

## Little-Big Econ State Forest (Seminole County)

### DEPRESSION MARSH AND RIVERINE SWAMP

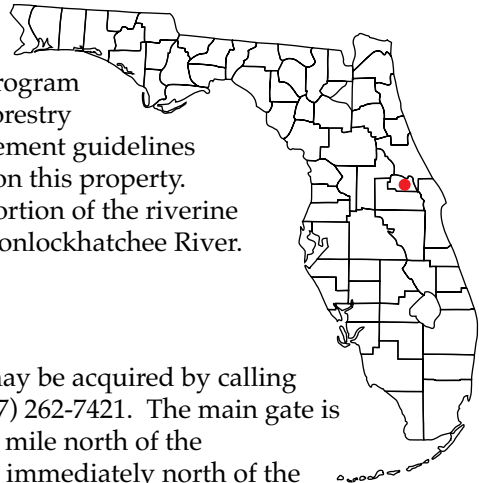


Econlockhatchee River floodplain wetland/ riverine swamp

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## LOCATION

The Little-Big Econ State Forest is located south of Geneva between C.R. 426 and C.R. 419 in Seminole County. The property is part of a cooperative program involving the St. Johns River Water Management District (SJRWMD), the state Conservation and Recreational Lands program (CARL), Seminole County, and the Division of Forestry (DOF). The DOF is currently developing management guidelines for the property. Two reference sites are located on this property. One site is an isolated marsh and the other is a portion of the riverine swamp contained within the floodplain of the Econlockhatchee River.



## ACCESS

Permits are required to enter this property and may be acquired by calling the SJRWMD at (407) 897- 4311 or the DOF at (407) 262-7421. The main gate is located on Snow Hill Rd. approximately one half mile north of the Econlockhatchee River. The marsh site is located immediately north of the main gate entrance on the west side of Snow Hill Rd. The river swamp site is on the

north side of the Econlockhatchee River also immediately west of Snow Hill Rd.

## COMMUNITY CHARACTERIZATION - DEPRESSION MARSH

The reference site is an isolated, depression marsh located in the northern portion of the property, close to the main entrance. A depression marsh wetland is generally a small rounded depression in a sand substrate with vegetation growing in distinct bands reflective of the hydroperiod and water depth. These open, bowl shaped wetlands are subject to both very wet and very dry conditions. Although it is likely that this site was originally situated within a pine flatwoods, the surrounding area has been converted to improved pasture. The outer edge of the marsh has been severely impacted by the associated activities including disking and seeding with pasture grass. Both the vegetative community and the upper portion of the soil profile reflect this disturbance. Although the upper portion of the soil profile has been mixed, the soil still retains hydric indicators. The combination of disking and the introduction of *Paspalum notatum* (bahia grass) has altered the vegetative dominance of the landward most zone of the marsh.

## DELINEATION PROCEDURE - DEPRESSION MARSH

An initial inspection of the depression marsh establishes that the area is a wetland by direct application of the wetland definition. As would be expected from the location of the reference site within a pasture, the influence of pasture grasses on the vegetative dominance of the landward zone of the marsh is quickly revealed. Although not placed on the vegetative index, bahia grass does display a strong tolerance for wetland conditions and is often observed as a dominant component in the ground cover of disturbed wetlands. This is also the situation for several other species of pasture grass including *Axonopus furcatus*, *A. affinis* and *A. compressus* (carpet grasses) and *Cynodon dactylon* (Bermuda grass). Because of the confounding effect on vegetative dominance elicited by the presence of pasture grasses growing in the wetland, subsections 62-340.300(2)(a) and (b), F.A.C., are not used in determining the wetland boundary at this reference site.

