

Peck Lake Park

(Martin County)

HARDWOOD SWAMP AND MANGROVE SWAMP



Tidally influenced Australian Pines

LOCATION

Peck Lake Park is adjacent to the Hobe Sound National Wildlife Refuge and north of Jupiter Island. The park is owned and maintained by Martin County. There is a boardwalk through the park from the parking area out to the Intracoastal Waterway. The boardwalk begins at the edge of the mesic flatwoods and passes through a hardwood swamp, a mangrove swamp, a brackish slough, and onto a spoil island. The spoil island was created during the dredging of the Atlantic Intracoastal Waterway. The boardwalk ends on the other side of the spoil island at the intracoastal waterway. There are two reference sites within the park. One of these is a freshwater swamp, the second is a mangrove forest adjacent to a spoil island. All the wetlands observed in the park have been hydrologically altered.



ACCESS

From U.S. Highway 1, about 8 miles south of Stuart, turn east on Osprey Street and cross A1A (Dixie Highway). Turn north (left) onto Gomez Avenue and look for the park

entrance within about 1/4 mile. Parking and facilities are available in the park and access is free. The reference sites are easily observable from the boardwalk.

COMMUNITY CHARACTERIZATION - HARDWOOD SWAMP

The freshwater swamp at this site is dominated by a canopy of *Ilex cassine* (dahoon holly) and *Persea palustris* (swamp bay). The forest is growing in an interdunal swale adjacent to a pine flatwoods. The ecotone between the pine flatwoods and hardwood swamp is narrow, occurring within a zone dominated by *Serenoa repens* (saw palmetto) immediately landward of the swamp. The interior of the swamp has a ground cover dominated by *Blechnum serrulatum* (swamp fern).

DELINEATION PROCEDURE - HARDWOOD SWAMP

The wetland boundary established for this reference site lies between a freshwater swamp (interdunal swale) and a pine flatwoods. Proceeding from within the freshwater swamp, a wetland identifiable by direct application of the wetland definition, the dominance of wetland vegetation is followed landward, examining either the presence of hydric soil indicators or the presence of hydrologic indicators (subsections 62-340.300(2)(a) and (b), F.A.C.). Vegetative dominance is established using subsection 62-340.300(2)(a), F.A.C., within the canopy of the hardwood swamp and continues up to the ecotone, where vegetative dominance is lost. Here, there is an abrupt change from the hydrophytic canopy and ground cover species of the hardwood swamp to saw palmetto dominance. Within this ecotone, hydrologic indicators are present in the form of more than two inches of mucky texture in the upper soil profile. Using subsection 62-340.300(2)(d), F.A.C., the wetland boundary extends a short distance into the saw palmetto thicket until the hydrologic indicators in the soil are no longer present. The exclusion of fire from the surrounding flatwoods has allowed fire intolerant hydrophytic species such as dahoon holly and *Gordonia lasianthus* (loblolly bay) to reach subcanopy tree size within the flatwoods landward of the wetland boundary.

The following plant lists, with corresponding soils descriptions, were prepared during the December 1994 visit to the reference site. The common plant species in the freshwater swamp and pine flatwoods are listed below. Descriptions and photographs of soil samples are included from each location.

Vegetation of the Freshwater Swamp, Immediately Waterward of the Wetland Boundary.

Canopy

<i>Gordonia lasianthus</i>	FACW	loblolly bay
<i>Ilex cassine</i>	OBL	dahoon holly
<i>Persea palustris</i>	OBL	swamp bay

Subcanopy

<i>Ilex cassine</i>	OBL	dahoon holly
---------------------	-----	--------------

Ground cover

<i>Blechnum serrulatum</i>	FACW	swamp fern
<i>Ilex cassine</i>	OBL	dahoon holly
<i>Myrica cerifera</i>	FAC	wax myrtle
<i>Persea palustris</i>	OBL	swamp bay
<i>Quercus laurifolia</i>	FACW	swamp laurel oak
<i>Serenoa repens</i>	UPLAND	saw palmetto
<i>Vitis rotundifolia</i>	VINE	grape

Vegetation of the Pine Flatwoods, Immediately Landward of the Wetland Boundary.**Canopy**

