

**Vegetation Monitoring at Four Northwest Florida Water  
Management District Mitigation Sites  
Fall 2016**

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**December 2016**

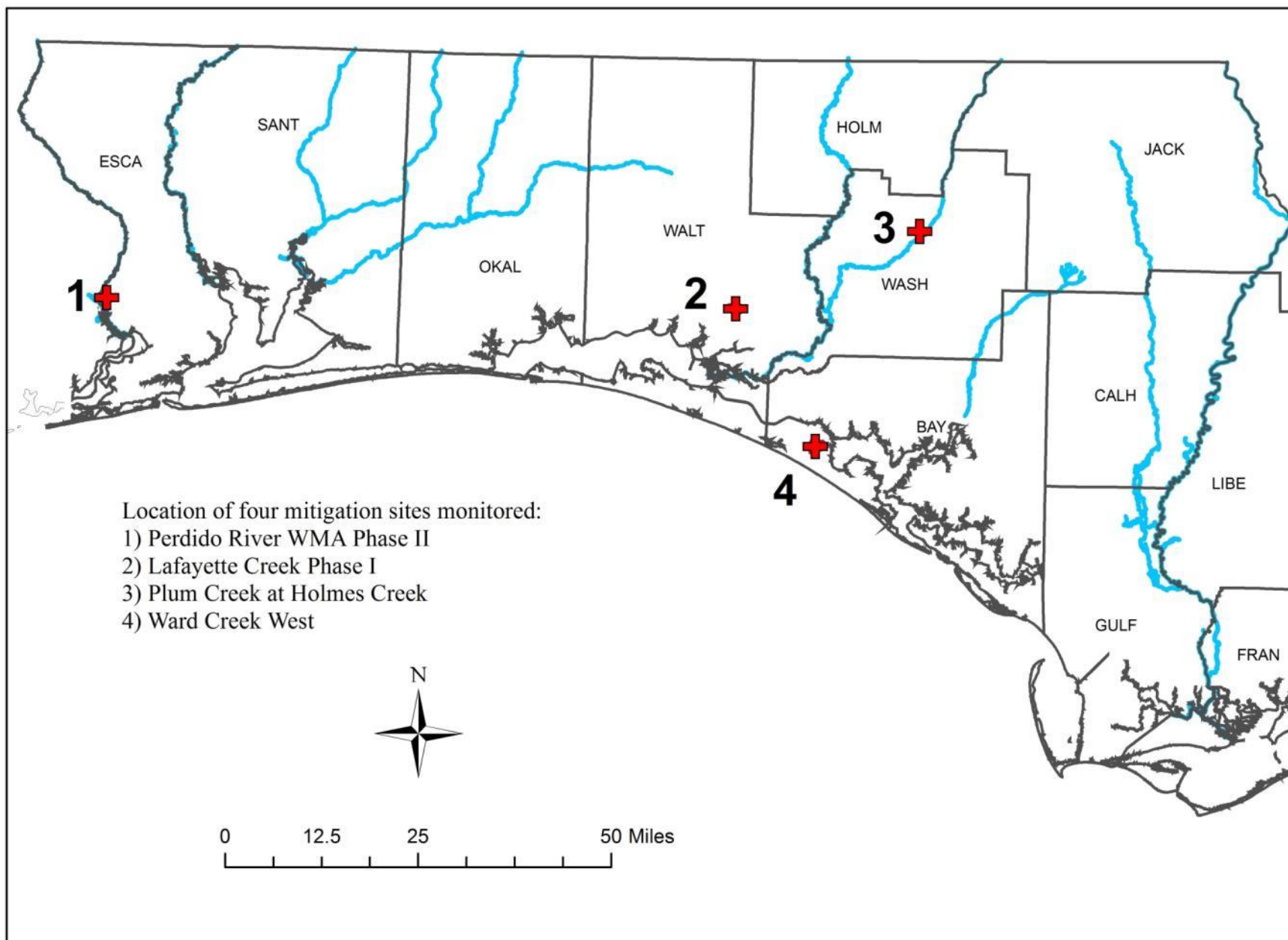
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This document contains separate qualitative and quantitative vegetation monitoring reports for four mitigation sites managed by the Northwest Florida Water Management District:

- 1) Perdido River Water Management Area – Phase II in Escambia County
- 2) Lafayette Creek – Phase I in Walton County
- 3) Plum Creek at Holmes Creek in Washington County
- 4) Ward Creek West in Bay County.

Except for the genus *Dichantheium*, taxonomy follows Wunderlin, R. P., B.F. Hanen, A.R. Franck, and F.B. Essig. 2016. Atlas of Florida Plants (<http://florida.plantatlas.usf.edu/>), Institute for Systematic Botany, University of South Florida, Tampa. *Dichantheium* follows the 2012 treatment by Freckman and Lelong in the Flora of North America (<http://herbarium.usu.edu/treatments/Dichantheium.htm#Dichantheium>).



