

## **BAYPORT MITIGATION**

### Fall 2021 Monitoring Report

USACE Permit No.: SAJ-1997-07427 (SP-SWA), issued 7/9/2018

Permittee: DJFO, Inc.  
c/o: Jay Odom  
P.O. Box 1735  
Destin, FL 32540

Responsible Party for Monitoring: Northwest Florida Water Management District  
81 Water Management Drive  
Havana, FL 32333

Entity Conducting Vegetation Monitoring: Florida Natural Areas Inventory  
Institute of Science and Public Affairs  
Florida State University  
1018 Thomasville Road, Suite 200-C  
Tallahassee, FL 32303

Monitoring Dates: 11/15-16/2021 (Vegetation)  
4/21/2021 & 9/23/2021 (Panoramic Photography)

### **Summary**

This project (Bayport Mitigation) compensates for impacts to 6.55 acres of jurisdictional wetlands (hydric pine flatwoods) associated with a commercial development on CR 3280 in Freeport, Florida (DJFO, Inc.). Mitigation, as authorized by SAJ-1997-07427 (SP-SWA), will restore 55.6 acres of hydric pine flatwoods / mixed forested wetlands at Devils Swamp, an area that is owned and managed for ecological integrity by the Northwest Florida Water Management District (NFWFMD) and is part of the Choctawhatchee River Water Management Area. The offsite mitigation area is located approximately six miles southeast of the impact along an unnamed dirt road east of the unincorporated community of Bunker (Figure 1). Prior to NFWFMD acquisition in 1992, the site had been converted to slash pine plantation.

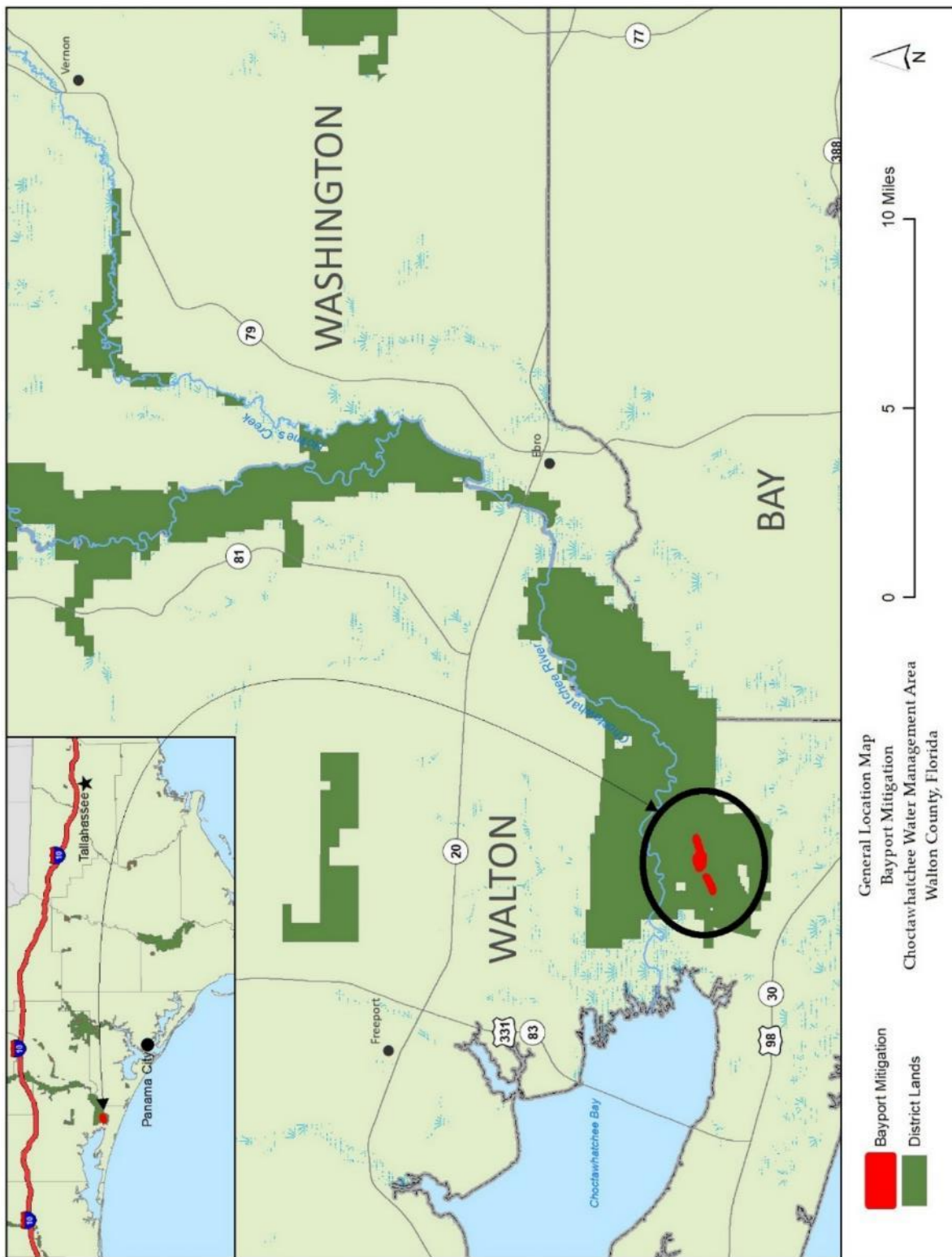


Figure 1. Location Map of Mitigation Area

As described in SAJ-1997-07427 (SP-SWA), the mitigation area is divided into four management polygons (A – D). The USACE permit describes Polygons A, C and D as wet prairie, and Polygon B as hydric pine flatwoods. However, the correct community composition designation is hydric pine flatwoods for Polygons A, B and D; mixed forested wetlands with hydric pine flatwood inclusions for Polygon C.

Mitigation activities implemented-to-date include 1) baseline monitoring (August 2017); 2) shrub and tree density reduction (October 2017); 3) prescribed fire (February 2018, April 2021); 4) repeat panoramic photography (August 2017, March 2018, September 2018, September 2019, October 2020, April 2021, September 2021); 5) herbicide treatments (September 2019) to reduce shrub regrowth; and 6) post-baseline quantitative vegetation monitoring (April 2018, December 2018/January 2019, September/October 2019, October/November 2020, November 2021).

Performance standards, as specified in SAJ-1997-07427 (SP-SWA), were met in early 2018. However, resprouting resulted in shrub cover targets exceeding performance standards (<5% cover) by Fall 2019. As remediation, all mitigation polygons were treated with herbicide in September 2019 and prescribed fire in April 2021 to reduce shrub cover back to the target of <5%; results have been mixed. Vegetation transects monitored in November 2021 indicated that shrub cover in the mitigation polygons varied from 2.86% to 15.18%, with an average shrub cover of 9.74%. Additional herbicide treatments and prescribed fire will be necessary to bring shrub cover back to within the targeted range.

<b>Special Condition No. 9, Performance Standards, USACE SAJ-1997-07427 SP-SWA</b>	<b>Status</b>
<p>a. Within Mitigation Area “A”, reduce tree density to no more than 200 trees per acre and reduce shrub coverage to less than 5% cover, by January 2019.</p>	<ul style="list-style-type: none"> <li>• Tree density performance standard met.</li> <li>• Shrub cover performance standard not met.</li> </ul> <p>Tree cover reduced to ≤ 200/Acre in 2017.</p> <p>Shrub cover reduced to &lt;5% in 2017/2018 in accordance with performance standards. Shrub resprouting necessitated additional herbicide treatments in Fall 2019 and prescribed fire in April 2021. Shrub cover in Polygon “A” varied from 5.41% to 6.44% (5.93% average) in Fall 2021; target performance standard not met.</p>

<p><b>Special Condition No. 9, Performance Standards, USACE SAJ-1997-07427 SP-SWA</b></p>	<p><b>Status</b></p>
<p>b. Within Mitigation Area “B”, reduce tree density to no more than 400 trees per acre and reduce shrub coverage to less than 5% cover, by January 2019.</p>	<ul style="list-style-type: none"> <li>• Tree density performance standard met.</li> <li>• Shrub cover performance standard not met.</li> </ul> <p>Tree cover reduced to ≤ 400/Acre in 2017.</p> <p>Shrub cover reduced to &lt;5% in 2017/2018 in accordance with performance standards. Shrub resprouting necessitated additional herbicide treatments in Fall 2019 and prescribed fire in April 2021. Shrub cover in Polygon “B” varied from 7.31% to 22.68% (15.00% average) in Fall 2021 and did not meet the target performance standard. Additional herbicide treatments and prescribed fire will be necessary to reduce shrub cover back to within the target performance standard.</p>
<p>c. Within Mitigation Area “C”, reduce tree density to no more than 200 trees per acre and reduce shrub coverage to less than 5% cover, by January 2019.</p>	<ul style="list-style-type: none"> <li>• Tree density performance standard met.</li> <li>• Shrub cover performance standard met.</li> </ul> <p>Tree cover reduced to ≤ 200/Acre in 2017.</p> <p>Shrub cover reduced to &lt;5% in 2017/2018 in accordance with performance standards. Shrub resprouting necessitated additional herbicide treatments in Fall 2019 and prescribed fire in April 2021. Shrub cover in Polygon “C” varied from 2.76% to 2.96% (2.86% average) in Fall 2021; target performance standard met. However, prescribed fire and possible additional herbicide treatments are expected to be necessary to maintain shrub cover to within the target performance standard.</p>