<i>Gordonia lasianthus</i>	FACW	loblolly bay
<i>Pinus elliottii</i> var. <i>densa</i>	UPLAND	south Florida slash pine
<i>Quercus virginiana</i>	UPLAND	live oak

Subcanopy

<i>Ilex cassine</i>	OBL	dahoon holly
<i>Myrica cerifera</i>	FAC	wax myrtle

Ground cover

<i>Befaria racemosa</i>	UPLAND	tar flower
<i>Ilex glabra</i>	UPLAND	gallberry
<i>Lyonia fruticosa</i>	UPLAND	fetterbush
<i>Pteridium aquilinum</i>	UPLAND	bracken fern
<i>Rhus copallina</i>	UPLAND	smooth sumac
<i>Serenoa repens</i>	UPLAND	saw palmetto
<i>Vitis rotundifolia</i>	VINE	grape

COMMUNITY CHARACTERIZATION - MANGROVE SWAMP

The mangrove community consists of a canopy composed of *Rhizophora mangle* (red mangrove), *Avicennia germinans* (black mangrove), *Laguncularia racemosa* (white mangrove), and the introduced *Schinus terebinthifolius* (Brazilian pepper). This is a hydrologically altered mangrove community as is evidenced by the spoil piles between the swamp and the Intracoastal Waterway. It might be best to consider this an overwash swamp that is frequently inundated by water from the Intracoastal Waterway. The spoil island adjacent to the mangrove swamp is naturalized with Brazilian pepper and *Casuarina litorea* (Australian pine).

DELINEATION PROCEDURE - MANGROVE SWAMP

The wetland boundary established for this reference site lies between a mangrove swamp and an Australian pine dominated spoil pile. Proceeding from within the mangrove swamp, a wetland identified by direct application of the wetland definition, the dominance of wetland vegetation is followed landward, examining either the presence of hydric soil indicators or the presence of hydrologic indicators (subsections 62-340.300(2)(a) and (b), F.A.C.). Supporting hydrologic indicators include pneumatophores from black mangrove and a well developed rack line. Within the canopy of the mangrove swamp, subsection 62-340.300(2)(a), F.A.C., is used up to the edge of the spoil pile where vegetative dominance by hydrophytic vegetation is no longer applicable. Proceeding past the canopy of mangroves, hydrologic indicators become the appropriate mechanism for establishing the wetland boundary (subsection 62-340.300(2)(d), F.A.C.). Pneumatophores are found beyond the rack lines, beneath the Australian pines. The soils of the spoil bank are disturbed, however hydric soil indicators have developed. Based on the hydrologic indicators and the use of reasonable scientific judgment, the wetland boundary is placed in the area where the pneumatophores end and the Australian pines begin to dominate the canopy.

The following plant lists, with corresponding soils descriptions, were prepared during the December 1994 visit to the reference site. The common plant species in the mangrove swamp and Australian pine dominated spoil pile are listed below. Descriptions and photographs of soil samples are included from each location.

Vegetation of the Mangrove swamp, Immediately Waterward of the Wetland Boundary.

Canopy

<i>Avicennia germinans</i>	OBL	mangrove, black
<i>Laguncularia racemosa</i>	OBL	mangrove, white
<i>Rhizophora mangle</i>	OBL	mangrove, red
<i>Schinus terebinthifolius</i>	FAC	pepper-tree, Brazilian
<i>Casuarina litorea</i>	UPLAND	Australian pine

Vegetation of the Australian Pine Dominated Spoil Pile, Immediately Landward of the Wetland Boundary.

Canopy

Casuarina litorea UPLAND Australian pine

Ground cover

Abrus precatorius UPLAND rosary pea
Cassia bicapsularis VINE climbing cassia
Habenaria odontopetala FACW rein orchid
Plumbago scandens UPLAND wild plumbago
Sabal palmetto FAC cabbage palm
Schinus terebinthifolius FAC Brazilian pepper

SOIL DESCRIPTIONS

Hardwood swamp.
 USDA - NRCS Martin County Soil Survey - Sheet 26

The wetland soil is mapped as Okeelanta muck (mapping unit #22).
The upland soil is mapped as Salerno sand (mapping unit #35).

22 - Okeelanta muck is composed of:

100% - Okeelanta soil hydric component

39 - Salerno sand is composed of:

70% - Salerno soil non-hydric component
 30% - Pineda soil hydric inclusion

Soil Profile Descriptions

Point 1. Six feet waterward of the wetland boundary line (water table - 12 inches).