**Plum Creek at Holmes Creek Mitigation Site**  
**Qualitative and Quantitative Monitoring**  
**December 2016**

**Plum Creek at Holmes Creek Mitigation Site  
Qualitative and Quantitative Monitoring  
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**INTRODUCTION**

The Plum Creek at Holmes Creek Mitigation Site compensates for the loss of wetland function due to the impact of the SR 79 Open Creek Bridge in Washington County, Florida. The 130-acre tract lies just north of Holmes Creek and is contiguous with other Northwest Florida Water Management District holdings along the creek. Access is by going south on SR 79 for 6.3 miles from I-10 to Johnson Road. Head east on Johnson Road to the gate on the south side of the winding road. The Plum Creek Mitigation project aims to restore sandhill (SA) from pine plantation and mixed forested wetlands (MFW) from a wetland impacted by a beaver pond (Figure PC-1). Quantitative and qualitative monitoring documented the current plant species composition and vegetation structure of the communities targeted for restoration as well as an intact mixed forested wetland community. The site vegetation was previously monitored by FNAI biologists during the fall from 2012 through 2015.

**METHODS**

The quantitative monitoring utilized 300-foot- long permanent transect lines previously marked during the 2012 survey. Two transects were located in the sandhill, one in the restoration mixed forested wetland, and one in preserved mixed forested wetland (Figure PC-1). In 2013, metal T-posts were installed at the ends of each transect to provide more permanent reference points. Data recorded consisted of the visually estimated percent cover of each plant species in fifteen 1-meter square quadrats. Tree trunks in quadrats were noted in comments but not recorded as cover; canopy over 2 m in height was also not recorded as cover in quadrats. Quadrats were located to the left of the transect line and placed 20 feet apart, starting at 0 feet and ending at 280 feet. The qualitative monitoring consisted of recording the species and vegetation structure observed along meandering pedestrian transects through each of these communities. The field surveys were performed by FNAI botanists Gary Schultz and Ann Johnson on October 19, 20, and 24, 2016.

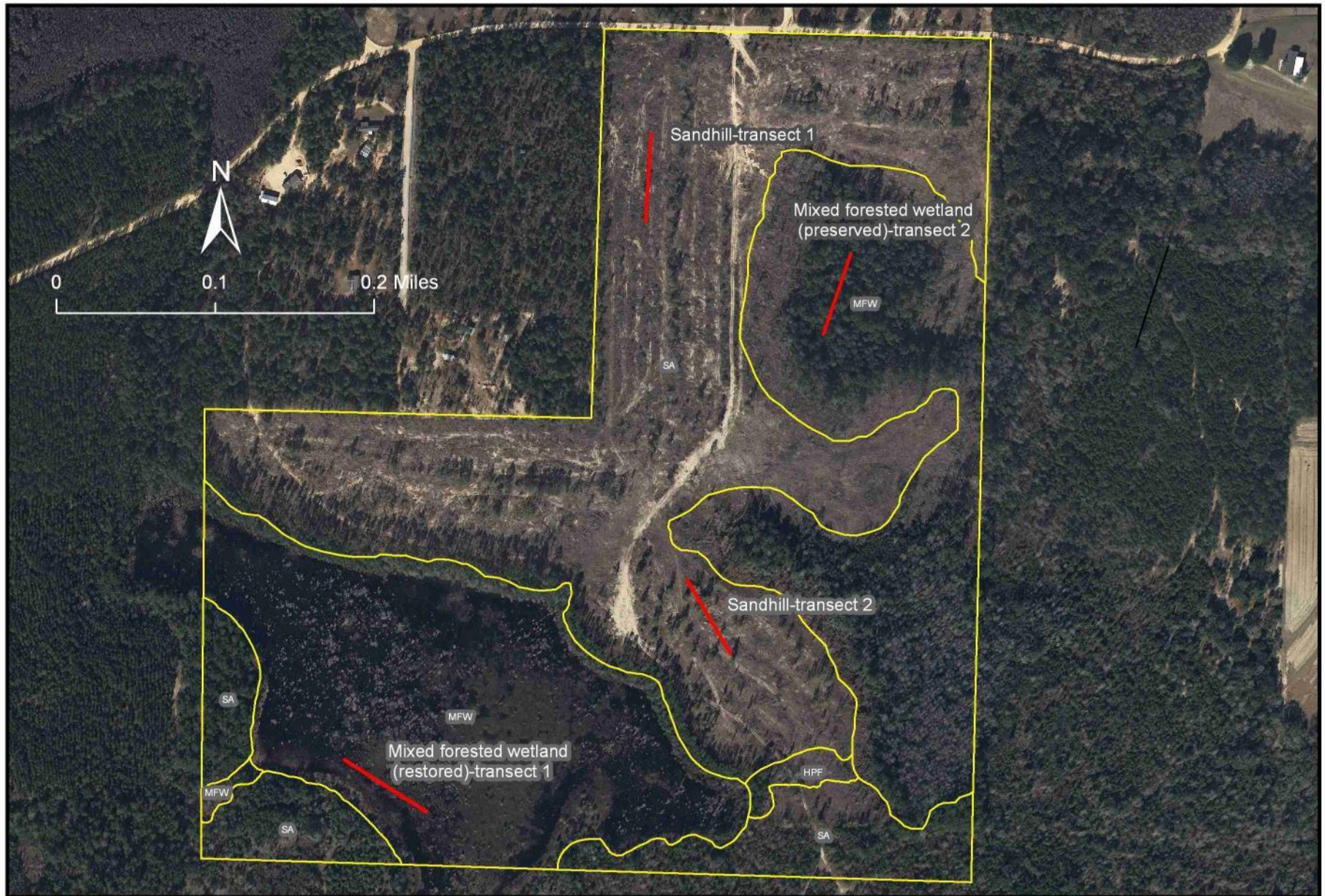


Figure PC-1. Location of permanent transects at Plum Creek at Holmes Creek Mitigation Site in Sandhill and Mixed Forested Wetland,