<p><b>Special Condition No. 9, Performance Standards, USACE SAJ-1997-07427 SP-SWA</b></p>	<p><b>Status</b></p>
<p>d. Within Mitigation Area “D”, reduce tree density to no more than 200 trees per acre and reduce shrub coverage to less than 5% cover, by January 2019.</p>	<ul style="list-style-type: none"> <li>• Tree density performance standard met.</li> <li>• Shrub cover performance standard not met.</li> </ul> <p>Tree cover reduced to ≤ 200/Acre in 2017.</p> <p>Shrub cover reduced to &lt;5% in 2017/2018 in accordance with performance standards. Shrub resprouting necessitated additional herbicide treatments in Fall 2019 and prescribed fire in April 2021. Shrub cover in Polygon “D” varied from 14.84% to 15.51% (15.18% average) in Fall 2021 and did not meet the target performance standard. Additional herbicide treatments and prescribed fire will be necessary to reduce shrub cover back to within the target performance standard.</p>
<p>e. Conduct prescribed burns of Mitigation Areas A, B, C, and D on 2-3 year cycles with the first burn occurring no later than March 2019.</p>	<ul style="list-style-type: none"> <li>• Prescribed fire performance standard met.</li> </ul> <p>Prescribed fire implemented in all polygons in February 2018 and April 2021.</p>
<p>f. Actively manage Mitigation Areas A, C, and D as wet prairie ecosystems and actively manage Mitigation Area B as a hydric pine flatwood ecosystem.</p>	<ul style="list-style-type: none"> <li>• Active management of mitigation areas performance standard met.</li> </ul> <p>Mitigation Polygons are actively being restored to appropriate, natural wetland communities. Correct community composition designation is hydric pine flatwoods for Polygons A, B and D; mixed forested wetlands with hydric pine flatwood inclusions in Polygon C</p>

<p><b>Special Condition No. 9, Performance Standards, USACE SAJ-1997-07427 SP-SWA</b></p>	<p><b>Status</b></p>
<p>g. Conduct annual monitoring of Mitigation Areas A, B, C, and D in accordance with the Monitoring and Reporting Timeframes special condition of this authorization.</p>	<ul style="list-style-type: none"> <li>• Annual monitoring performance standard met.</li> </ul>
<p>h. Cover of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council at <a href="http://www.fleppc.org">http://www.fleppc.org</a>, shall total less than 1 percent.</p>	<ul style="list-style-type: none"> <li>• Category I &amp; II invasive exotic plant species cover performance standard (&lt;1%) met.</li> </ul>



## Quantitative Monitoring Methodology

Percent vegetation cover was measured in 1 m<sup>2</sup> quadrats (10-foot intervals) along eight 150-foot transects in November 2021 (Figure 2). The percent coverage for each species was determined by adding all quadrat observations together and dividing the total coverage by the cover of each species within each transect. This represents a modified Daubenmire cover scale where vegetation species statistics are used to determine the percent cover by bare ground, water and plant species.

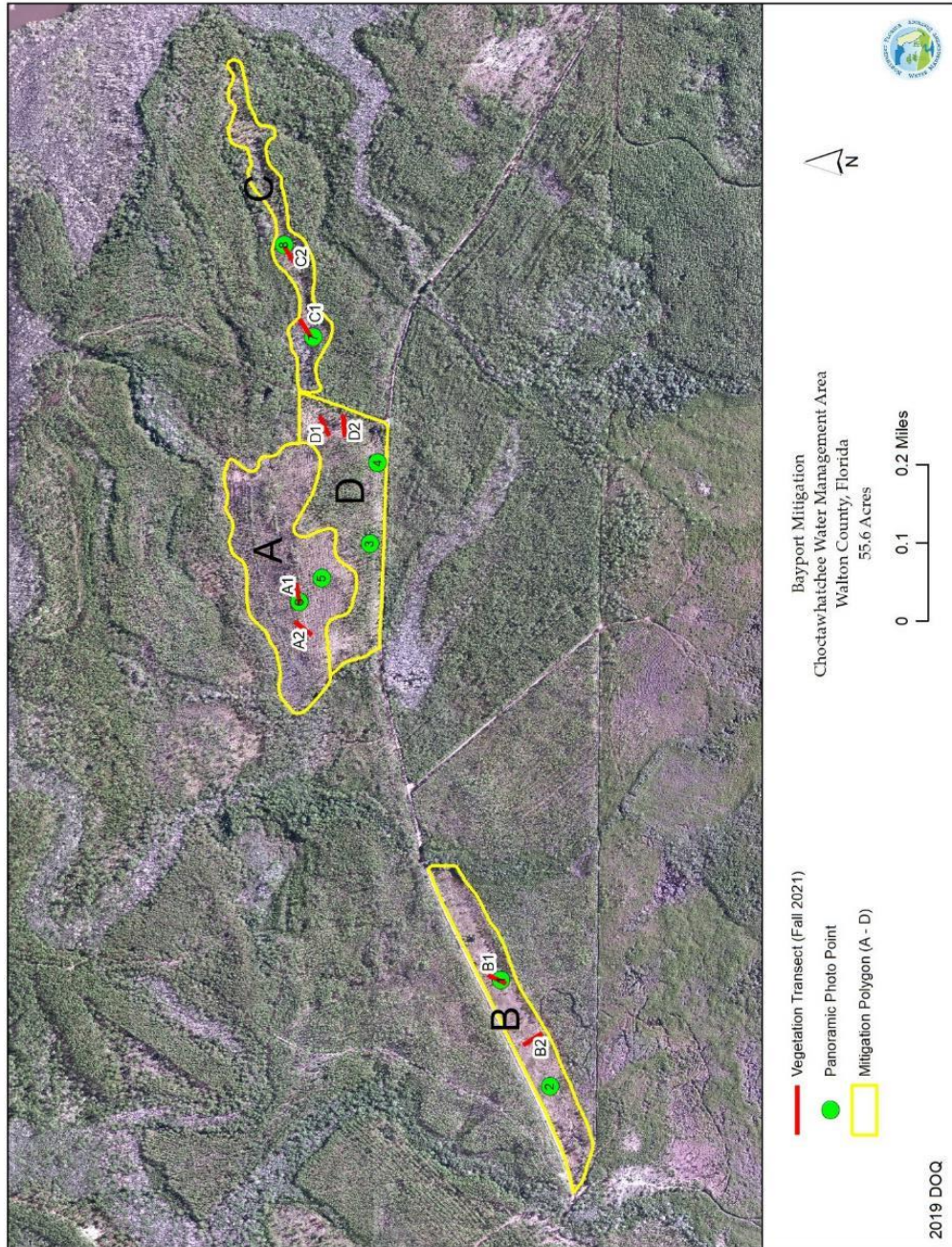


Figure 2. Fall 2021 Vegetation Transects

Rooted shrub stem density was monitored within each mitigation polygon using five 1 m<sup>2</sup> quadrats established at random (Figure 3 and Table 1).

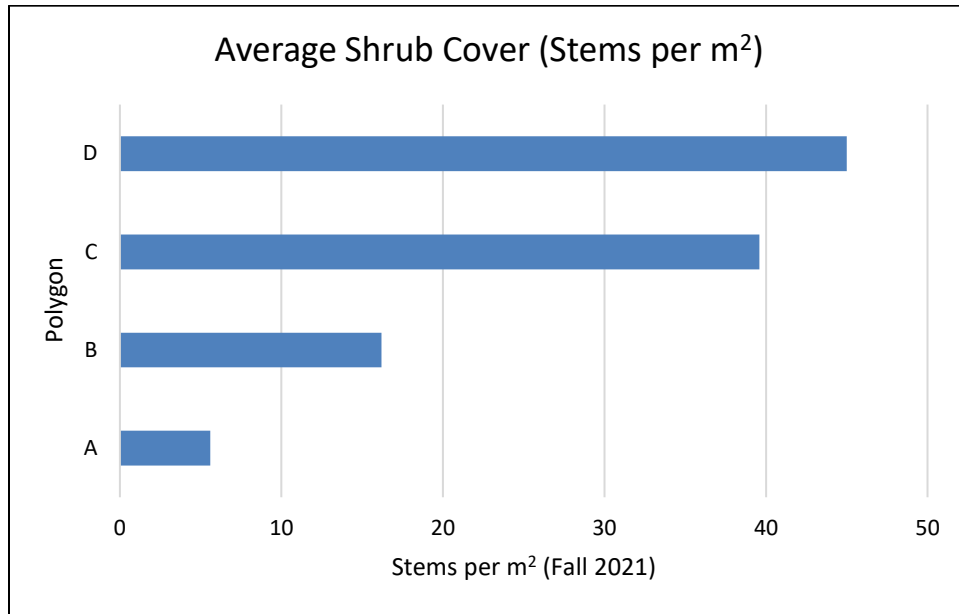


Figure 3. Average Rooted Shrub Stems per Square Meter (Fall 2021)

Table 1. Rooted Shrub Stems per Square Meter (Fall 2021)

