Saint Marks National Wildlife Refuge

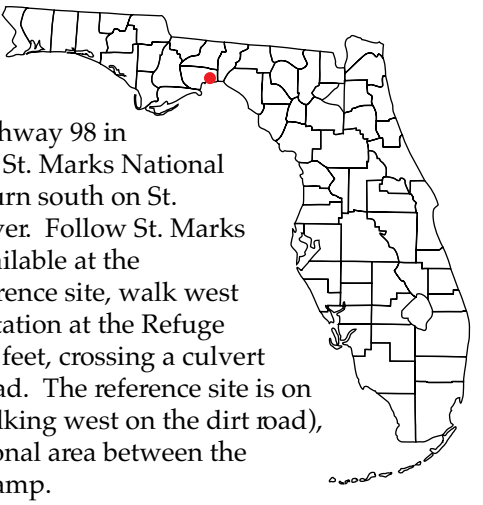
(Wakulla County)

STRAND SLOUGH

Hardwood strand

LOCATION

The St. Marks National Wildlife Refuge encompasses nearly all of coastal Wakulla and Jefferson Counties. The reference site is a hardwood strand swamp located just west of the Refuge headquarters in Wakulla County.



ACCESS

This reference site is easily reached from U.S. Highway 98 in the vicinity of the town of Newport. Signs for the St. Marks National Wildlife Refuge are conspicuous. From U.S. 98, turn south on St. Marks road, which is just east of the St. Marks River. Follow St. Marks road to the entrance of the Refuge. Parking is available at the headquarters near the entrance. To reach the reference site, walk west along the dirt road that is to the west of the pay station at the Refuge Headquarters. Continue west approximately 500 feet, crossing a culvert where a portion of the strand drains under the road. The reference site is on the west side of the strand swamp (on the left walking west on the dirt road), about 100 feet south of the grass road, in the ecotonal area between the flatwoods and the deep portion of the strand swamp.

COMMUNITY CHARACTERIZATION

A strand swamp is a shallow, forested, elongated, basin, dominated mostly by deciduous hardwoods such as *Acer rubrum* (red maple), *Nyssa sylvatica* var. *biflora* (swamp tupelo), and *Ulmus americana* var. *floridana* (Florida elm). Strand swamps form where there is a depression such that the downward flow of water generates a channel (Ewel *in* Ecosystems of Florida, 1991). At the reference site, the gradient from the surrounding pine flatwoods is gentle, even so, flowing water was observed in the deepest portion of this swamp. Moisture for the strand swamp is supplied by ground water and drainage from the surrounding poorly drained flatwoods. As with the cypress dome swamp and the bayhead, the largest trees are found in the interior of the strand swamp, where the peat soils are deepest and fire is least frequent. The wetland boundary is located at the landward edge of the ecotone between the strand swamp and the pine flatwoods. Fire is an important component in the maintenance of this plant community. Fire suppresses the hardwood trees typically associated with wetlands. The ecotone between the deep strand swamp and the pine flatwoods, although a wetland, is a creation of the limitation on the growth of hardwood hydrophytic vegetation caused by infrequent but periodic fire. As of May, 1995, fire suppression at the reference site has allowed tree species associated with the strand swamp to invade the *Pinus elliottii* (slash pine) and *Serenoa repens* (saw palmetto) dominated pine flatwoods.

DELINEATION PROCEDURE

The wetland boundary for this reference site lies at the landward edge of the ecotone between the strand swamp and the pine flatwoods. The strand swamp is dominated by red maple, swamp tupelo, *Magnolia virginiana* var. *australis* (sweetbay magnolia), and *Taxodium ascendens* (pond cypress). Beginning within the strand swamp, subsections 62-340.300(2)(a) and (b), F.A.C., are used to establish the wetland based upon the dominance of obligate and facultative wet vegetation and the presence of hydrologic indicators (*i.e.* elevated lichen lines and adventitious roots) and hydric soil indicators. Vegetative dominance extends landward into the fairly broad ecotone where it is lost. Hydrologic indicators (greater than 2 inches of mucky texture in the upper soil profile) and hydric soil indicators continue landward to the interface of the ecotone and the pine flatwoods. The wetland boundary is established where the soils have lost the organics necessary to support the hydrologic indicator. Some hydrophytic vegetation is found landward of the wetland boundary. This appears attributable to fire suppression.

The first list describes the vegetation found waterward of the wetland boundary. The second lists those species found landward of the wetland boundary. There are descriptions and photographs of soil samples from each location provided following the vegetation information.