When vegetative dominance can not be used to locate the edge of the wetland, hydrologic indicators often provide the necessary data with which to make decisions. The center of the marsh contains a small clump of *Nyssa sylvatica* var. *biflora* (swamp tupelo) trees which provides a clear hydrologic indicator in the form of a distinct lichen line. Further, although the soils of the landward zone of the marsh were disturbed by the disking, hydric soil indicators are still evident. The combination of the clear hydrologic indicator and the presence of hydric soil indicators allow the application of subsection 62-340.300(d), F.A.C. In order to use the distinct lichen line as a hydrologic indicator, it is necessary to establish that it does not reflect either relict or atypical conditions (reasonable scientific judgment). At this site, there is no sign of significant drainage that would lead to an altered hydrologic regime. A laser level was used to record the elevation of the lichen line and to project this elevation onto the surrounding land. The elevation of the lichen line corresponds very well with the landward extent of existing hydric soil indicators. Because mechanical mixing of the upper soil profile typically obliterates many of the hydric soil indicators, the current extent of hydric soil is regarded

as a conservative approximation which further supports the legitimate use of the lichen line. Using subsection 62-340.300(2)(d), F.A.C., the wetland boundary is established where a combination of hydric soil indicators (> 70% organic coating) and hydrologic indicators (the elevation of a lichen line on a swamp tupelo from the center of the depression) are both present. The wetland boundary line is marked with concrete monuments.

If the hydrologic indicator had not been present, subsection 62-340.300(3), F.A.C., the altered site provision, would have applied. The altered site provision is only to be used when the primary parameters of soil, vegetation, and hydrologic indicators can not be used to establish an accurate wetland boundary.

### Vegetation Within the Marsh

(Observations recorded March 6, 1995)

(from the central area of the marsh)

#### Canopy/subcanopy

<i>Nyssa sylvatica</i> var. <i>biflora</i>	OBL	water tupelo
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#### Ground cover

<i>Bacopa</i> spp.	OBL	water-hyssop
<i>Centella asiatica</i>	FACW	coin wort
<i>Hydrocotyle</i> spp.	FACW	water pennywort
<i>Ludwigia repens</i>	OBL	ludwigia
<i>Micranthemum</i> spp.	OBL	baby tears
<i>Panicum repens</i>	FACW	torpedo grass
<i>Polygonum</i> spp.	OBL	smartweed
<i>Pontederia cordata</i>	OBL	pickerelweed
** <i>Scirpus</i> spp.	OBL	bulrush
<i>Utricularia</i> sp.	OBL	bladderwort

### Vegetation Immediately Waterward of the Wetland Boundary line

(Observations recorded March 6, 1995)

(from the landward zone of the marsh)

#### Ground cover

<i>Andropogon virginicus</i>	FAC	broomsedge
** <i>Axonopus furcatus</i>	FAC	big carpet grass
<i>Baccharis halimifolia</i>	FAC	salt bush
** <i>Paspalum notatum</i>	UPLAND	bahia grass
<i>Carex albolutescens</i>	FACW	sedge

<i>Circeum horridulum</i>	UPLAND	thistle
<i>Desmodium</i> sp.	UPLAND	beggar's lice
<i>Eleocharis vivipara</i>	OBL	hair grass
<i>Eragrostis</i> spp.	FAC	love grass
<i>Eupatorium capillifolium</i>	FAC	dog fennel
<i>Euthamia</i> sp.	FAC	bushy goldenrod
<i>Hedyotis uniflora</i> ( <i>Oldenlandia</i> )	FAC	bluets
<i>Hydrocotyle</i> spp.	FACW	water pennywort
<i>Juncus</i> spp.	OBL	rush
<i>Phyla nodiflora</i>	FAC	frog-fruit
<i>Myrica cerifera</i>	FAC	wax myrtle
<i>Panicum anceps</i>	FAC	panic grass
<i>Panicum dichotomum</i>	FACW	panic grass
<i>Panicum strigosum</i>	FAC	panic grass
<i>Paspalum urvillei</i>	FAC	vasey grass
<i>Rhynchospora fascicularis</i>	FACW	beak-rush
<i>Rhynchospora microcarpa</i>	OBL	beak-rush
<i>Sabal palmetto</i>	FAC	cabbage palm
<i>Scoparia dulcis</i>	FAC	sweet broom
<i>Scirpus</i> spp.	OBL	bulrush
<i>Scleria</i> spp.	FACW	bald-rush
<i>Sisyrinchium atlanticum</i>	FACW	eastern blue-eyed grass
<i>Solidago</i> spp.	UPLAND	goldenrod
<i>Sonchus</i> sp.	UPLAND	sow thistle

\*\* Designates species which are overwhelmingly dominant

Landward of the wetland boundary line the vegetation continues to be dominated by *Paspalum notatum* (bahia grass).