## RESULTS AND DISCUSSION

A total of 127 plant species were observed during the 2016 monitoring period in the target communities at Plum Creek at Holmes Creek Mitigation Site (Table PC-1).

Table PC-1. Plant species observed in target communities at Plum Creek at Holmes Creek Mitigation Site on October 19, 20 and 24, 2016.

Scientific Name	Common Name	Sandhill	Mixed Forested Wetland-Restoration	Mixed Forested Wetland-Preserved	Grand Total
<i>Acer rubrum</i>	red maple		X	X	2
<i>Agalinis fasciculata</i>	beach false foxglove	X			1
<i>Andropogon ternarius</i>	splitbeard bluestem	X			1
<i>Andropogon virginicus</i>	broomsedge bluestem	X			1
<i>Apteria aphylla</i>	nodding nixie			X	1
<i>Aristida purpurascens</i>	arrowfeather threeawn	X			1
<i>Aristida stricta var. beyrichiana</i>	wiregrass	X			1
<i>Asimina angustifolia</i>	slimleaf pawpaw	X			1
<i>Baccharis halimifolia</i>	groundsel tree	X			1
<i>Baptisia lanceolata</i>	gopherweed	X			1
<i>Berlandiera pumila</i>	soft greeneyes	X			1
<i>Bidens mitis</i>	smallfruit beggarticks		X		1
<i>Bulbostylis ciliatifolia</i>	capillary hairsedge	X			1
<i>Callicarpa americana</i>	American beautyberry	X			1
<i>Carex striata</i>	Walter's sedge			X	1
<i>Chrysoma pauciflosculosa</i>	woody goldenrod	X			1
<i>Chrysopsis lanuginosa</i>	Lynn Haven goldenaster	X			1
<i>Clethra alnifolia</i>	sweet pepperbush			X	1
<i>Cliftonia monophylla</i>	black titi			X	1
<i>Cnidocolus stimulosus</i>	tread softly	X			1
<i>Conyza canadensis</i>	Canadian horseweed	X			1
<i>Croptilon divaricatum</i>	slender scratchdaisy	X			1
<i>Cyperus retrorsus</i>	pinebarren flatsedge	X			1
<i>Dalea pinnata</i>	summer farewell	X			1
<i>Decodon verticillatus</i>	willow herb		X		1
<i>Dichantherium aciculare</i>	needleleaf witchgrass	X			1
<i>Dichantherium acuminatum</i>	tapered witchgrass	X			1
<i>Dichantherium commutatum</i>	variable witchgrass	X			1
<i>Dichantherium ovale</i>	eggleaf witchgrass	X			1
<i>Dichantherium sp.</i>	witchgrass	X			1
<i>Dulichium arundinaceum</i>	threeway sedge		X		1

Scientific Name	Common Name	Sandhill	Mixed Forested Wetland- Restoration	Mixed Forested Wetland- Preserved	Grand Total
<i>Eleocharis equisetoides</i>	jointed spikerush		X		1
<i>Elephantopus elatus</i>	tall elephantsfoot	X			1
<i>Eragrostis spectabilis</i>	purple lovegrass	X			1
<i>Eriogonum tomentosum</i>	dogtongue wild buckwheat	X			1
<i>Eupatorium compositifolium</i>	yankeeweed	X			1
<i>Eupatorium mohrii</i>	Mohr's thoroughwort	X			1
<i>Euphorbia floridana</i>	greater Florida spurge	X			1
<i>Euthamia caroliniana</i>	slender flattop goldenrod	X			1
<i>Galactia minor</i>	leafy milkpea	X			1
<i>Galium hispidulum</i>	coastal bedstraw	X			1
<i>Gelsemium sempervirens</i>	yellow jessamine	X			1
<i>Hibiscus aculeatus</i>	comfortroot	X			1
<i>Houstonia procumbens</i>	roundleaf bluet	X			1
<i>Hypericum brachyphyllum</i>	coastalplain St. John's wort		X		1
<i>Hypericum gentianoides</i>	orangegrass	X			1
<i>Hypericum hypericoides</i>	St. Andrew's cross	X			1
<i>Hypericum tetrapetalum</i>	fourpetal St. John's wort	X			1
<i>Ilex coriacea</i>	large gallberry			X	1
<i>Ilex opaca</i>	American holly	X			1
<i>Ilex vomitoria</i>	yaupon	X			1
<i>Juncus canadensis</i>	Canadian rush		X		1
<i>Lachnanthes caroliniana</i>	Carolina redroot		X		1
<i>Leucothoe racemosa</i>	swamp doghobble			X	1
<i>Liatris elegans</i>	pinkscale gayfeather	X			1
<i>Liatris gracilis</i>	slender gayfeather	X			1
<i>Liatris pauciflora var. secunda</i>	Piedmont gayfeather	X			1
<i>Liatris spicata</i>	dense gayfeather	X			1
<i>Licania michauxii</i>	gopher apple	X			1
<i>Liquidambar styraciflua</i>	sweetgum			X	1
<i>Ludwigia suffruticosa</i>	shrubby primrosewillow		X		1
<i>Ludwigia virgata</i>	savannah primrosewillow	X			1
<i>Lycopus rubellus</i>	taperleaf waterhorehound		X		1
<i>Lyonia lucida</i>	fetterbush			X	1
<i>Magnolia virginiana</i>	sweetbay		X	X	2
<i>Myrica cerifera</i>	wax myrtle			X	1
<i>Nymphaea odorata</i>	white waterlily		X		1
<i>Nymphoides cordata</i>	little floatingheart		X		1
<i>Nyssa sylvatica var. biflora</i>	swamp tupelo		X	X	2
<i>Osmanthus americanus</i>	wild olive	X		X	2