Polygon A		Polygon B		Polygon C		Polygon D	
Shrub Quadrat	Shrub Stems per m <sup>2</sup>	Shrub Quadrat	Shrub Stems per m <sup>2</sup>	Shrub Quadrat	Shrub Stems per m <sup>2</sup>	Shrub Quadrat	Shrub Stems per m <sup>2</sup>
1	1	1	12	1	8	1	62
2	23	2	18	2	33	2	27
3	0	3	8	3	22	3	75
4	3	4	28	4	5	4	29
5	1	5	15	5	130	5	32
AVG Stem per m <sup>2</sup>	5.6	AVG Stem per m <sup>2</sup>	16.2	AVG Stem per m <sup>2</sup>	39.6	AVG Stem per m <sup>2</sup>	45



**Transect A1 (Polygon A; Hydric Pine Flatwoods Restoration)**

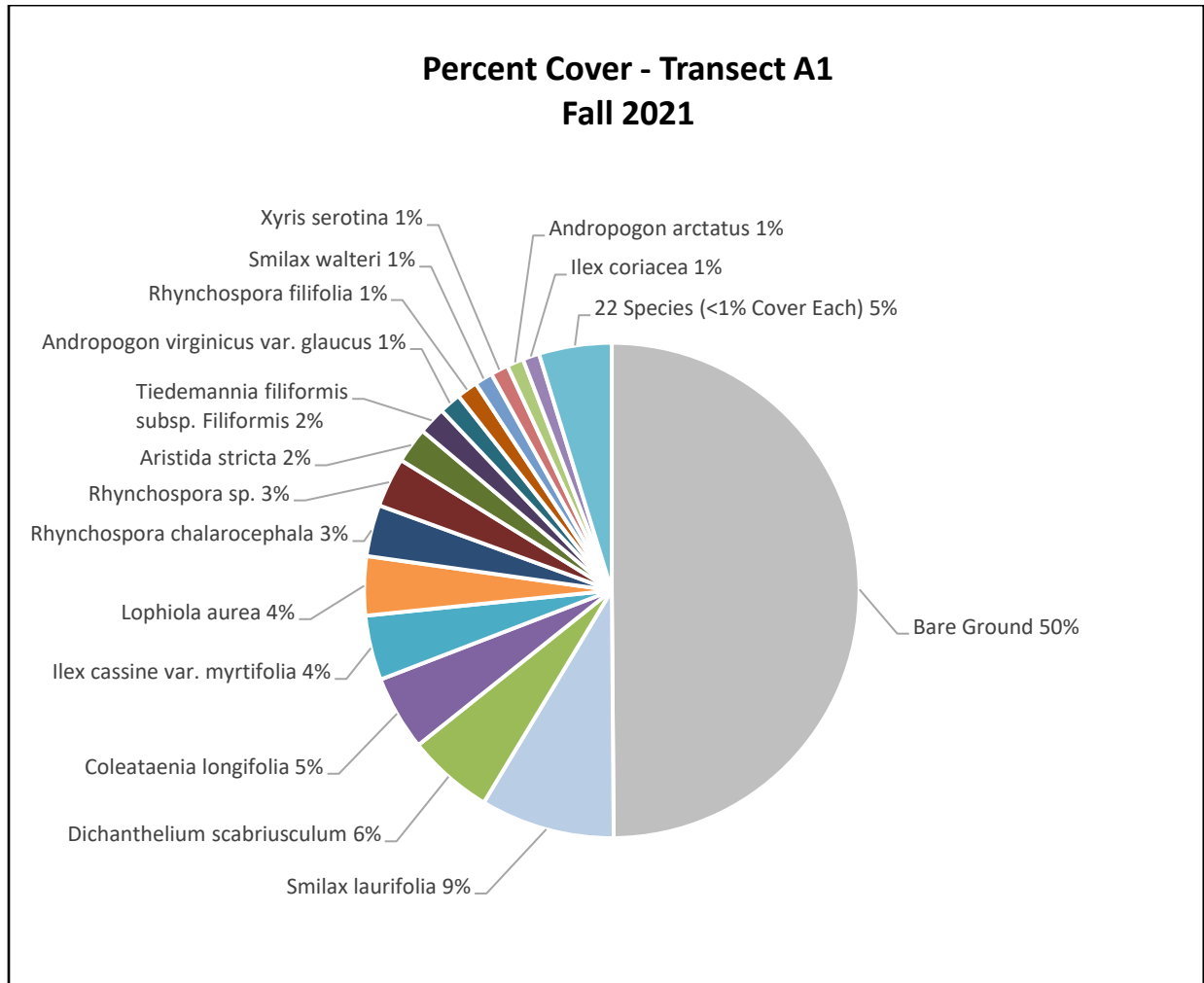


Table 2. Transect A1 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Andropogon arctatus</i>	Pinewoods bluestem	1.09
<i>Andropogon sp.</i>	Bluestem	0.90
<i>Andropogon virginicus var. glaucus</i>	Chalky bluestem	1.43
<i>Anthaenantia rufa</i>	Purple silkyscale	0.22
<i>Aristida palustris</i>	Longleaf threeawn	0.16
<i>Aristida stricta</i>	Wiregrass	2.33
Bare Ground	Bare Ground	49.88
<i>Cliftonia monophylla</i>	Black titi	0.09
<i>Coleataenia longifolia</i>	Ciliate redtop panicum	4.88
<i>Dichanthelium scabriusculum</i>	Woolly witchgrass	5.62
<i>Dichanthelium strigosum</i>	Roughhair witchgrass	0.22
<i>Eriocaulon compressum</i>	Flattened pipewort	0.37
<i>Eriocaulon decangulare</i>	Tenangle pipewort	0.22
<i>Eupatorium mohrii</i>	Mohr's thoroughwort	0.09
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	0.03
<i>Ilex cassine var. myrtifolia</i>	Myrtle-leaved holly	4.23
<i>Ilex coriacea</i>	Large gallberry	1.09
<i>Lachnanthes carolina</i>	Carolina redroot	0.03
<i>Liatris spicata</i>	Dense gayfeather	0.87
<i>Lophiola aurea</i>	Golden crest	3.85
<i>Oxypolis ternata</i>	Piedmont cowbane	0.09
<i>Pinus elliottii</i>	Slash pine	0.03
<i>Rhexia sp.</i>	Meadowbeauty	0.03
<i>Rhynchospora chalarocephala</i>	Loosehead beaksedge	3.36

Scientific Name	Common Name	Percent Cover
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	0.03
<i>Rhynchospora filifolia</i>	Threadleaf beaksedge	1.37
<i>Rhynchospora harperi</i>	Harper's beaksedge	0.09
<i>Rhynchospora latifolia</i>	White-top sedge	0.31
<i>Rhynchospora sp.</i>	Beaksedge	3.23
<i>Sarracenia flava</i>	Yellow pitcherplant	0.09
<i>Scleria reticularis</i>	Netted nutrush	0.03
<i>Smilax laurifolia</i>	Laurel greenbrier	8.76
<i>Smilax walteri</i>	Coral greenbrier	1.18
<i>Symphotrichum chapmanii</i>	Savannah aster	0.25
<i>Tiedemannia filiformis subsp. Filiformis</i>	Water cowbane	1.80
<i>Viola lanceolata</i>	Bog white violet	0.47
<i>Xyris serotina</i>	Acid swamp yellow-eyed grass	1.15
<i>Xyris sp.</i>	Yellow-eyed grass	0.12
		100.00

