

SACRED HEART MITIGATION

Fall 2019 Monitoring Report

USACE Permit No.: SAJ-1998-4720 IP-RVH

Permittee: Sacred Heart Hospital of Pensacola
C/o Mr. Patrick J. Madden – President
5151 north 9th Avenue
Pensacola, FL 32504

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

Dates of Inspection: 10/23/2019

Summary

This project (Sacred Heart Mitigation) compensates for impacts to jurisdictional wetlands associated with construction of the Sacred Heart Hospital near the intersection of US 98 and Mack Bayou Road in Walton County. It consists of restoring 82 acres of hydric pine flatwoods within the Devils Swamp area of the Northwest Florida Water Management District (NFWFMD) Choctawhatchee River Water Management Area. The offsite mitigation area is located approximately 15 miles east 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.

The mitigation area is divided into two management polygons. Mitigation activities implemented-to-date include 1) baseline monitoring (November 2017), 2) prescribed fire (February 2018), 3) repeat panoramic photography (March 2018, September 2018, September 2019), and 4) post-baseline quantitative vegetation monitoring (April 2018, March 2019, October 2019).

Exotic and invasive plant species are not present. Thinning of tree density to less than 200 trees per acre was delayed because of widespread damage associated with Hurricane Michael (October 2018) and the unavailability at that time of logging contractors; a contract was subsequently executed with thinning now scheduled to occur no later than March 2021.¹ Shrub cover was treated with herbicide in September 2019 with mixed results; monitoring in 2020 will determine if the shrub cover target of <5% is being met or if additional treatments are necessary.

¹ The executed contract allows for a 16-month window (ending March 2021) to conduct the thinning operation. To avoid rutting, timing of thinning is dependent upon site moisture conditions.

Performance Standards

Standard	Status
Reduce tree density to less than 200 trees per acre.	Pending (Scheduled no later than March 2021)
Reduce shrub cover to less than 5%.	Pending—Site treated with herbicide in September 2019 with mixed results. Monitoring in 2020 will determine if additional treatments are necessary.
Implement prescribed fire on a 2 to 3-year cycle.	Met—Prescribed fire implemented in February 2018.
Conduct annual monitoring for a minimum of five years.	Met—Annual monitoring is being conducted.
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 http://www.fleppc.org , less than 1%.	Met—Cover of Category I & II invasive exotic plant species less than 1%.

Quantitative Monitoring Methodology and Results

Percent vegetation cover was measured October 23, 2019 in 1 m² quadrats (10-foot intervals) along four randomly placed 150-foot transects (Figure 2). The percent cover for each species and bare ground was determined by adding all quadrat observations 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 percent cover of bare ground and plant species. Rooted shrub stem density was estimated by counting rooted stems within five 1 m² quadrats established at random.

Conclusions

Mitigation and monitoring are being implemented in accordance with the USACE-approved mitigation plan associated with SAJ-1998-4720 IP-RVH. Performance standards for implementation of prescribed fire, monitoring, and invasive exotic plant species cover are being met. Thinning of pines to less than 200 trees per acre, originally anticipated for 2019, is now scheduled for no later than March 2021. Shrub cover was treated with herbicides in September 2019 with mixed results. Monitoring in 2020 will determine if the performance standard of <5% shrub cover is being met or if additional treatments are necessary.