## COMMUNITY CHARACTERIZATION - RIVERINE SWAMP

The reference site is the wetland limits of the Econlockhatchee River floodplain along the north side of the river. The wetland area is characterized by a canopy composed of species tolerant of periods of surface water inundation. Inundation is most frequent during the peak of the summer rainy season. As with most floodplain forests, a gradual slope is present. The depth and duration of inundation for any typical flooding event is a factor of this slope. The upper most extent of the community experiences less inundation than the portion at lower elevations.

## DELINEATION PROCEDURES - RIVERINE SWAMP

The Econlockhatchee River is a surface water body identifiable by the use of section 62-430.600, F.A.C. Beginning at the river and moving landward, the vegetative dominance meets the provisions of subsections 62-340.300(2)(a) and (b), F.A.C., and is supported by the presence of hydric soil. Vegetative dominance continues landward to a point on the slope where the dominance of facultative wet species in the canopy rapidly gives way to the increasing influence of *Quercus virginiana* (live oak). Here, the provisions of subsection 62-340.300(2)(b), F.A.C., are no longer met in the canopy. The ground cover likewise changes, as *Serenoa repens* (saw palmetto) becomes a significant component. Hydric soil indicators also fall out where the canopy dominance changes from *Quercus laurifolia* (swamp laurel oak) to *Quercus virginiana* (live oak). The wetland boundary occurs at this break in communities.

Floodplains may or may not have hydric soil indicators because inundation does not always result in the creation of markers in the soil profile. It is important to note that the actual landward extent of some rivers may not be the limits of the associated wetlands, but rather are defined by the ordinary high water line. Please refer to section 62-340.600, F.A.C., in the main text of this document for further discussion of the ordinary high water line.

### Vegetation Immediately Waterward of the Wetland Boundary Line

#### Canopy

<i>Carpinus caroliniana</i>	FACW	ironwood
<i>Liquidambar styraciflua</i>	FACW	sweetgum
<i>Pinus elliotii</i>	UPLAND	slash pine
<i>Pinus serotina</i>	FACW	pond pine
<i>Quercus laurifolia</i>	FACW	swamp laurel oak
<i>Sabal palmetto</i>	FAC	swamp cabbage

#### Subcanopy

<i>Carpinus caroliniana</i>	FACW	ironwood
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**Ground cover**

<i>Axonopus furcatus</i>	FAC	big carpet grass
<i>Carex albolutescens</i>	FACW	sedge
<i>Centella asiatica</i>	FACW	coinwort
<i>Chasmanthium sessiliflorum</i>	FAC	spangle grass
<i>Hypericum hypericoides</i>	FAC	St. John's wort
<i>Hypoxis leptocarpa</i>	FACW	yellow star grass
<i>Mitchella repens</i>	UPLAND	partridge berry
<i>Oxalis</i> sp.	UPLAND	wood sorrel
<i>Panicum</i> sp.	FAC	panic grass

**Vegetation Immediately Landward of the Wetland Boundary Line****Canopy**

<i>Pinus elliotii</i>	UPLAND	slash pine
<i>Quercus virginiana</i>	UPLAND	live oak

**Subcanopy**

<i>Crataegus crus-galli</i>	UPLAND	hog-apple
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**Ground cover**

<i>Chasmanthium sessiliflorum</i>	FAC	spangle grass
<i>Erythrina herbacea</i>	UPLAND	coral bean
<i>Serenoa repens</i>	UPLAND	saw palmetto