**Transect A2 (Polygon A; Hydric Pine Flatwoods Restoration)**

**Percent Cover - Transect A2  
Fall 2021**

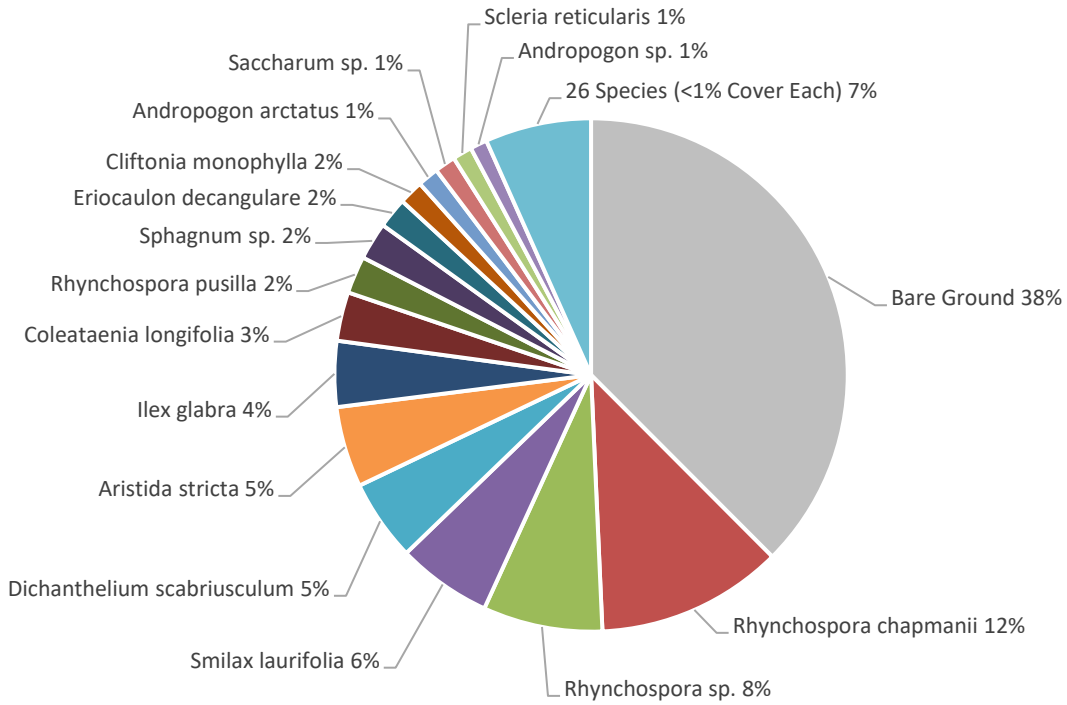


Table 3. Transect A2 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Andropogon arctatus</i>	Pinewoods bluestem	1.32
<i>Andropogon glomeratus</i> var. <i>glaucoptis</i>	Purple bluestem	0.19
<i>Andropogon gyrans</i> var. <i>stenophyllus</i>	Elliott's bluestem	0.22
<i>Andropogon</i> sp.	Bluestem	1.07
<i>Anthraenantia rufa</i>	Purple silkyscale	0.03
<i>Aristida palustris</i>	Longleaf threeawn	0.03
<i>Aristida stricta</i>	Wiregrass	5.09
Bare Ground	Bare Ground	37.52
<i>Clethra alnifolia</i>	Sweet pepperbush	0.09
<i>Cliftonia monophylla</i>	Black titi	1.54
<i>Coleataenia longifolia</i>	Ciliate redtop panicum	3.08
<i>Cyrilla racemiflora</i>	Titi	0.22
<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	Cypress witchgrass	0.03
<i>Dichanthelium leucothrix</i>	Rough witchgrass	0.44
<i>Dichanthelium scabriusculum</i>	Woolly witchgrass	5.12
<i>Drosera capillaris</i>	Pink sundew	0.22
<i>Eriocaulon compressum</i>	Flattened pipewort	0.22
<i>Eriocaulon decangulare</i>	Tenangle pipewort	1.92
<i>Eupatorium mohrii</i>	Mohr's thoroughwort	0.22
<i>Fuirena breviseta</i>	Saltmarsh umbrellasedge	0.57
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	0.06
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.06
<i>Ilex cassine</i> var. <i>myrtifolia</i>	Myrtle-leaved holly	0.44
<i>Ilex glabra</i>	Gallberry	4.14

Scientific Name	Common Name	Percent Cover
<i>Kellochloa verrucosa</i>	Warty panicgrass	0.47
<i>Liatris spicata</i>	Dense gayfeather	0.13
<i>Lophiola aurea</i>	Golden crest	0.22
<i>Lycopodiella appressa</i>	Southern club-moss	0.44
<i>Rhexia alifanus</i>	Savannah meadowbeauty	0.16
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	11.77
<i>Rhynchospora pusilla</i>	Fairy beaksedge	2.35
<i>Rhynchospora sp.</i>	Beaksedge	7.54
<i>Saccharum sp.</i>	Plumegrass	1.32
<i>Scleria reticularis</i>	Netted nutrush	1.22
<i>Smilax glauca</i>	Cat greenbrier	0.03
<i>Smilax laurifolia</i>	Laurel greenbrier	5.97
<i>Smilax walteri</i>	Coral greenbrier	0.35
<i>Sphagnum sp.</i>	Sphagnum moss	2.35
<i>Symphotrichum chapmanii</i>	Savannah aster	0.31
<i>Tiedemannia filiformis</i>	Water cowbane	0.22
<i>Xyris ambigua</i>	Coastalplain yellow-eyed grass	0.69
<i>Xyris sp.</i>	Yellow-eyed grass	0.63
		100.00



**Transect B1 (Polygon B; Hydric Pine Flatwoods Restoration)**

**Percent Cover - Transect B1  
Fall 2021**

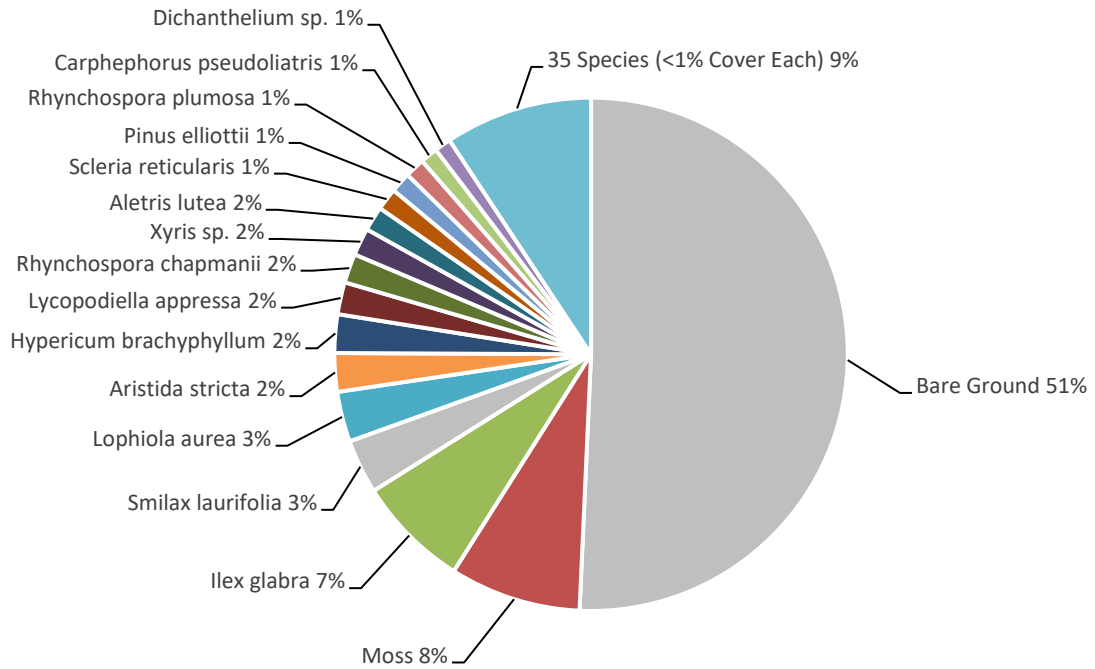


Table 4. Transect B1 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Aletris lutea</i>	Yellow colic-root	1.54
<i>Andropogon sp.</i>	Bluestem	0.07
<i>Andropogon virginicus</i>	Broomsedge bluestem	0.26
<i>Andropogon virginicus var. glaucus</i>	Chalky bluestem	0.40
<i>Aristida stricta</i>	Wiregrass	2.43
Bare Ground	Bare Ground	50.72
<i>Bigelovia nudata subsp. nudata</i>	Pineland rayless goldenrod	0.37
<i>Carphephorus pseudoliatris</i>	Bristleleaf chaffhead	1.10
<i>Coreopsis sp.</i>	Tickseed	0.15
<i>Ctenium aromaticum</i>	Toothache grass	0.04
<i>Dichanthelium ensifolium var. ensifolium</i>	Cypress witchgrass	0.62
<i>Dichanthelium leucothrix</i>	Rough witchgrass	0.55
<i>Dichanthelium ovale</i>	Eggleaf witchgrass	0.18
<i>Dichanthelium sp.</i>	Witchgrass	1.03
<i>Drosera capillaris</i>	Pink sundew	0.29
<i>Eragrostis sp.</i>	Lovegrass	0.11
<i>Eupatorium mohrii</i>	Mohr's thoroughwort	0.18
<i>Gaylussacia dumosa</i>	Dwarf huckleberry	0.11
<i>Helianthus heterophyllus</i>	Variableleaf sunflower	0.51
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	2.43
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.07
<i>Hypericum microsepalum</i>	Flatwoods St. John's wort	0.88
<i>Ilex cassine var. myrtifolia</i>	Myrtle-leaved holly	0.11
<i>Ilex glabra</i>	Gallberry	7.09

Scientific Name	Common Name	Percent Cover
<i>Kellochloa verrucosa</i>	Warty panicgrass	0.26
<i>Lachnanthes caroliana</i>	Carolina redroot	0.04
<i>Lobelia brevifolia</i>	Shortleaf lobelia	0.04
<i>Lophiola aurea</i>	Golden crest	3.16
<i>Ludwigia linifolia</i>	Southeastern primrosewillow	0.04
<i>Lycopodiella alopecuroides</i>	Foxtail club-moss	0.51
<i>Lycopodiella appressa</i>	Southern club-moss	2.02
<i>Lycopodiella caroliniana</i>	Slender club-moss	0.40
Moss	Moss	8.27
<i>Pinus elliotii</i>	Slash pine	1.29
<i>Pityopsis sp.</i>	Silkgrass	0.04
<i>Polygala cruciata</i>	Drumheads	0.04
<i>Polygala ramosa</i>	Low pinebarren milkwort	0.04
<i>Quercus minima</i>	Dwarf live oak	0.77
<i>Rhexia alifanus</i>	Savannah meadowbeauty	0.04
<i>Rhexia petiolata</i>	Fringed meadowbeauty	0.33
<i>Rhynchospora baldwinii</i>	Baldwin's beaksedge	0.15
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	1.84
<i>Rhynchospora ciliaris</i>	Fringed beaksedge	0.29
<i>Rhynchospora fascicularis</i>	Fascicled beaksedge	0.04
<i>Rhynchospora plumosa</i>	Plumed beaksedge	1.25
<i>Rhynchospora pusilla</i>	Fairy beaksedge	0.77
<i>Scleria reticularis</i>	Netted nutrush	1.40
<i>Smilax laurifolia</i>	Laurel greenbrier	3.42
<i>Xyris caroliniana</i>	Carolina yellow-eyed grass	0.04