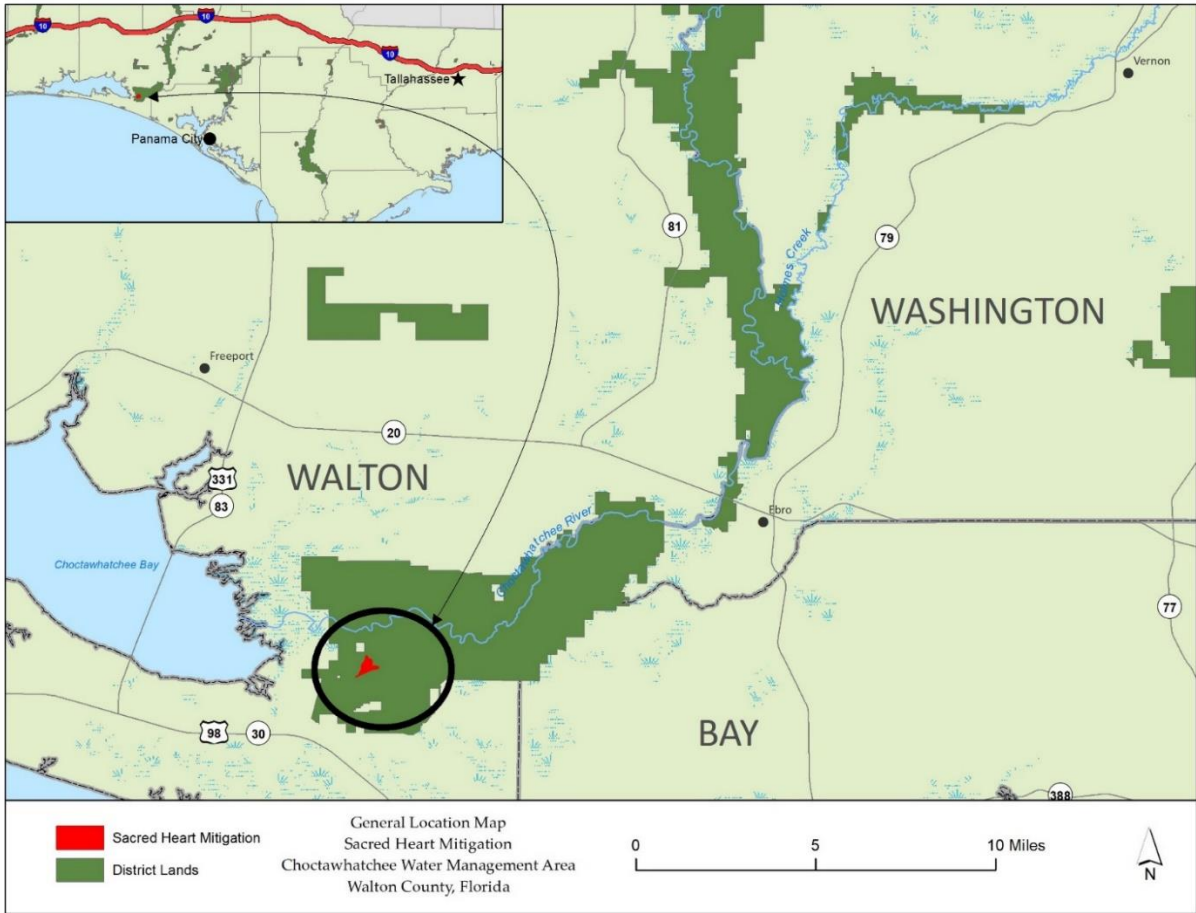


Figure 1. Location Map.

