 mi of the center of the cluster; preferably, 50% or more should be within 0.25 mi of the cluster center.
3. Good quality foraging habitat consists of:
  - a. 18 or more stems/ac of pines that are  $\geq 60$  years in age and  $\geq 14$  in DBH. Minimum BA for these pines is 20 ft<sup>2</sup>/ac;
  - b. BA of pines 10-14 in DBH is between 0 and 40 ft<sup>2</sup>/ac;
  - c. BA of pine  $< 10$  in DBH is below 10 ft<sup>2</sup>/ac and below 20 stems/ac; and,
  - d. BA of all pines  $\geq 10$  in DBH is  $\geq 40$  ft<sup>2</sup>/ac. This means the minimum BA for categories (a) and (b) above is 40 ft<sup>2</sup>/ac.
  - e. Groundcover of native bunchgrass and/or other native, fire-tolerant, fire dependent herbs total  $\geq 40\%$  or more of ground and midstory plants and are dense enough to carry growing season fire at least once every 5 years.
  - f. No hardwood midstory exists, or if a hardwood midstory is present it is sparse and less than 7 ft in height.
  - g. Canopy hardwoods are absent or less than 10 percent of the number of canopy trees in longleaf forests and less than 30% of the number of canopy trees in loblolly and shortleaf forests. Xeric and sub-xeric oak inclusions that are naturally existing and likely to have been present prior to fire suppression may be retained but are not counted in the total area of foraging habitat.
  - h. Foraging habitat is not separated by more than 200 ft of non-foraging areas. Non-foraging areas include any predominantly hardwood forests, pine stands less than 30 years old, cleared land such as agricultural lands or recently clear-cut areas, paved roadways, utility rights-of-way, and bodies of water.

### **A3. Private Land Foraging Habitat Guidelines**

These guidelines are also referred to outside the Recovery Plan as "Managed Stability Standards". According to the Recovery Plan, private landowners have different responsibilities than do public land managers for endangered species under the Endangered Species Act. While private landowners are encouraged to follow general guidelines for RCW management, these specific guidelines are provided because it may be unreasonable to expect that private landowners manage their foraging habitat at the same level of quality at which public land managers are expected to manage their lands. Many populations on private land are managed for stability and maintain existing population size. The caveat provided by the Recovery Plan for these guidelines is that the stability of small populations cannot be attained without additional management, such as the use of artificial cavities and translocation, and that the standard for managed stability is not designed to increase population size nor is its implementation within a population adequate to maintain that population's viability over the long term. Its wide-scale implementation will result in population fragmentation with subsequent problems related to demographic stochasticity and perhaps genetic variability.

1. Provide each group of RCWs a minimum of 3000 square feet of pine basal area, including pines only 10 in DBH.
2. Provide the above pine basal area on a minimum of 75 acres.
3. Count only those pine stands in suitable habitat that, for this standard only, have each of the following characteristics:
  - a. Stands that are at least 30 years old and older.
  - b. An average pine basal area of pine  $\geq 10$  in DBH between 40 and 60 ft<sup>2</sup>/ac.
  - c. An average pine basal area of pine  $< 10$  in DBH less than 20 ft<sup>2</sup>/ac.
  - d. No hardwood midstory or if a hardwood midstory is present, it is sparse and less than 7 ft in height.
  - e. Total stand basal area, including overstory hardwoods, less than 80 ft<sup>2</sup>/ac.
  - f. Land counted as foraging habitat is recommended to be within 0.25 mi of the cluster and that any stand counted as foraging habitat is within 200 ft of another foraging stand or the cluster itself.
  - g. Frequent prescribed burning of foraging habitat, especially during the growing season, is strongly recommended. Development of herbaceous groundcovers facilitated prescribed burning and benefits RCWs.

#### **A4. Tate's Hell State Forest RCW Disaster Contingency Plan**

Elements of this plan are applicable to such disasters as hurricanes, tornados, and wildfires.

Maintain in Ecology Unit:

- List of partners with contacts and phone numbers.
- Pre-determined stock of supplies for emergency replacement of artificial cavities.

Coordination:

- Contact staff & partners for staff, equipment, and supplies: Ecology Unit, Road crew, Inmate section, BRSF, FWC, GSF, contractors.
- Develop an incident team with an Incident Commander, Safety Officer, Planning Chief, Food Unit Leader, RCW Recovery Operations Team including RCW site assessors, RCW cavity installers, GIS specialist.
- Determine who will provide specific personnel, equipment, supplies, and services.
- Discuss with and determine what salvage crews can collect, when, where, and how.

Assess damage to:

- Roads to active, recruitment and nearby inactive clusters.
- Cavity trees in active and recruitment clusters.
- Cluster Boundary markers.
- Look for dead RCWs in natural and artificial cavities, and on the ground in clusters.
- Communication equipment, power, water, utilities, and infrastructure.

Gather and acquire:

- Personnel - RCW-experienced staff, helpers, and laborers
- Equipment to clear access to clusters – chain saws, bull dozers, front end loaders, ATVs, etc.
- Supplies to replace inserts - artificial cavities, putty, spray paint, shims, pry bars, chisels, hammers, chain saws and gas mix, bar oil, extra chains, chain sharpener, PPE, Swedish ladders, ladder steps, climbing gear, aluminum nails, tree tag maker and aluminum tape, tree paint and paint brushes, cameras, batteries, GPS units, and DBH tapes.
- Communication equipment.
- Maps of clusters/trees prior to disaster & most recent cluster/tree inventories.
- A plan to minimize additional damage to trees – not driving in cluster especially over roots.



- List of clusters and pre-disaster status.

Prior to cavity Installation:

- Clear roads to clusters.
- Flag trees to put new cavities in with appropriately colored tape –pines at least 14" DBH preferably without injuries, forks, leaning boles or existing RCW starts. Establish new cluster boundaries around new trees with flags.
- Document cluster and cavity tree damage with photos.

**Tasks to be accomplished (in priority order):**

1. Phase 1                      Assessment of clusters & foraging habitat
  - a. Access and assess each cluster (in priority order)
    - i. Multiple bird active clusters
    - ii. Single bird active clusters
    - iii. Recruitment clusters
    - iv. Inactive clusters
  - b. Determine and record status of cavity trees
    - i. Broken, up-rooted, leaning and degree of lean
    - ii. Tree dimension
    - iii. Characteristics of cluster zone
  - c. Re-mark boundaries with pink flagging and potential cavity trees with flagging tape
  - d. Note any new cavities being started (starts)
  - e. Develop brief recovery prescription for cluster and foraging zones
2. Phase 2                      Assessment of birds (concurrent with Phase 1)
  - a. Assess and record status of birds
    - i. Conduct roost checks
    - ii. Determine leg bands for remaining birds
  - b. Determine status of foraging zones
3. Phase 3                      Cluster mitigation
  - a. Replace/augment clusters with artificial cavities
  - b. Conduct prescribed fire assessment for each cluster and foraging zone

Supplies to be stocked for hurricane season or other disasters:

- Artificial cavities – 30
- Putty – 30 quarts
- Shims – 1 case
- White spray paint – 10 cans

- White tree paint – 5 gallons
- Paint brushes, large medium small
- Aluminum tree nails – box of 50
- Tree tags
- Large permanent markers – 1 for each cavity installer
- 1 draw knife per cavity installer
- Sledge hammer, claw hammer, small chainsaw, chisel

Recommendation: Each FFS property with RCWs should keep 35 artificial cavities & the supplies to install them on hand from June 1<sup>st</sup> – November 30<sup>th</sup>.