Scientific Name	Common Name	Percent Cover
<i>Xyris flabelliformis</i>	Savannah yellow-eyed grass	0.55
<i>Xyris sp.</i>	Yellow-eyed grass	1.73
		100.00

**Transect B2 (Polygon B; Hydric Pine Flatwoods Restoration)**

**Percent Cover - Transect B2  
Fall 2021**

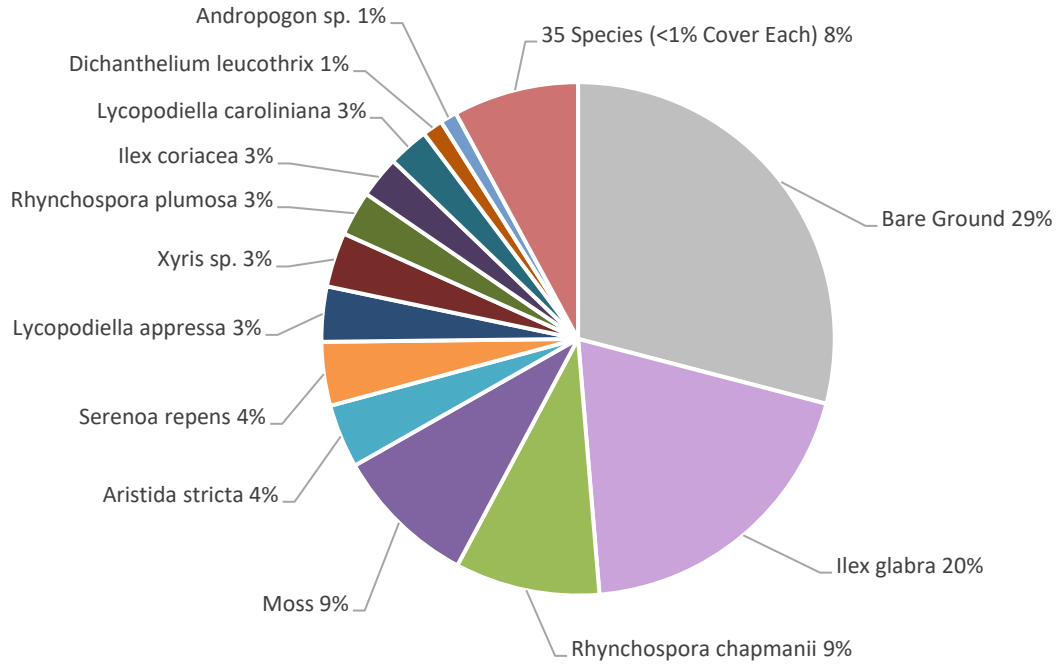


Table 5. Transect B2 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	Purple bluestem	0.03
<i>Andropogon</i> sp.	Bluestem	1.06
<i>Andropogon virginicus</i> var. <i>glaucus</i>	Chalky bluestem	0.03
<i>Aristida stricta</i>	Wiregrass	4.02
Bare Ground	Bare Ground	29.07
<i>Carphephorus paniculatus</i>	Hairy chaffhead	0.32
<i>Dichanthelium aciculare</i>	Needleleaf witchgrass	0.10
<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	Cypress witchgrass	0.77
<i>Dichanthelium leucothrix</i>	Rough witchgrass	1.28
<i>Dichanthelium ovale</i>	Eggleaf witchgrass	0.10
<i>Dichanthelium</i> sp.	Witchgrass	0.03
<i>Drosera capillaris</i>	Pink sundew	0.35
<i>Eupatorium mohrii</i>	Mohr's thoroughwort	0.16
<i>Gaylussacia dumosa</i>	Dwarf huckleberry	0.03
<i>Gaylussacia mosieri</i>	Woolly huckleberry	0.32
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	0.77
<i>Hypericum cistifolium</i>	Roundpod St. John's wort	0.13
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.45
<i>Hypericum microsepalum</i>	Flatwoods St. John's wort	0.39
<i>Ilex coriacea</i>	Large gallberry	2.63
<i>Ilex glabra</i>	Gallberry	19.60
<i>Kelochloa verrucosa</i>	Warty panicgrass	0.10
<i>Lachnocaulon anceps</i>	Whitehead bogbutton	0.03
<i>Lachnocaulon</i> sp.	Bogbuttons	0.10



Scientific Name	Common Name	Percent Cover
<i>Liatrix spicata</i>	Dense gayfeather	0.10
<i>Lycopodiella appressa</i>	Southern club-moss	3.47
<i>Lycopodiella caroliniana</i>	Slender club-moss	2.57
Moss	Moss	8.99
<i>Oldenlandia uniflora</i>	Clustered mille grains	0.10
<i>Polygala brevifolia</i>	Littleleaf milkwort	0.03
<i>Polygala lutea</i>	Orange milkwort	0.19
<i>Quercus minima</i>	Dwarf live oak	0.10
<i>Rhexia mariana</i>	Pale meadowbeauty	0.10
<i>Rhexia petiolata</i>	Fringed meadowbeauty	0.45
<i>Rhynchospora baldwinii</i>	Baldwin's beaksedge	0.22
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	9.12
<i>Rhynchospora fascicularis</i>	Fascicled beaksedge	0.93
<i>Rhynchospora plumosa</i>	Plumed beaksedge	2.83
<i>Sabatia angularis</i>	Bracken	0.22
<i>Sabatia brevifolia</i>	Shortleaf rosegiant	0.03
<i>Scleria ciliata</i>	Fringed nutrush	0.10
<i>Serenoa repens</i>	Saw palmetto	4.02
<i>Smilax glauca</i>	Cat greenbrier	0.13
<i>Smilax laurifolia</i>	Laurel greenbrier	0.22
<i>Vaccinium myrsinites</i>	Shiny blueberry	0.10
<i>Xyris brevifolia</i>	Shortleaf yellow-eyed grass	0.48
<i>Xyris flabelliformis</i>	Savannah yellow-eyed grass	0.19
<i>Xyris sp.</i>	Yellow-eyed grass	3.44
		100.00