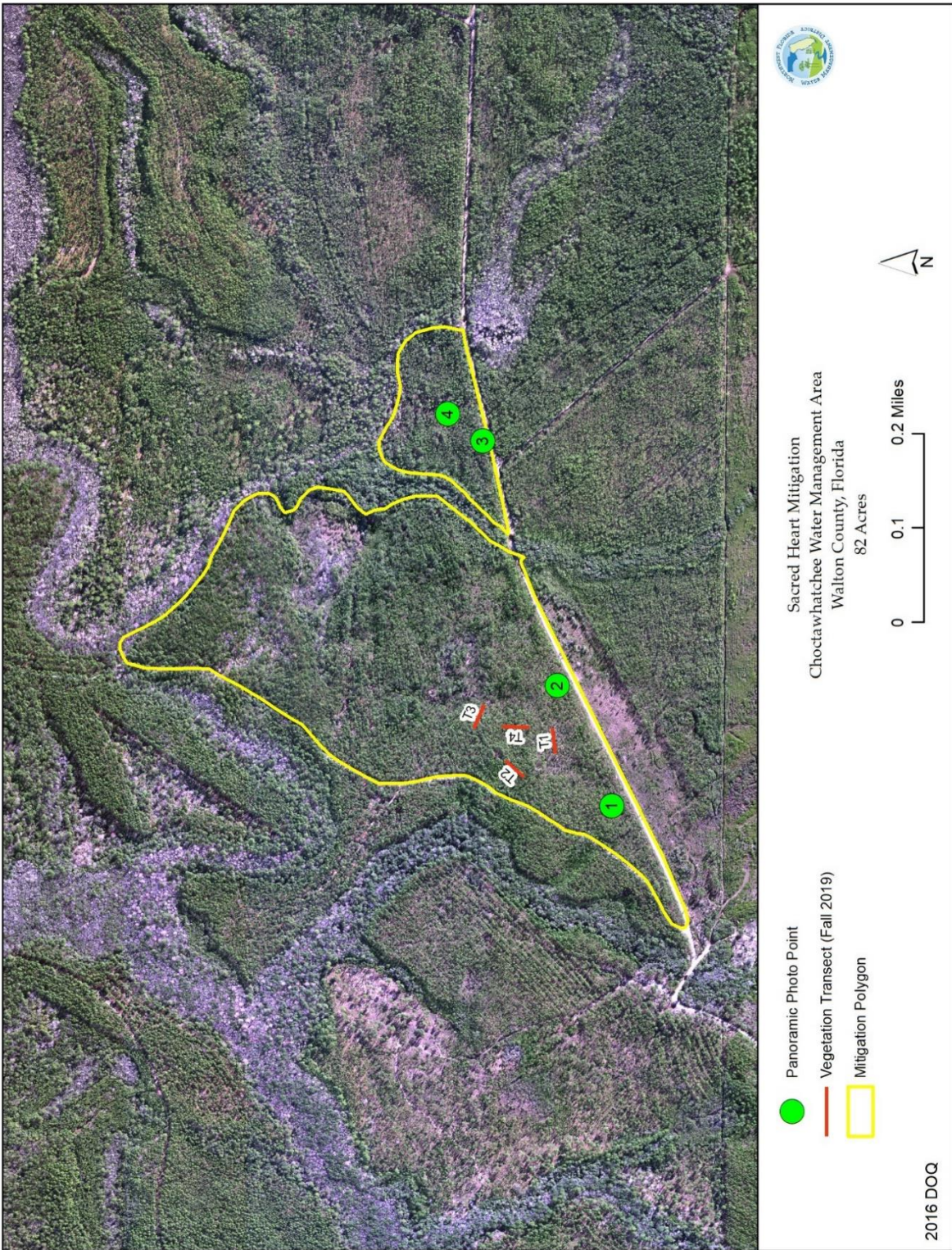


Figure 2. Fall 2019 Vegetation Transects

Transect 1 (Hydric Pine Flatwoods Restoration)