Scientific Name	Common Name	Sandhill	Mixed Forested Wetland-Restoration	Mixed Forested Wetland-Preserved	Grand Total
<i>Osmunda cinnamomea</i>	cinnamon fern			X	1
<i>Panicum hemitomom</i>	maidencane		X		1
<i>Paronychia patula</i>	pineland nailwort	X			1
<i>Persea palustris</i>	swamp bay			X	1
<i>Pinus clausa</i>	sand pine	X			1
<i>Pinus elliottii</i>	slash pine	X	X	X	3
<i>Pinus palustris</i>	longleaf pine	X			1
<i>Pityopsis aspera</i>	pineland silkgrass	X			1
<i>Pityopsis graminifolia</i>	narrowleaf silkgrass	X			1
<i>Polygala nana</i>	candyroot	X			1
<i>Polygonella gracilis</i>	tall jointweed	X			1
<i>Polypremum procumbens</i>	rustweed	X			1
<i>Pseudognaphalium obtusifolium</i>	sweet everlasting	X			1
<i>Pteridium aquilinum</i>	bracken fern	X			1
<i>Quercus falcata</i>	southern red oak	X			1
<i>Quercus hemisphaerica</i>	laurel oak	X			1
<i>Quercus laevis</i>	turkey oak	X			1
<i>Quercus margarettae</i>	sand post oak	X			1
<i>Quercus myrtifolia</i>	myrtle oak	X			1
<i>Rhexia mariana</i>	pale meadowbeauty	X			1
<i>Rhododendron canescens</i>	mountain azalea			X	1
<i>Rhynchosia cytisoides</i>	royal snoutbean	X			1
<i>Rhynchosia reniformis</i>	dollarleaf	X			1
<i>Rhynchospora chalarocephala</i>	loosehead beaksedge		X	X	2
<i>Rhynchospora nitens</i>	shortbeak beaksedge		X		1
<i>Rhynchospora sp.</i>	beaksedge		X		1
<i>Rubus cuneifolius</i>	sand blackberry	X			1
<i>Saccharum giganteum</i>	sugarcane plumegrass		X		1
<i>Schizachyrium scoparium</i>	little bluestem	X			1
<i>Scleria ciliata</i>	fringed nutrush	X			1
<i>Serenoa repens</i>	saw palmetto	X			1
<i>Sericocarpus tortifolius</i>	whitetop aster	X			1
<i>Smilax auriculata</i>	earleaf greenbrier	X			1
<i>Smilax bona-nox</i>	saw greenbrier	X			1
<i>Smilax glauca</i>	cat greenbrier	X			1
<i>Smilax laurifolia</i>	laurel greenbrier			X	1
<i>Smilax pumila</i>	sarsaparilla vine	X			1
<i>Solidago fistulosa</i>	pinebarren goldenrod	X			1
<i>Solidago odora</i>	sweet goldenrod	X			1

Scientific Name	Common Name	Sandhill	Mixed Forested Wetland-Restoration	Mixed Forested Wetland-Preserved	Grand Total
<i>Solidago</i> sp.	goldenrod	X			1
<i>Sphagnum</i> sp.	sphagnum moss			X	1
<i>Stylisma patens</i>	coastalplain dawnflower	X			1
<i>Symphotrichum dumosum</i>	rice button aster	X			1
<i>Taxodium distichum</i>	bald cypress		X		1
<i>Triadenum virginicum</i>	Virginia marsh St. John's		X		1
<i>Trichostema dichotomum</i>	forked bluecurls	X			1
unknown graminoid	unknown graminoid		X		1
<i>Utricularia foliosa</i>	leafy bladderwort		X		1
<i>Vaccinium arboreum</i>	sparkleberry	X			1
<i>Vaccinium corymbosum</i>	highbush blueberry			X	1
<i>Vaccinium</i> sp.	blueberry			X	1
<i>Vaccinium stamineum</i>	deerberry	X			1
<i>Viburnum nudum</i>	possumhaw			X	1
<i>Vitis rotundifolia</i>	muscadine	X		X	2
<i>Woodwardia areolata</i>	netted chain fern			X	1
<i>Woodwardia virginica</i>	Virginia chain fern		X		1
<i>Xyris fimbriata</i>	fringed yellow-eyed grass		X		1
<b>Total number of species: 127</b>		84	26	25	135