**Transect C1 (Polygon C; Mixed Forested Wetlands w/Hydric Pine Flatwood Restoration)**

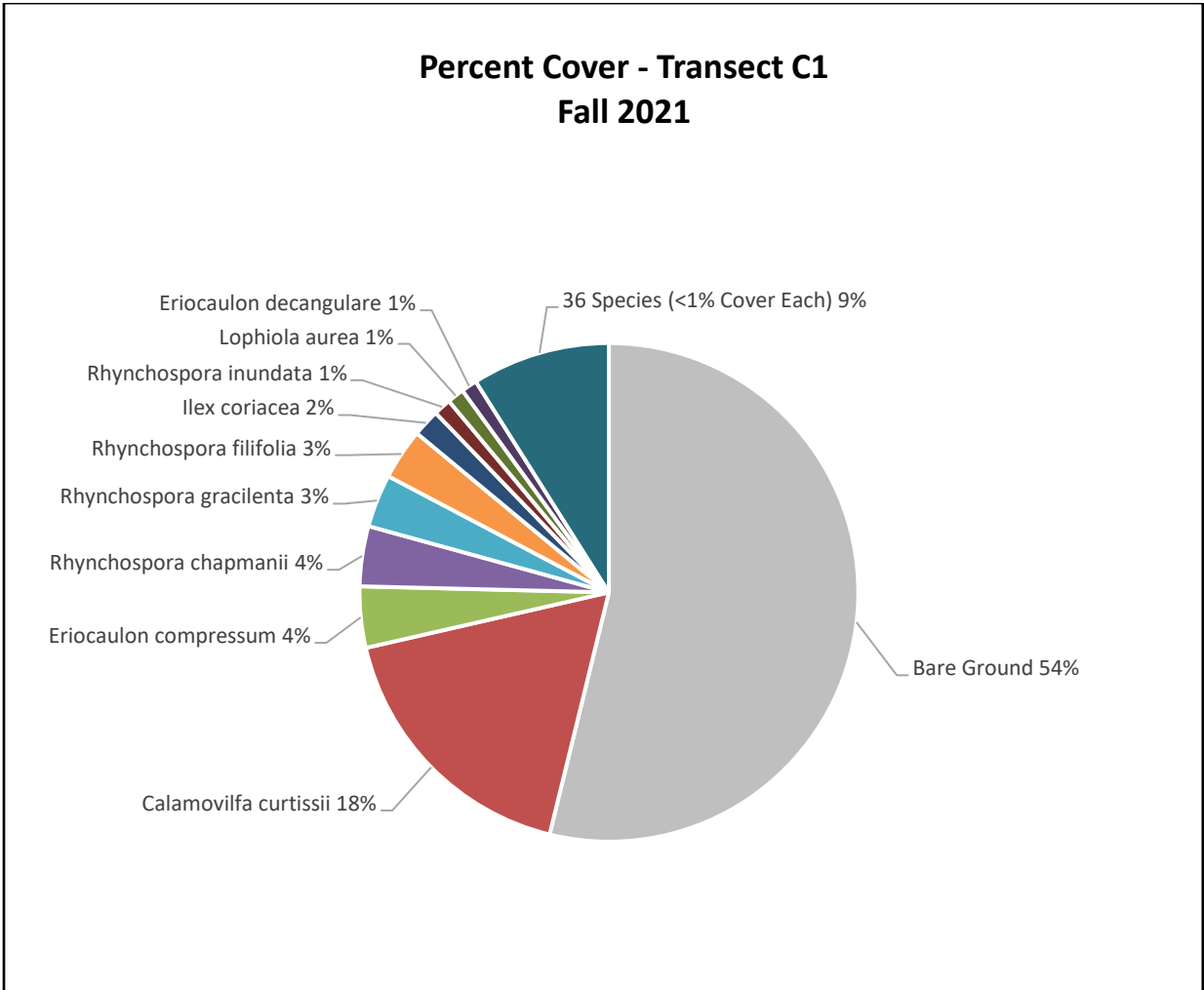


Table 6. Transect C1 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Andropogon arctatus</i>	Pinewoods bluestem	0.11
<i>Andropogon glomeratus var. pumilus</i>	Bushy bluestem	0.78
<i>Andropogon gyrans var. stenophyllus</i>	Elliott's bluestem	0.14
<i>Andropogon sp.</i>	Bluestem	0.50
<i>Andropogon virginicus</i>	Broomsedge bluestem	0.11
<i>Anthaenantia rufa</i>	Purple silkyscale	0.39
<i>Aristida palustris</i>	Longleaf threeawn	0.35
<i>Aristida stricta</i>	Wiregrass	0.53
<i>Aronia arbutifolia</i>	Red chokeberry	0.07
Bare Ground	Bare Ground	53.82
<i>Calamovilfa curtissii</i>	Curtiss' sandgrass	17.60
<i>Cliftonia monophylla</i>	Black titi	0.11
<i>Coleataenia longifolia</i>	Ciliate redtop panicum	0.28
<i>Cyrilla racemiflora</i>	Titi	0.18
<i>Dichanthelium ensifolium</i>	Cypress witchgrass	0.04
<i>Dichanthelium ensifolium var. ensifolium</i>	Cypress witchgrass	0.14
<i>Dichanthelium scabriusculum</i>	Woolly witchgrass	0.25
<i>Drosera capillaris</i>	Pink sundew	0.11
<i>Eriocaulon compressum</i>	Flattened pipewort	3.97
<i>Eriocaulon decangulare</i>	Tenangle pipewort	1.03
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	0.04
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.21
<i>Ilex cassine var. myrtifolia</i>	Myrtle-leaved holly	0.64
<i>Ilex coriacea</i>	Large gallberry	1.77

Scientific Name	Common Name	Percent Cover
<i>Kellochloa verrucosa</i>	Warty panicgrass	0.04
<i>Lachnanthes caroliana</i>	Carolina redroot	0.04
<i>Lophiola aurea</i>	Golden crest	1.10
<i>Lycopodiella alopecuroides</i>	Foxtail club-moss	0.07
<i>Magnolia virginiana</i>	Sweetbay	0.11
<i>Polygala lutea</i>	Orange milkwort	0.28
<i>Rhynchospora cephalantha</i>	Bunched beaksedge	0.85
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	3.90
<i>Rhynchospora fascicularis</i>	Fascicled beaksedge	0.04
<i>Rhynchospora filifolia</i>	Threadleaf beaksedge	3.29
<i>Rhynchospora gracilentia</i>	Slender beaksedge	3.43
<i>Rhynchospora harperi</i>	Harper's beaksedge	0.25
<i>Rhynchospora inundata</i>	Narrowfruit horned beaksedge	1.13
<i>Rhynchospora sp.</i>	Beaksedge	0.57
<i>Sarracenia flava</i>	Yellow pitcherplant	0.25
<i>Scleria ciliata</i>	Fringed nutrush	0.18
<i>Scleria reticularis</i>	Netted nutrush	0.18
<i>Smilax auriculata</i>	Earleaf greenbrier	0.04
<i>Smilax laurifolia</i>	Laurel greenbrier	0.35
<i>Taxodium ascendens</i>	Pond cypress	0.25
<i>Utricularia juncea</i>	Southern bladderwort	0.42
<i>Xyris sp.</i>	Yellow-eyed grass	0.11
		100.00

**Transect C2 (Polygon C; Mixed Forested Wetlands w/Hydric Pine Flatwood Restoration)**

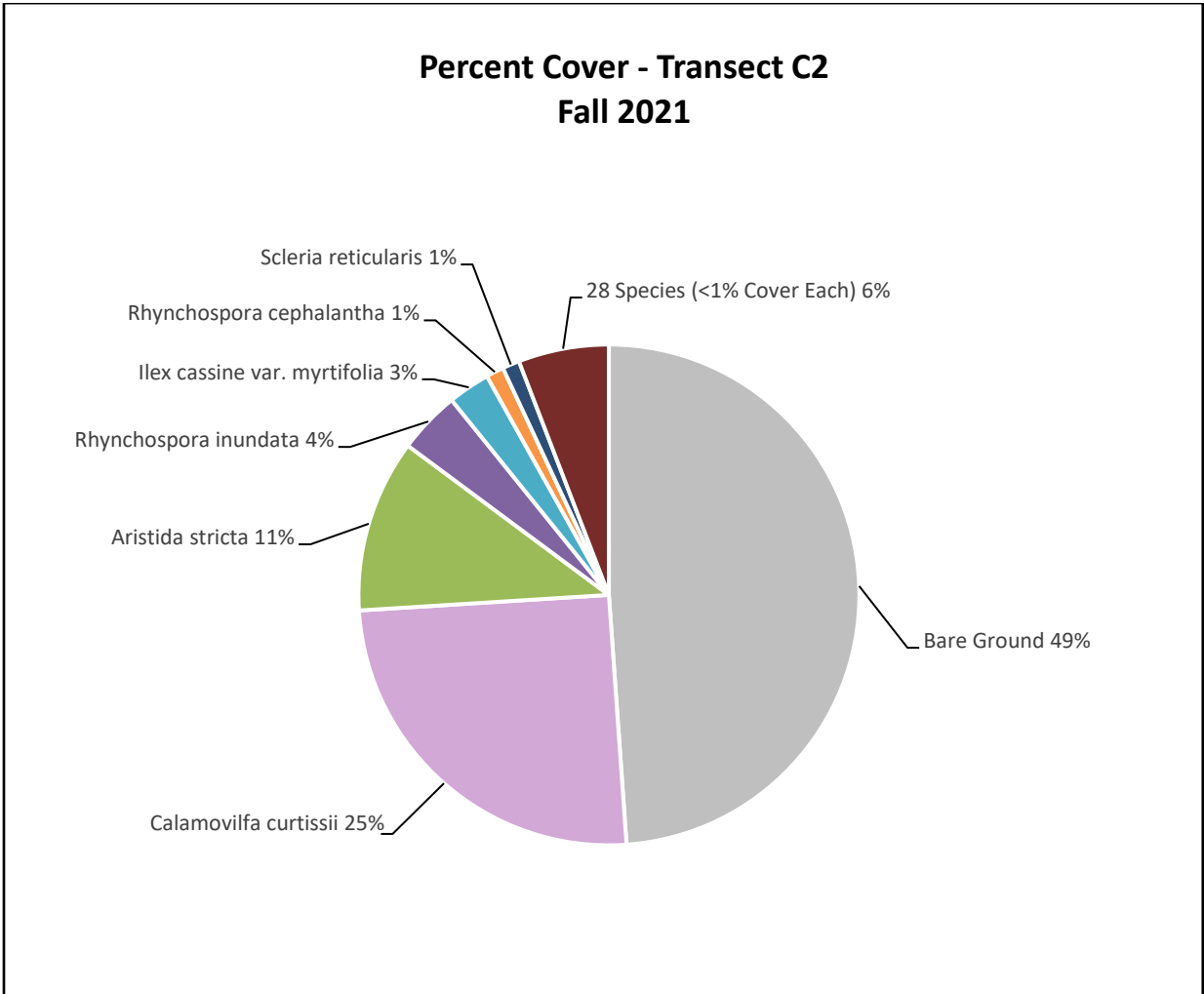


Table 7. Transect C2 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Amphicarpum muehlenbergianum</i>	Blue maidencane	0.07
<i>Andropogon arctatus</i>	Pinewoods bluestem	0.36
<i>Andropogon glomeratus var. glaucopsis</i>	Purple bluestem	0.25
<i>Andropogon sp.</i>	Bluestem	0.11
<i>Aristida palustris</i>	Longleaf threeawn	0.75
<i>Aristida stricta</i>	Wiregrass	11.16
Bare Ground	Bare Ground	48.88
<i>Calamovilfa curtissii</i>	Curtiss' sandgrass	25.13
<i>Cliftonia monophylla</i>	Black titi	0.25
<i>Coleataenia longifolia</i>	Ciliate redtop panicum	0.11
<i>Ctenium aromaticum</i>	Toothache grass	0.25
<i>Dichanthelium ensifolium var. ensifolium</i>	Cypress witchgrass	0.11
<i>Dichanthelium portoricense</i>	Hemlock witchgrass	0.04
<i>Dichanthelium scabriusculum</i>	Woolly witchgrass	0.11
<i>Dichanthelium sp.</i>	Witchgrass	0.04
<i>Eriocaulon compressum</i>	Flattened pipewort	0.71
<i>Eriocaulon decangulare</i>	Tenangle pipewort	0.53
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.11
<i>Hypericum myrtifolium</i>	Myrtleleaf St. John's wort	0.64
<i>Ilex cassine var. myrtifolia</i>	Myrtle-leaved holly	2.71
<i>Lachnanthes carolina</i>	Carolina redroot	0.04
<i>Lophiola aurea</i>	Golden crest	0.11
<i>Lycopodiella alopecuroides</i>	Foxtail club-moss	0.04
<i>Proserpinaca pectinata</i>	Combleaf mermaidweed	0.04