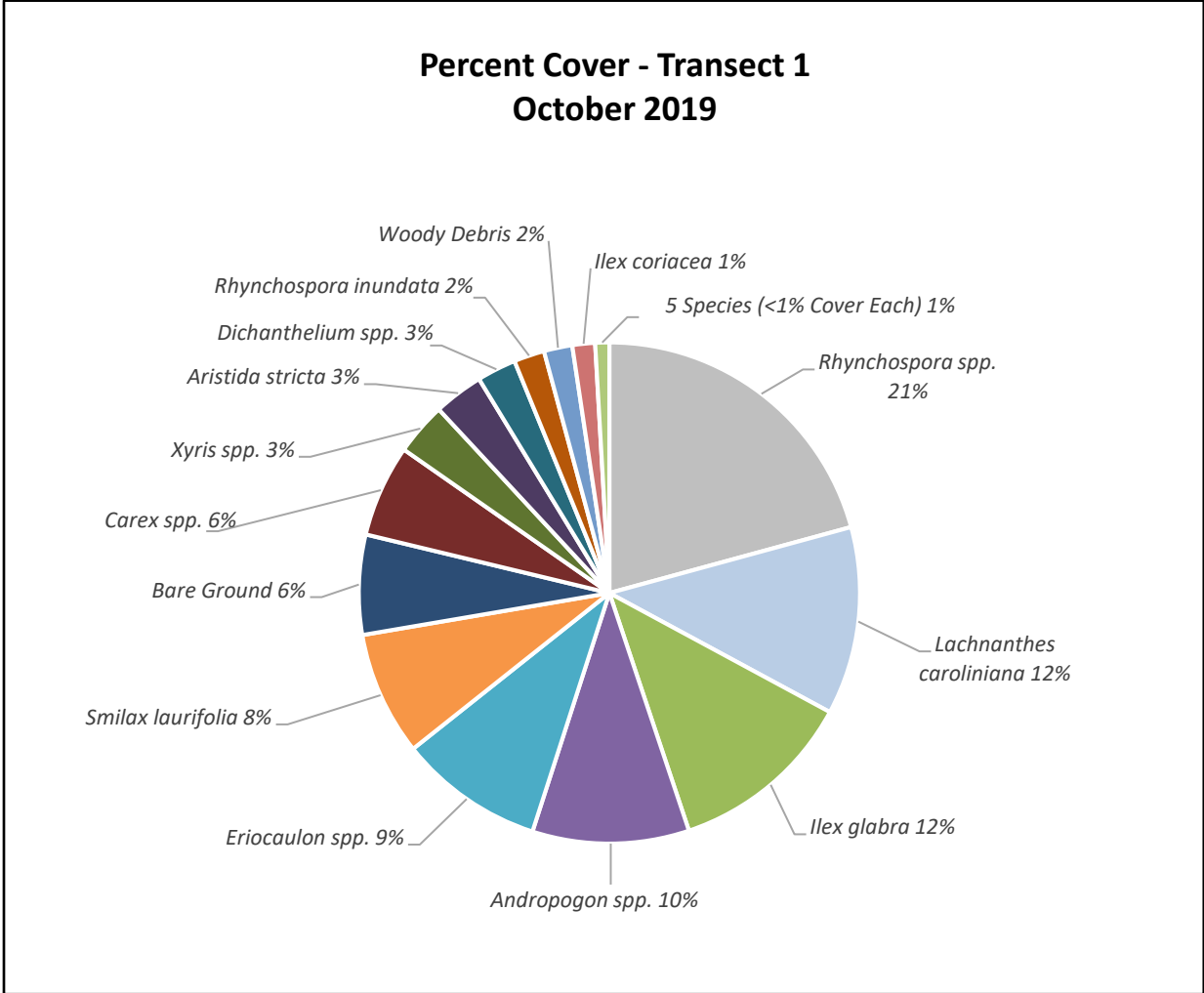


Figure 3. Sacred Heart Mitigation - Transect 1 (October 2019)

Table 1. Sacred Heart Mitigation - Transect 1 (October 2019)

Scientific Name	Common Name	Percent Cover Across Transect*
Rhynchospora spp.	Beaksedge	20.8
Lachnanthes caroliniana	Redroot	12.1
Ilex glabra	Gallberry	12.0
Andropogon spp.	Bluestem	10.1
Eriocaulon spp.	Pipewort	9.4
Smilax laurifolia	Laurel Greenbrier	8.0
Bare Ground	Bare Ground	6.4
Carex spp.	Sedge	5.9
Xyris spp.	Yelloweyed Grass	3.4
Aristida stricta	Wiregrass	3.2
Dichanthelium spp.	Witchgrass	2.5
Rhynchospora inundata	Narrowfruit Horned Beaksedge	2.0
Woody Debris	Woody Debris	1.8
Ilex coriacea	Sweet Gallberry	1.5
Ilex myrtifolia	Myrtle Dahoon	0.4
Lycopodiella spp.	Clubmoss	0.2
Pinus elliottii	Slash Pine	0.2
Dichanthelium scabriusculum	Woolly Witchgrass	0.1
Quercus pumila	Running Oak	<0.1
		100.0

*Because of rounding, percentages may not add up to exactly 100%.