## Sandhill

**Qualitative sampling.** The sandhill natural community has been degraded by past silviculture activities but retains many characteristic species. Young planted longleaf pines were spaced over the hillside. The diverse but somewhat sparse groundcover included wiregrass, broomsedge bluestem, little bluestem, and needleleaf witchgrass. The occasional shrubs were mainly yaupon, turkey oak, sparkleberry, and sand blackberry. The earleaf greenbriar vine was common. A total of 84 plant species were identified in this community (Table PC-1).

**Quantitative sampling.** The northern Transect 1 (Table PC-2, Figure PC-2) was located midslope on an east-facing hill. It had a total of 45 species with 28% bare ground. Broomsedge bluestem had the the highest percent cover was by followed by orangegrass, Lynn Haven goldenaster, and wiregrass. The shrub yaupon and the herbs yankeeweed and tapered witchgrass had the next highest covers. The southern Transect 2 (Table PC-3, Figure PC-3) was situated near the top of a low ridge. It had a total of 36 species with 39% bare ground. The herb rustweed had the highest cover followed by the shrubby saw palmetto and saplings of longleaf pine. The herbaceous orangegrass, needle witchgrass, and Lynn Haven goldenaster had the next highest percentages.

Figure PC-2. Percent cover of plant species in Sandhill Transect 1.

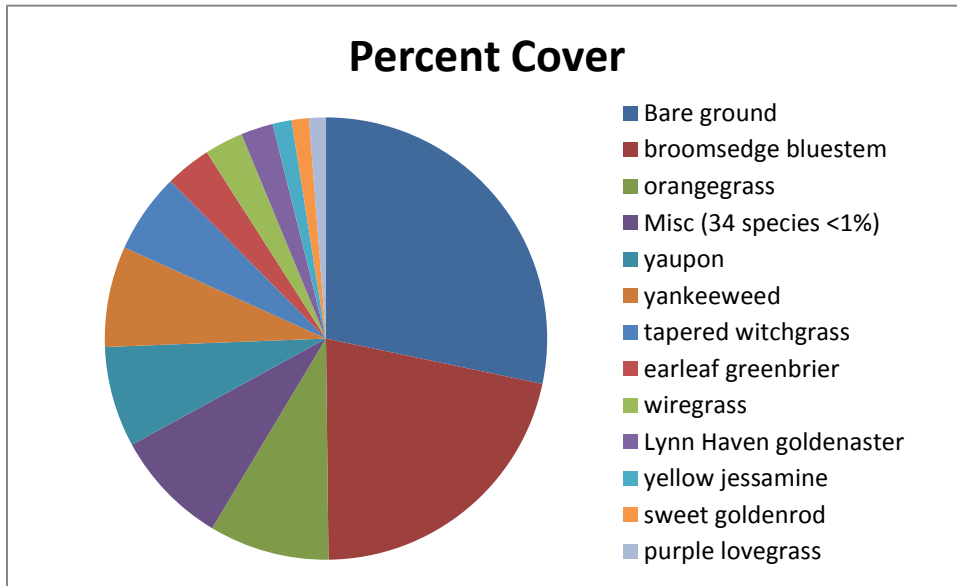


Table PC-2. Percent cover of plant species in Sandhill Transect 1 when sampled on October 24, 2016.

Scientific name	Common name	Average percent cover per quadrat
<i>Andropogon virginicus</i>	broomsedge bluestem	21.63
<i>Hypericum gentianoides</i>	orangegrass	8.83
<i>Ilex vomitoria</i>	yaupon	7.40
<i>Eupatorium compositifolium</i>	yankeeweed	7.40
<i>Dichantherium acuminatum</i>	tapered witchgrass	5.87
<i>Smilax auriculata</i>	earleaf greenbrier	3.37
<i>Aristida stricta</i> var. <i>beyrichiana</i>	wiregrass	2.83
<i>Chrysopsis lanuginosa</i>	Lynn Haven goldenaster	2.37
<i>Gelsemium sempervirens</i>	yellow jessamine	1.40
<i>Solidago odora</i>	sweet goldenrod	1.27
<i>Eragrostis spectabilis</i>	purple lovegrass	1.23
<i>Vaccinium stamineum</i>	deerberry	0.77
<i>Galactia minor</i>	leafy milkpea	0.73
<i>Dalea pinnata</i>	summer farewell	0.60
<i>Pteridium aquilinum</i>	bracken fern	0.57
<i>Dichantherium commutatum</i>	variable witchgrass	0.57
<i>Pinus palustris</i>	longleaf pine	0.50
<i>Dichantherium ovale</i>	eggleaf witchgrass	0.50
<i>Smilax glauca</i>	cat greenbrier	0.43
<i>Polypremum procumbens</i>	rustweed	0.33
<i>Hypericum hypericoides</i>	St. Andrew's cross	0.30