Vegetation within the Wetland

Canopy

Acer rubrum	FACW	maple, red
Magnolia virginiana var. *australis*	OBL	magnolia, sweetbay
Nyssa sylvatica var. *biflora*	OBL	tupelo, swamp
Pinus elliottii	UPLAND	slash pine
Ulmus americana var. *floridana*	FACW	Florida elm
Taxodium ascendens	OBL	pond cypress

Subcanopy

Acer rubrum	FACW	maple, red
Magnolia virginiana var. *australis*	OBL	magnolia, sweetbay
Sabal palmetto	FAC	palm, cabbage
Ulmus americana var. *floridana*	FACW	Florida elm

Ground cover

Amphicarpum muhlenbergianum	FACW	blue maidencane
Campsis radicans	VINE	trumpet creeper
Carex spp.	FACW	sedges
Cladium jamaicense	OBL	sawgrass
Clematis crispa	UPLAND	leather flower
Hibiscus moscheutos	OBL	rosemallow, swamp
Hypericum hypericoides	FAC	St. Andrew's cross
Lycopus rubellus	OBL	bugleweed
Osmunda cinnamomea	FACW	fern, cinnamon
Osmunda regalis	OBL	fern, royal
Panicum dichotomum	FACW	panicum
Rhynchospora miliacea	OBL	beakrush, millet
Rhynchospora spp.	FACW	beakrush
Sabal palmetto	FAC	palm, cabbage
Sagittaria graminea	OBL	arrowhead
Saururus cernuus	OBL	lizard's tail
Smilax laurifolia	VINE	bamboo vine
Thelypteris spp.	FACW	shield fern
Toxicodendron radicans	UPLAND	poison ivy
Ulmus americana var. *floridana*	FACW	Florida elm

Vegetation Landward of the Wetland Boundary

Canopy

Pinus elliottii	UPLAND	slash pine

Subcanopy

Acer rubrum	FACW	maple, red
Pinus elliottii	UPLAND	slash pine

Ground cover

Acer rubrum	FACW	maple, red
Ampelopsis arborea	VINE	peppervine
Chasmanthium sessiliflorum	FAC	long-leaf Chasmanthium
Gaylussacia frondosa	FAC	dangleberry
Hypericum hypericoides	FAC	St. Andrew's cross
Hypericum microsepalum	UPLAND	St. John's-wort
Ilex cassine	OBL	holly, dahoon
Ilex glabra	UPLAND	gallberry
Lyonia ferruginea	UPLAND	fetter-bush
Myrica cerifera	FAC	bayberry, southern
Osmunda cinnamomea	FACW	fern, cinnamon
Parthenocissus quinquefolia	VINE	Virginia creeper
Pteridium aquilinum	UPLAND	bracken fern
Rhus copallina	UPLAND	winged sumac
Rubus spp.	FAC	blackberries
Serenoa repens	UPLAND	saw palmetto
Vitis aestivalis	VINE	summer grape

SOIL DESCRIPTIONS

USDA - NRCS Wakulla County - Sheet 22 Section 8
The wetland soil is mapped as Tooles-Nutall-Chaires fine sand (Mapping unit #29)
The upland soil is mapped as Chaires fine sand (Mapping unit #10)

29 - Tooles-Nutall-Chaires fine sand is composed of:

30% - Tooles soil	non-hydric component
25% - Nutall soil	hydric component
20% - Chaires soil	hydric component
10% - Chaires soil	non-hydric inclusion
5% - Nutall soil	non-hydric inclusion
10% - Tooles soil	hydric inclusion

10 - Chaires fine sand is composed of:

70% - Chaires soil	non-hydric component
25% - Chaires soil	hydric component
5% - Tooles soil	hydric component

Soil Profile Descriptions

Point 1. Ten feet waterward of wetland delineation line.

Horizon	Depth (in)	
Oe	2-0	very dark gray brown (10YR 3/2) peat or litter
Oa	0-5	black (10YR 2/1) muck with many fine roots
A	5-10	very dark gray (10YR 3/1) fine sand
E or C	10-18+	dark gray (10YR 4/1) fine sand

Hydric soil: Yes
Hydric soil field indicators: five inches of muck

Point 2a. One foot waterward of the wetland delineation line.

Horizon	Depth (in)	
Oe	1-0	black (5YR 2.5/1) peat or litter
A	0-3	black (N/0) mucky fine sand
E1 or C1	3-5	grayish brown (2.5Y 5/2) fine sand with dark gray (10YR 4/1) mottles
E2 or C2	5-24+	brown (10YR 5/3) fine sand with yellowish brown (10YR 5/4) mottles

Point 2a

Hydric soil: Yes
Hydric soil field indicators: greater than two inches of mucky texture

Point 2b. One foot landward of the wetland delineation line.

Horizon	Depth (in)	
Oe	1-0	black (5YR 2.5/1) peat or litter
A1	0-1	black (N/0) mucky fine sand
A2	1-5	black(10Y 2/1) fine sand
AE	5-9	black(10Y 2/1) fine sand with gray (10YR 6/1) mottles
E or C	9-29+	gray (10YR 6/1) fine sand

Hydric soil: No
Hydric soil field indicators: none

Point 2b

Point 3. Fifteen feet landward of the wetland delineation line.

Horizon	Depth (in)	
Oe	1-0	black (5YR 2.5/1) peat or litter
A	0-3	black (10Y 2/1) fine sand
E1	3-7	dark gray (10YR 4/1) fine sand
E2	7-20	light brownish gray (10YR 6/2) fine sand
Bh	20+	very dark gray brown (10YR 3/2) fine sand

Hydric soil: No
Hydric soil field indicators: none