Transect 2 (Hydric Pine Flatwoods Restoration)

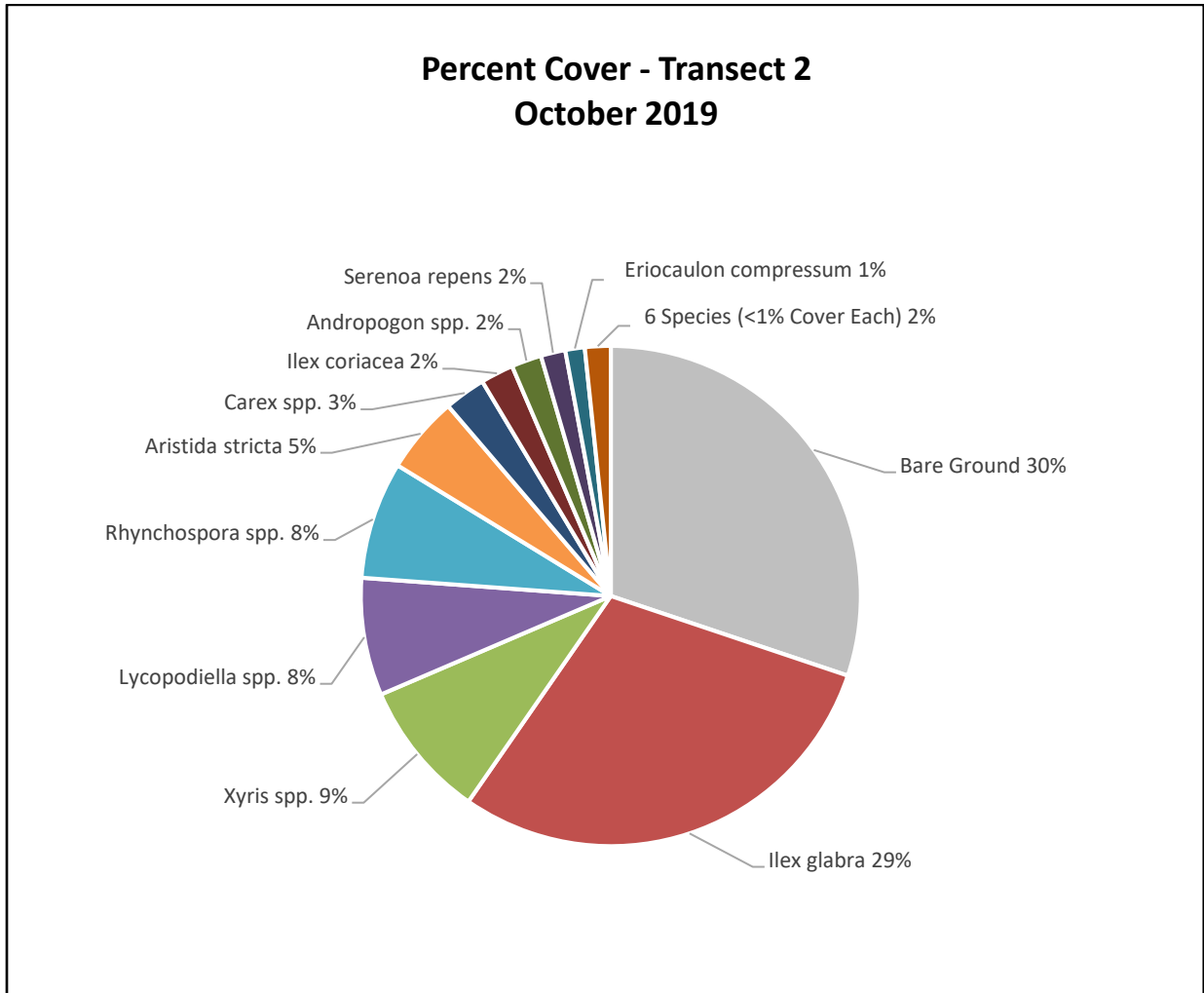


Figure 4. Sacred Heart Mitigation - Transect 2 (October 2019)

Table 2. Sacred Heart Mitigation - Transect 2 (October 2019)

Scientific Name	Common Name	Percent Cover Across Transect*
<i>Bare Ground</i>	Bare Ground	30.2
<i>Ilex glabra</i>	Gallberry	29.5
<i>Xyris spp.</i>	Yelloweyed Grass	8.9
<i>Lycopodiella spp.</i>	Clubmoss	7.6
<i>Rhynchospora spp.</i>	Beaksedge	7.6
<i>Aristida stricta</i>	Wiregrass	5.0
<i>Carex spp.</i>	Sedge	2.7
<i>Ilex coriacea</i>	Myrtle Dahoon	2.1
<i>Andropogon spp.</i>	Bluestem	1.9
<i>Serenoa repens</i>	Saw Palmetto	1.6
<i>Eriocaulon compressum</i>	Flattened Pipewort	1.3
<i>Smilax laurifolia</i>	Laurel Greenbrier	0.5
<i>Pinus elliotii</i>	Slash Pine	0.4
<i>Lachnanthes caroliniana</i>	Redroot	0.2
<i>Dichanthelium spp.</i>	Witchgrass	0.2
<i>Dichanthelium scabriusculum</i>	Woolly Witchgrass	0.2
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	0.1
		100.0

*Because of rounding, percent cover may not add up to precisely 100.0%.

Transect 3 (Hydric Pine Flatwoods Restoration)