Scientific name	Common name	Average percent cover per quadrat
<i>Pseudognaphalium obtusifolium</i>	sweet everlasting	0.30
<i>Bulbostylis ciliatifolia</i>	capillary hairsedge	0.27
<i>Scleria ciliata</i>	fringed nutrush	0.27
<i>Smilax pumila</i>	sarsaparilla vine	0.23
<i>Conyza canadensis</i>	Canadian horseweed	0.23
<i>Baptisia lanceolata</i>	gopherweed	0.23
<i>Pityopsis aspera</i>	pineland silkgrass	0.23
<i>Galium hispidulum</i>	coastal bedstraw	0.10
<i>Solidago</i> sp.	goldenrod	0.10
<i>Quercus margarettae</i>	sand post oak	0.10
<i>Dichantherium aciculare</i>	needleleaf witchgrass	0.10
<i>Croptilon divaricatum</i>	slender scratchdaisy	0.07
<i>Liatris spicata</i>	dense gayfeather	0.07
<i>Berlandiera pumila</i>	soft greeneyes	0.03
<i>Aristida purpurascens</i>	arrowfeather threeawn	0.03
<i>Baccharis halimifolia</i>	groundsel tree	0.03
<i>Euphorbia floridana</i>	greater Florida spurge	0.03
<i>Viola</i> sp.	violet	0.03
<i>Rhynchosia reniformis</i>	dollarleaf	0.03
<i>Vaccinium arboreum</i>	sparkleberry	0.03
<i>Cnidocolus stimulosus</i>	tread softly	0.03
<i>Trichostema dichotomum</i>	forked bluecurls	0.03
<i>Liatris pauciflora</i> var. <i>secunda</i>	Piedmont gayfeather	0.03
<i>Rhynchospora</i> sp.	beaksedge	0.03
	Bare ground	28.43

Figure PC-3. Percent species cover in Sandhill Transect 2.

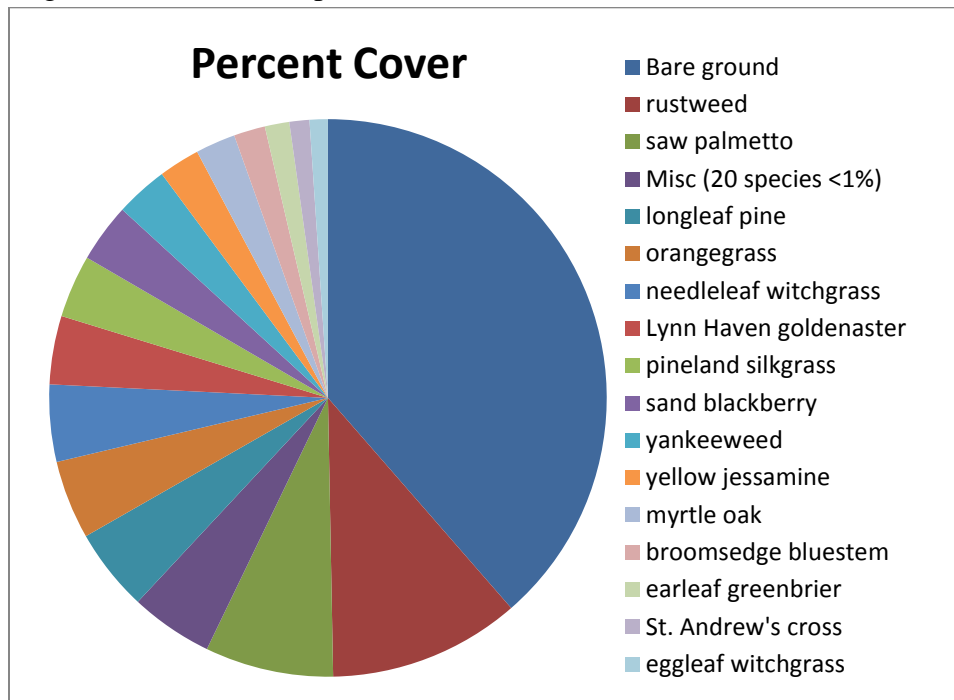


Table PC-3. Percent cover of plant species in Sandhill Transect 2 when sampled on October 20, 2016.

Scientific name	Common name	Average percent cover per quadrat
<i>Polypremum procumbens</i>	rustweed	11.20
<i>Serenoa repens</i>	saw palmetto	7.50
<i>Pinus palustris</i>	longleaf pine	4.83
<i>Hypericum gentianoides</i>	orangegrass	4.60
<i>Dichantherium aciculare</i>	needleleaf witchgrass	4.50
<i>Chrysopsis lanuginosa</i>	Lynn Haven goldenaster	4.00
<i>Pityopsis aspera</i>	pineland silkgrass	3.67
<i>Rubus cuneifolius</i>	sand blackberry	3.43
<i>Eupatorium compositifolium</i>	yankeeweed	3.07
<i>Gelsemium sempervirens</i>	yellow jessamine	2.40
<i>Quercus myrtifolia</i>	myrtle oak	2.33
<i>Andropogon virginicus</i>	broomsedge bluestem	1.83
<i>Smilax auriculata</i>	earleaf greenbrier	1.43
<i>Hypericum hypericoides</i>	St. Andrew's cross	1.17
<i>Dichantherium ovale</i>	eggleaf witchgrass	1.07
<i>Pteridium aquilinum</i>	bracken fern	0.70
<i>Agalinis fasciculata</i>	beach false foxglove	0.57
<i>Aristida purpurascens</i>	arrowfeather threeawn	0.53