**SOIL DESCRIPTIONS****Depression Marsh**

USDA-NRCS Soil Survey of Seminole County - Sheet 25

**The wetland is indicated by a wet spot symbol on the field sheet.**

**The upland soil is mapped as Myakka and EauGallie fine sand (mapping unit #20).**

**20 - Myakka and EauGallie fine sand** is composed of:

48% - Myakka soil	non-hydric component
22% - EauGallie soil	non-hydric component
10% - EauGallie soil	hydric inclusion
10% - Myakka soil	hydric inclusion
5% - Pompano soil	hydric inclusion
5% - Basinger soil	hydric inclusion

**Soil Profile Descriptions**

Point 1. twenty feet waterward of the wetland boundary line (water table - 20 inches).

<u>Horizon</u>	<u>Depth (in)</u>	
A1	0-1	black (10YR 2/1) mucky fine sand, many fine roots
A2	1-5	black (10YR 2/1) fine sand, common medium roots
AE	5-9	black (10YR 2/1) and dark gray (10YR 4/1) fine sand, few medium roots
E or C	9-12+	gray (10YR 5/1) fine sand, common mdium roots

**Hydric soil:** Yes

**Hydric soil field indicators:** greater than four inches of 70% or more coated sand grains.

Point 2. twenty feet landward of the wetland boundary line (water table - below 24 inches).

<u>Horizon</u>	<u>Depth (in)</u>	
A	0-5	very dark gray (10YR 3/1) and gray (10YR 6/1) fine sand, many fine roots
E or C	5-12+	gray (10YR 5/1) fine sand, few medium roots

**Hydric soil:** No

**Hydric soil field indicators:** none

**Riverine Swamp**

USDA-NRCS Soil Survey of Seminole County - Sheet 25

**The wetland soils are mapped as Pompano fine sand, occasionally flooded** (mapping unit #28) and **Basinger and Delray fine sands** (mapping unit #9).

**28 - Pompano fine sand, occasionally flooded** is composed of:

90% - Pompano soil	hydric component
10% - Nittaw soil	hydric inclusion

**9 - Basinger and Delray fine sands** is composed of:

60% - Basinger soil	hydric component
32% - Delray soil	hydric component
4% - Malabar soil	hydric inclusion
4% - Wabasso soil	non-hydric inclusion

**The upland soil is mapped as Myakka and EauGallie fine sand** (mapping unit #20).

**20 - Myakka and EauGallie fine sand** is composed of:

48% - Myakka soil	non-hydric component
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22% - EauGallie soil	non-hydric component
5% - Basinger soil	hydric inclusion
10% - EauGallie soil	hydric inclusion
10% - Myakka soil	hydric inclusion
5% - Pompano soil	hydric inclusion

### Soil Profile Descriptions

Point 1. twelve feet waterward of the wetland boundary line.

<u>Horizon</u>	<u>Depth (in)</u>	
A	0-1	very dark gray (10YR 3/1) fine sand with black (10YR 2/1) 1-2cm organic accretions, many fine roots
AE	1-6	very dark gray (10YR 3/1) fine sand with yellowish brown (10YR 5/6) oxidized rhizospheres in the lower part, common fine and few medium roots
B	6-10+	dark grayish brown (10YR 4/2) loamy fine sand with fine medium prominent yellowish brown (10YR 5/6) mottles, few fine roots

**Hydric soil:** Yes

**Hydric soil field indicators:** organic accretions in the A horizon, and oxidized rhizospheres in the AE horizon.



Point 1

Point 2. 45 feet landward of the wetland boundary line.

<u>Horizon</u>	<u>Depth (in)</u>	
A	0-7	very dark gray (10YR 3/1) very fine sand, many fine and few medium roots
C	7-12+	dark grayish brown (10YR 4/2) and brown (10YR 5/3) fine sand, few fine roots

**Hydric soil:** No

**Hydric soil field indicators:** none



Point 2