Scientific Name	Common Name	Percent Cover
<i>Rhexia alifanus</i>	Savannah meadowbeauty	0.11
<i>Rhynchospora cephalantha</i>	Bunched beaksedge	1.14
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	0.11
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge	0.04
<i>Rhynchospora filifolia</i>	Threadleaf beaksedge	0.36
<i>Rhynchospora harperi</i>	Harper's beaksedge	0.11
<i>Rhynchospora inundata</i>	Narrowfruit horned beaksedge	4.03
<i>Rhynchospora plumosa</i>	Plumed beaksedge	0.29
<i>Rhynchospora sp.</i>	Beaksedge	0.11
<i>Scleria reticularis</i>	Netted nutrush	1.11
<i>Smilax laurifolia</i>	Laurel greenbrier	0.11
		100.00

**Transect D1 (Polygon B; Hydric Pine Flatwoods Restoration)**

**Percent Cover - Transect D1  
Fall 2021**

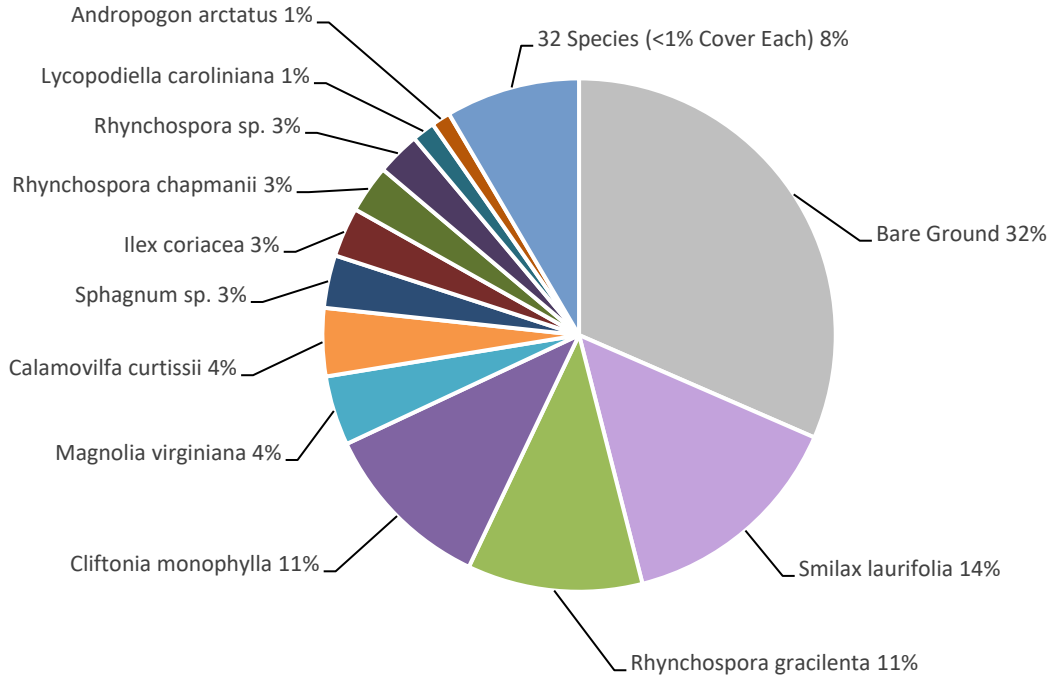


Table 8. Transect D1 (Fall 2021)

Scientific Name	Common Name	Percent Cover Across Transect
<i>Andropogon arctatus</i>	Pinewoods bluestem	1.20
<i>Andropogon glomeratus</i>	Bushy bluestem	0.10
<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	Purple bluestem	0.48
<i>Andropogon glomeratus</i> var. <i>glomeratus</i>	Bushy bluestem	0.48
<i>Andropogon gyrans</i> var. <i>stenophyllus</i>	Elliott's bluestem	0.24
<i>Andropogon</i> sp.	Bluestem	0.17
<i>Aristida stricta</i>	Wiregrass	0.51
<i>Arundinaria gigantea</i>	Switchcane	0.24
Bare Ground	Bare Ground	31.53
<i>Burmannia capitata</i>	Southern bluethread	0.03
<i>Calamovilfa curtissii</i>	Curtiss' sandgrass	4.28
<i>Cliftonia monophylla</i>	Black titi	10.97
<i>Ctenium aromaticum</i>	Toothache grass	0.03
<i>Cyrilla racemiflora</i>	Titi	0.34
<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	Cypress witchgrass	0.58
<i>Dichanthelium portoricense</i>	Hemlock witchgrass	0.14
<i>Dichanthelium scabriusculum</i>	Woolly witchgrass	0.86
<i>Drosera capillaris</i>	Pink sundew	0.17
<i>Eriocaulon compressum</i>	Flattened pipewort	0.10
<i>Eriocaulon decangulare</i>	Tenangle pipewort	0.75
<i>Gaylussacia mosieri</i>	Woolly huckleberry	0.27
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort	0.10
<i>Ilex coriacea</i>	Large gallberry	3.12

Scientific Name	Common Name	Percent Cover Across Transect
<i>Ilex glabra</i>	Gallberry	0.14
<i>Kellochloa verrucosa</i>	Warty panicgrass	0.24
<i>Lycopodiella caroliniana</i>	Slender club-moss	1.44
<i>Magnolia virginiana</i>	Sweetbay	4.39
<i>Osmunda cinnamomea</i>	Cinnamon fern	0.14
<i>Pinus elliotii</i>	Slash pine	0.51
<i>Rhexia petiolata</i>	Fringed meadowbeauty	0.38
<i>Rhynchospora cephalantha</i>	Bunched beaksedge	0.07
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	3.02
<i>Rhynchospora ciliaris</i>	Fringed beaksedge	0.10
<i>Rhynchospora gracilentia</i>	Slender beaksedge	11.03
<i>Rhynchospora inundata</i>	Narrowfruit horned beaksedge	0.10
<i>Rhynchospora sp.</i>	Beaksedge	2.74
<i>Sabatia sp.</i>	Rosegentian	0.03
<i>Sarracenia flava</i>	Yellow pitcherplant	0.10
<i>Scleria reticularis</i>	Netted nutrush	0.75
<i>Smilax laurifolia</i>	Laurel greenbrier	14.50
<i>Sphagnum sp.</i>	Sphagnum moss	3.32
<i>Utricularia juncea</i>	Southern bladderwort	0.03
<i>Xyris brevifolia</i>	Shortleaf yellow-eyed grass	0.14
<i>Xyris sp.</i>	Yellow-eyed grass	0.10
		100.00