Horizon	Depth (in)	
Oi	1-0	dark reddish brown (5YR 2.5/2) litter; small amount of muck and mucky fine sand in the lower part of the horizon; many medium and fine roots
A1	0-3	dark gray (10YR 4/1) fine sand, with black (10YR 2/1) organic accretions;
A2	3-7	very dark gray (10YR 3/1) fine sand, with few medium distinct gray (10YR 5/1) mottles; common medium roots
E or C	7-15+	gray (10YR 5/1) fine sand; few medium roots

Hydric soil: Yes

Hydric soil field indicators: presences of organic accretions in the A1 horizon.



Point 1: Hardwood swamp

Mangrove swamp

USDA - NRCS Martin County Soil Survey - Sheet 26

The wetland soil is mapped as Okeelanta Variant muck (mapping unit #50).

The upland soil is mapped as Quartzipsamments, 0 to 8 percent slope (mapping unit #39).

50 - Okeelanta Variant muck is composed of:

100% - Okeelanta Variant soil hydric component

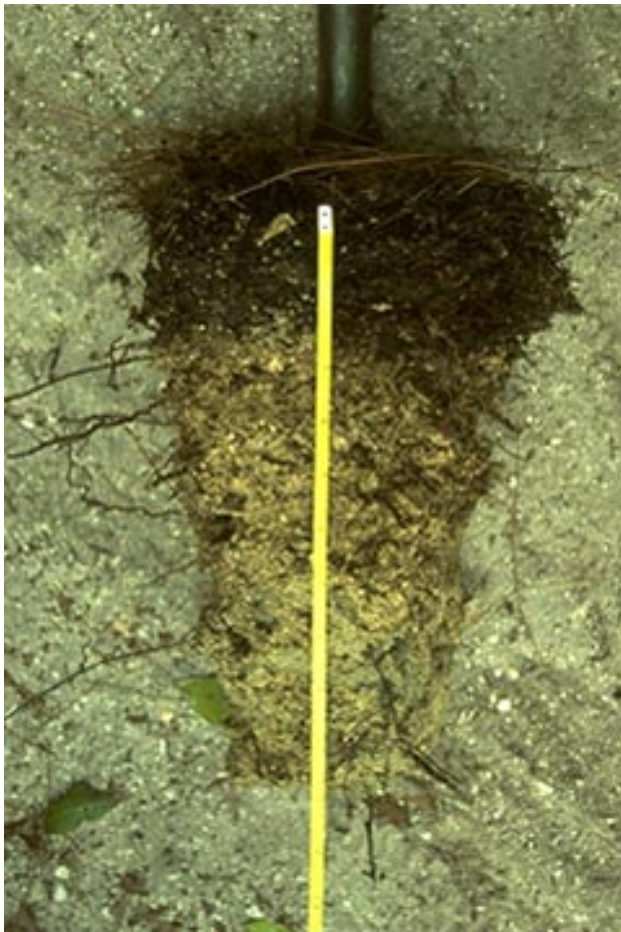
39 - Quartzipsamments, 0 to 8 percent slope is composed of:

5 to 20 feet thick deposits of mixed sand and shell materials

Soil Profile Descriptions

Point 1. Five feet waterward of the wetland boundary line (water table - 8 inches).

<u>Horizon</u>	<u>Depth (in)</u>	
Oi	3-0	black (10YR 2/1) litter; Australian pine needles
Oa	0-1	black (10YR 2/1) muck
C	1-9+	light gray (10YR 7/1) mixed sand and shell fragments; overburden materials from the dredging of the Intercoastal Waterway; few large, many medium and fine roots.



Hydric soil: Yes
Hydric soil field indicators:
 presence of 0.5 inches of muck in the Oa horizon.

Point 1: Hydric soil under Australian pine.

Point 2. Twenty feet waterward of the wetland boundary line (water table - 34 inches).

<u>Horizon</u>	<u>Depth (in)</u>	
Oi	3-0	black (5YR 2.5/2) litter; Australian pine needles
C	0-9+	light gray (10YR 7/2) mixed sand and few shell fragments; common fine and medium roots.

Hydric soil: No

Hydric soil field indicators: no hydric soil field indicators present.