Scientific name	Common name	Average percent cover per quadrat
<i>Solidago odora</i>	sweet goldenrod	0.47
<i>Pseudognaphalium obtusifolium</i>	sweet everlasting	0.30
<i>Hibiscus aculeatus</i>	comfortroot	0.23
<i>Dichantherium acuminatum</i>	tapered witchgrass	0.23
<i>Smilax bona-nox</i>	saw greenbrier	0.23
<i>Euthamia caroliniana</i>	slender flattop goldenrod	0.20
<i>Cyperus retrorsus</i>	pinebarren flatsedge	0.17
<i>Solidago fistulosa</i>	pinebarren goldenrod	0.10
<i>Conyza canadensis</i>	Canadian horseweed	0.07
<i>Symphyotrichum dumosum</i>	rice button aster	0.07
<i>Smilax glauca</i>	cat greenbrier	0.03
<i>Tragia smallii</i>	Small's noseburn	0.03
<i>Baccharis halimifolia</i>	groundsel tree	0.03
<i>Croptilon divaricatum</i>	slender scratchdaisy	0.03
<i>Trichostema dichotomum</i>	forked bluecurls	0.03
<i>Pityopsis graminifolia</i>	narrowleaf silkgrass	0.03
<i>Vitis rotundifolia</i>	muscadine	0.03
	Bare ground	38.87

### Mixed Forested Wetland (Restoration)

**Qualitative sampling.** The mixed forested wetland restoration area (Figure PC-1) resembled a marsh due to its sparse tree cover. The muck soil of the former beaver pond was inundated at the time of the survey. The vegetative cover consisted primarily of willow herb, a low shrub with woody base and herbaceous stems that arch over to form an impenetrable interlacing thicket. Interspersed with the willow herb were patches of young cypress with occasional swamp tupelo, sweetbay, and red maple. Shallower areas near the shore were lined with a diverse set of wetland herbs, including taperleaf waterhorehound, and maidencane. The total number of species observed in this community was 26 (Table PC-1).

**Quantitative sampling.** Transect 1 (Table PC-4, Figure PC-4) had a total of 13 species with 29% bare ground. The highest percent cover was by willow herb followed by shrubby primrose willow and sweetbay. Willow herb was still in leaf at the time of the sampling.

Figure PC-4. Percent cover of plant species in Mixed Forested Wetland (Restored) Transect 1.

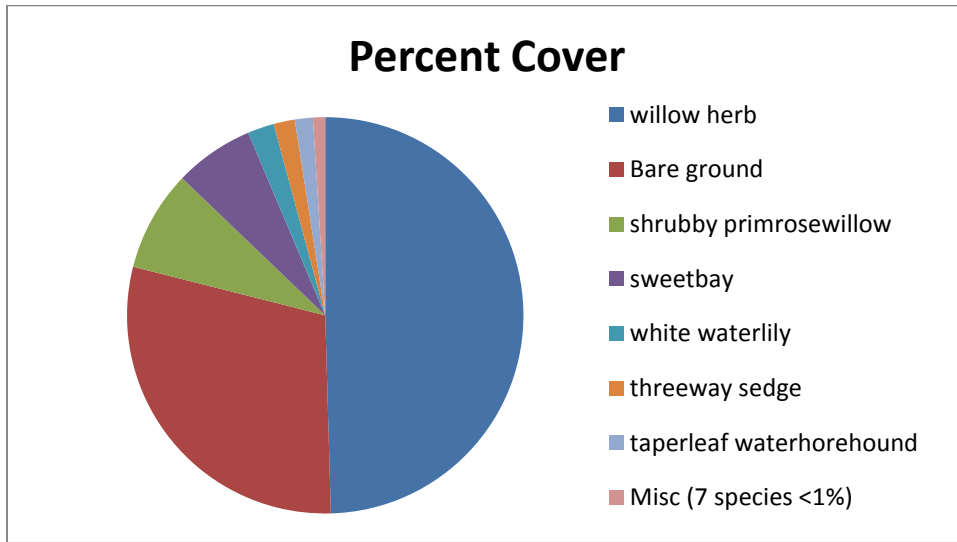


Table PC-4. Percent cover of plant species in Mixed Forested Wetland (Restored) Transect 1 when sampled on October 19, 2016.