**Transect D2 (Polygon B; Hydric Pine Flatwoods Restoration)**

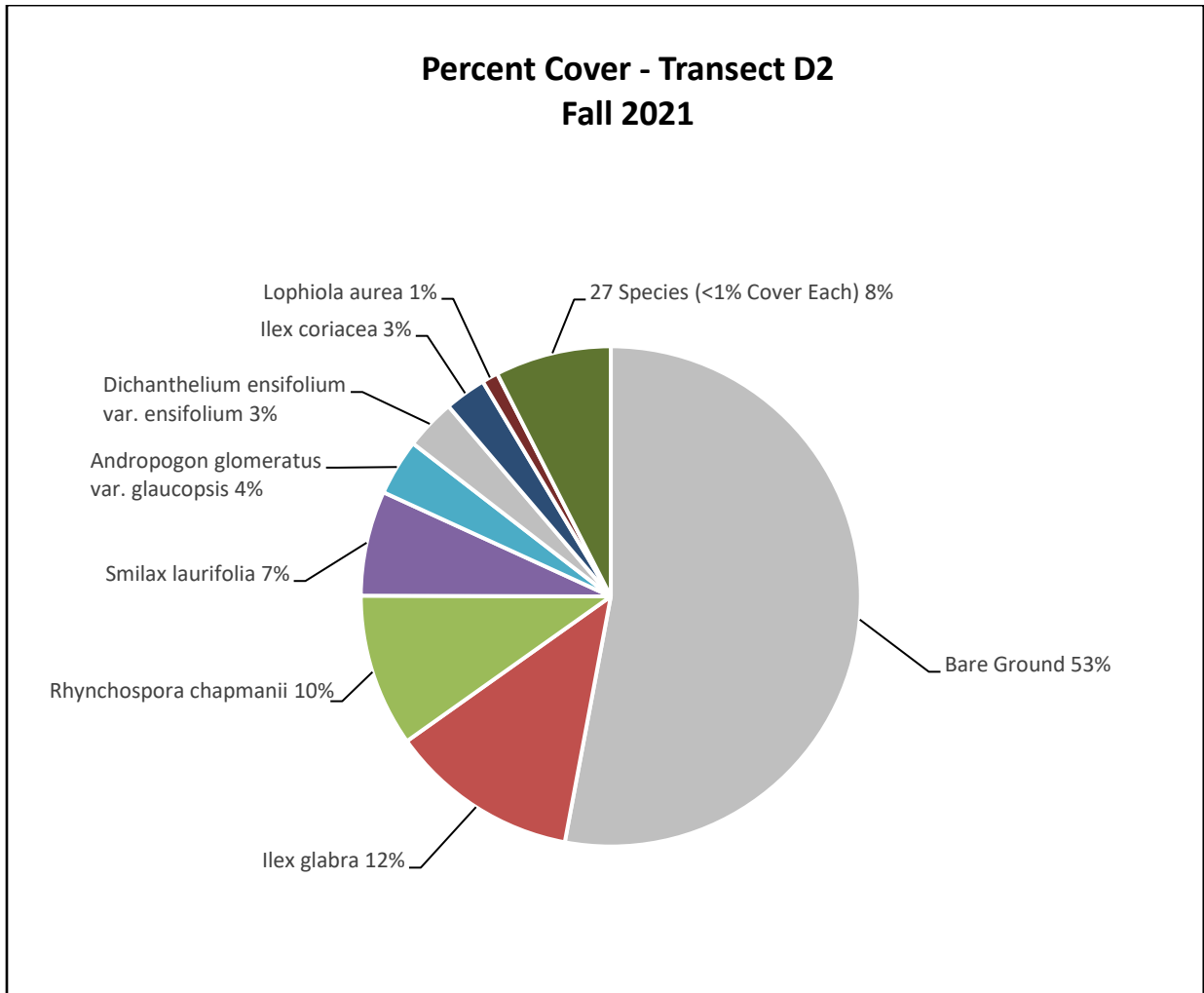


Table 9. Transect D2 (Fall 2021)

Scientific Name	Common Name	Percent Cover
<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	Purple bluestem	3.64
<i>Andropogon glomeratus</i> var. <i>glomeratus</i>	Bushy bluestem	0.33
Bare Ground	Bare Ground	52.95
<i>Clethra alnifolia</i>	Sweet pepperbush	0.10
<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	Cypress witchgrass	3.28
<i>Dichanthelium leucothrix</i>	Rough witchgrass	0.62
<i>Dichanthelium strigosum</i>	Roughhair witchgrass	0.10
<i>Eriocaulon decangulare</i>	Tenangle pipewort	0.72
<i>Gaylussacia mosieri</i>	Woolly huckleberry	0.23
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort	0.10
<i>Hypericum hypericoides</i>	St. Andrew's cross	0.10
<i>Ilex cassine</i> var. <i>myrtifolia</i>	Myrtle-leaved holly	0.26
<i>Ilex coriacea</i>	Large gallberry	2.69
<i>Ilex glabra</i>	Gallberry	12.23
<i>Kellochloa verrucosa</i>	Warty panicgrass	0.13
<i>Lachnanthes caroliana</i>	Carolina redroot	0.72
<i>Lophiola aurea</i>	Golden crest	1.05
<i>Morella cerifera</i>	Southern bayberry	0.75
<i>Oldenlandia uniflora</i>	Clustered mille grains	0.03
<i>Osmunda cinnamomea</i>	Cinnamon fern	0.10
<i>Pinus elliotii</i>	Slash pine	0.23
<i>Polygala lutea</i>	Orange milkwort	0.03
<i>Pteridium aquilinum</i>	Bracken	0.10



Scientific Name	Common Name	Percent Cover
<i>Rhexia alifanus</i>	Savannah meadowbeauty	0.13
<i>Rhexia petiolata</i>	Fringed meadowbeauty	0.26
<i>Rhynchospora baldwinii</i>	Baldwin's beaksedge	0.10
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	9.87
<i>Rhynchospora ciliaris</i>	Fringed beaksedge	0.52
<i>Scleria ciliata</i>	Fringed nutrush	0.30
<i>Scleria reticularis</i>	Netted nutrush	0.26
<i>Smilax glauca</i>	Cat greenbrier	0.72
<i>Smilax laurifolia</i>	Laurel greenbrier	6.79
<i>Sphagnum sp.</i>	Sphagnum moss	0.23
<i>Vaccinium corymbosum</i>	Highbush blueberry	0.23
<i>Xyris sp.</i>	Yellow-eyed grass	0.10
		<b>100.00</b>

## Panoramic Monitoring Photos

### Photo Point 1 (Polygon B—Hydric Pine Flatwoods Restoration)



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 1)



3/8/2018 (Bayport Mitigation, Photo Point 1)



9/18/2018 (Bayport Mitigation, Photo Point 1)



9/26/2019 (Bayport Mitigation, Photo Point 1)



10/30/2020 (Bayport Mitigation, Photo Point 1)



4/21/2021 (Bayport Mitigation, Photo Point 1)



9/23/2021 (Bayport Mitigation, Photo Point 1)



**Photo Point 2  
(Polygon B—Hydric Pine Flatwoods Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 2)



3/8/2018 (Bayport Mitigation, Photo Point 2)



9/18/2018 (Bayport Mitigation, Photo Point 2)



9/26/2019 (Bayport Mitigation, Photo Point 2)



10/30/2020 (Bayport Mitigation, Photo Point 2)



4/21/2021 (Bayport Mitigation, Photo Point 2)



9/23/2021 (Bayport Mitigation, Photo Point 2)



**Photo Point 3  
(Polygon D—Hydric Pine Flatwoods Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 3)



3/8/2018 (Bayport Mitigation, Photo Point 3)



9/18/2018 (Bayport Mitigation, Photo Point 3)



9/26/2019 (Bayport Mitigation, Photo Point 3)



10/30/2020 (Bayport Mitigation, Photo Point 3)





4/21/2021 (Bayport Mitigation, Photo Point 3)



9/23/2021 (Bayport Mitigation, Photo Point 3)



**Photo Point 4  
(Polygon D—Hydric Pine Flatwoods Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 4)



3/8/2018 (Bayport Mitigation, Photo Point 4)



9/18/2018 (Bayport Mitigation, Photo Point 4)



9/26/2019 (Bayport Mitigation, Photo Point 4)



10/30/2020 (Bayport Mitigation, Photo Point 4)





4/21/2021 (Bayport Mitigation, Photo Point 4)



9/23/2021 (Bayport Mitigation, Photo Point 4)



**Photo Point 5  
(Polygon A—Hydric Pine Flatwoods Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 5)



3/8/2018 (Bayport Mitigation, Photo Point 5)



9/18/2018 (Bayport Mitigation, Photo Point 5)



9/26/2019 (Bayport Mitigation, Photo Point 5)



10/30/2020 (Bayport Mitigation, Photo Point 5)





4/21/2021 (Bayport Mitigation, Photo Point 5)



9/23/2021 (Bayport Mitigation, Photo Point 5)



**Photo Point 6  
(Polygon A—Hydric Pine Flatwoods Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 6)



3/8/2018 (Bayport Mitigation, Photo Point 6)



9/18/2018 (Bayport Mitigation, Photo Point 6)



9/26/2019 (Bayport Mitigation, Photo Point 6)



10/30/2020 (Bayport Mitigation, Photo Point 6)





4/21/2021 (Bayport Mitigation, Photo Point 6)



9/23/2021 (Bayport Mitigation, Photo Point 6)



**Photo Point 7  
(Polygon C—Mixed Forested Wetlands w/Hydric Pine Flatwood Inclusions Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 7)



3/8/2018 (Bayport Mitigation, Photo Point 7)



9/18/2018 (Bayport Mitigation, Photo Point 7)



9/26/2019 (Bayport Mitigation, Photo Point 7)



10/30/2020 (Bayport Mitigation, Photo Point 7)





4/21/2021 (Bayport Mitigation, Photo Point 7)



9/23/2021 (Bayport Mitigation, Photo Point 7)



**Photo Point 8**  
**(Polygon C—Mixed Forested Wetlands w/Hydric Pine Flatwood Inclusions Restoration)**



8/28/2017 (Bayport Mitigation, Baseline Conditions, Photo Point 8)



3/8/2018 (Bayport Mitigation, Photo Point 8)



9/18/2018 (Bayport Mitigation, Photo Point 8)



9/26/2019 (Bayport Mitigation, Photo Point 8)



10/30/2020 (Bayport Mitigation, Photo Point 8)





4/21/2021 (Bayport Mitigation, Photo Point 8)



9/23/2021 (Bayport Mitigation, Photo Point 8)

## **Conclusions**

Mitigation and monitoring are being implemented per permit conditions of SAJ-1997-07427 (SP-SWA). Performance standards for tree densities, implementation of prescribed fire, monitoring, and invasive exotic plant species cover are being met. Shrub cover targets (<5% cover per mitigation polygon) were met by Spring 2018. However, because of resprouting, percent shrub cover now exceeds targets in three out of four restoration polygons, even with herbicide treatment in September 2019 and prescribed fire in April 2021. Additional herbicide treatments and prescribed fire will be implemented to return shrub cover to within performance standard targets.