Scientific name	Common name	Average percent cover per quadrat
<i>Decodon verticillatus</i>	willow herb	49.67
<i>Ludwigia suffruticosa</i>	shrubby primrosewillow	8.23
<i>Magnolia virginiana</i>	sweetbay	6.50
<i>Nymphaea odorata</i>	white waterlily	2.17
<i>Dulichium arundinaceum</i>	threeway sedge	1.73
<i>Lycopus rubellus</i>	taperleaf waterhorehound	1.47
<i>Juncus canadensis</i>	Canadian rush	0.37
<i>Taxodium distichum</i>	bald cypress	0.10
<i>Eleocharis equisetoides</i>	jointed spikerush	0.10
<i>Nymphoides cordata</i>	little floatingheart	0.10
<i>Panicum hemitomon</i>	maidencane	0.03
unknown graminoid	unknown graminoid	0.03
<i>Nyssa sylvatica</i> var. <i>biflora</i>	swamp tupelo	0.03
	Bare ground	29.47

### Mixed Forested Wetland (Preserved)

**Qualitative sampling.** The preserved mixed forested wetland (Figure PC-1) was a relatively undisturbed mature baygall forest. The tall canopy of large trees formed dense shade with occasional openings in places. Dominant species were sweetbay, swamp tupelo, and Virginia live oak. The dense subcanopy was formed primarily by tree-size black titi, and swamp bay. The moderately dense shrub layer consisted mainly of large gallberry, fetterbush, and sweet

pepperbush. The sparse herb layer was primarily sphagnum moss. The muck soil was saturated, but no standing water was present at the time of sampling. The total number of species observed in this community was 25 (Table PC-1).

**Quantitative sampling.** Transect 2 (Table PC-5, Figure PC-5) had a total of 17 species with 62% bare ground. The dominant shrubs were fetterbush and sweet pepperbush, with lesser amounts of large gallberry and highbush blueberry. Sphagnum moss formed most of the sparse herbaceous cover.

Figure PC-5. Percent cover of plant species in Mixed Forested Wetland (Preserved) Transect 2.

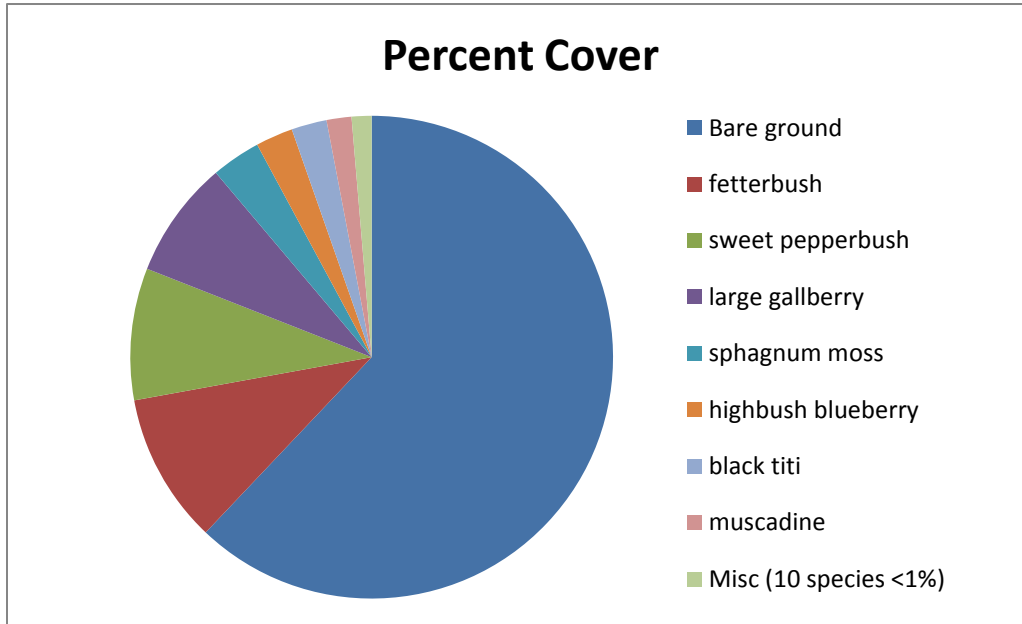


Table PC-5. Percent cover of plant species in Mixed Forested Wetland (Preserved) Transect 2 when sampled on October 20, 2016.

Scientific name	Common name	Average percent cover per quadrat
<i>Lyonia lucida</i>	fetterbush	10.07
<i>Clethra alnifolia</i>	sweet pepperbush	8.83
<i>Ilex coriacea</i>	large gallberry	7.87
<i>Sphagnum</i> sp.	sphagnum moss	3.30
<i>Vaccinium corymbosum</i>	highbush blueberry	2.50
<i>Cliftonia monophylla</i>	black titi	2.37
<i>Vitis rotundifolia</i>	muscadine	1.67
<i>Carex striata</i>	Walter's sedge	0.50
<i>Nyssa sylvatica</i> var. <i>biflora</i>	swamp tupelo	0.23
<i>Rhododendron chapmanii</i>	Chapman's rhododendron	0.23
<i>Smilax laurifolia</i>	laurel greenbrier	0.10
<i>Apteris aphylla</i>	nodding nixie	0.10
<i>Vaccinium</i> sp.	blueberry	0.03



Scientific name	Common name	Average percent cover per quadrat
<i>Rhynchospora chalarocephala</i>	loosehead beaksedge	0.03
<i>Osmanthus americanus</i>	wild olive	0.03
<i>Woodwardia areolata</i>	netted chain fern	0.03
<i>Persea palustris</i>	swamp bay	0.03
	Bare ground	62.07