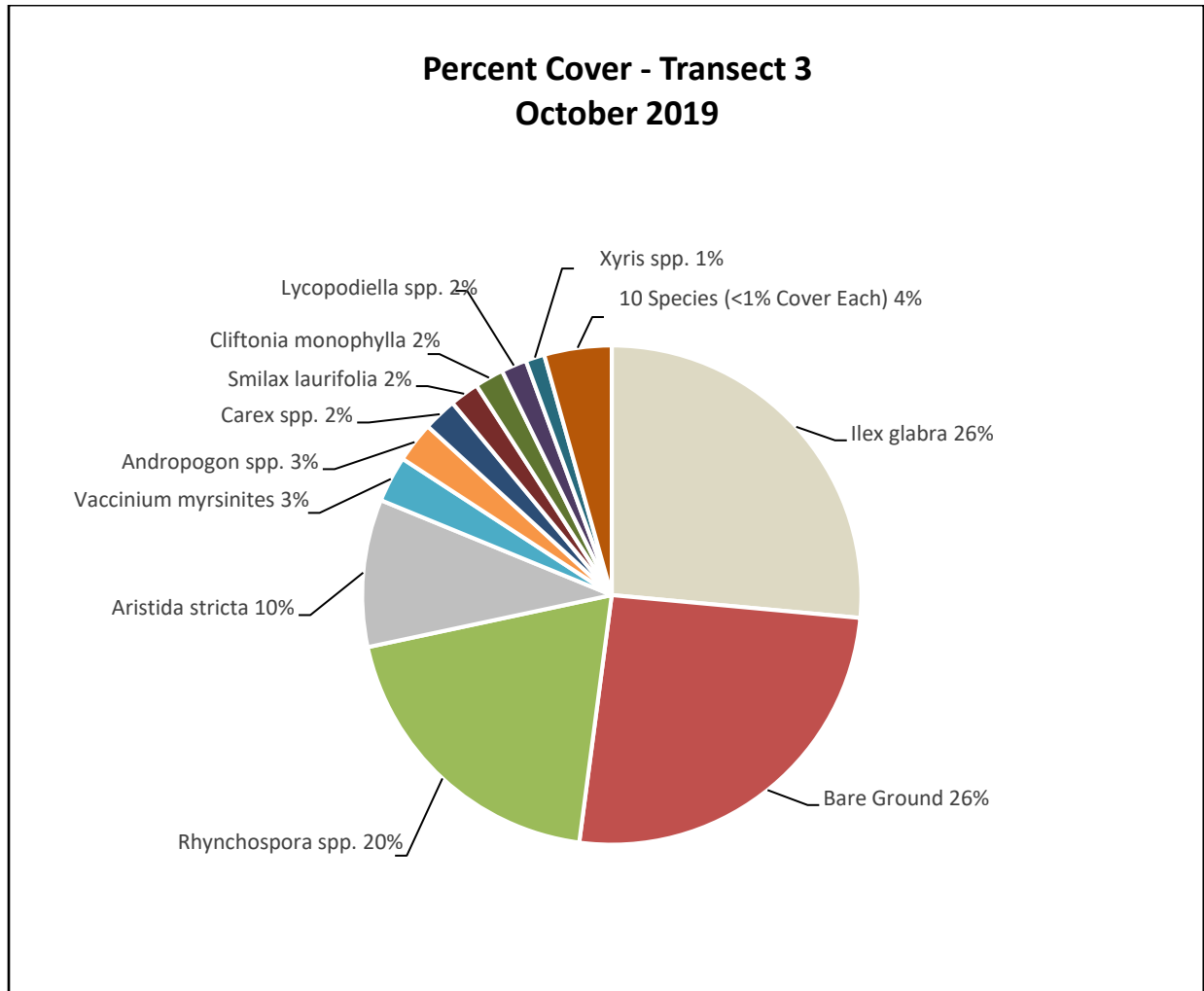


Figure 5. Sacred Heart Mitigation - Transect 3 (October 2019)

Table 3. Sacred Heart Mitigation - Transect 3 (October 2019)

Scientific Name	Common Name	Percent Cover Across Transect*
<i>Ilex glabra</i>	Gallberry	26.5
Bare Ground	Bare Ground	25.6
<i>Rhynchospora</i> spp.	Beaksedge	19.6
<i>Aristida stricta</i>	Wiregrass	9.6
<i>Vaccinium myrsinites</i>	Shiny Blueberry	3.0
<i>Andropogon</i> spp.	Bluestem	2.6
<i>Carex</i> spp.	Sedge	2.2
<i>Smilax laurifolia</i>	Laurel Greenbrier	1.9
<i>Cliftonia monophylla</i>	Black Titi	1.9
<i>Lycopodiella</i> spp.	Clubmoss	1.7
<i>Xyris</i> spp.	Yelloweyed Grass	1.2
<i>Serenoa repens</i>	Saw Palmetto	0.9
<i>Vaccinium darrowii</i>	Darrow's Blueberry	0.8
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	0.5
<i>Dichanthelium</i> spp.	Witchgrass	0.5
<i>Aristida</i> spp.	Threeawn	0.5
<i>Pinus elliottii</i>	Slash Pine	0.3
<i>Cyperus</i> spp.	Flatsedge	0.3
<i>Pieris phylllyreifolia</i>	Fetterbush	0.2
<i>Quercus pumila</i>	Running Oak	0.2
<i>Lachnanthes caroliniana</i>	Redroot	0.1
		100.0

*Because of rounding, percentages may not add up to exactly 100%.

Transect 4 (Hydric Pine Flatwoods Restoration)

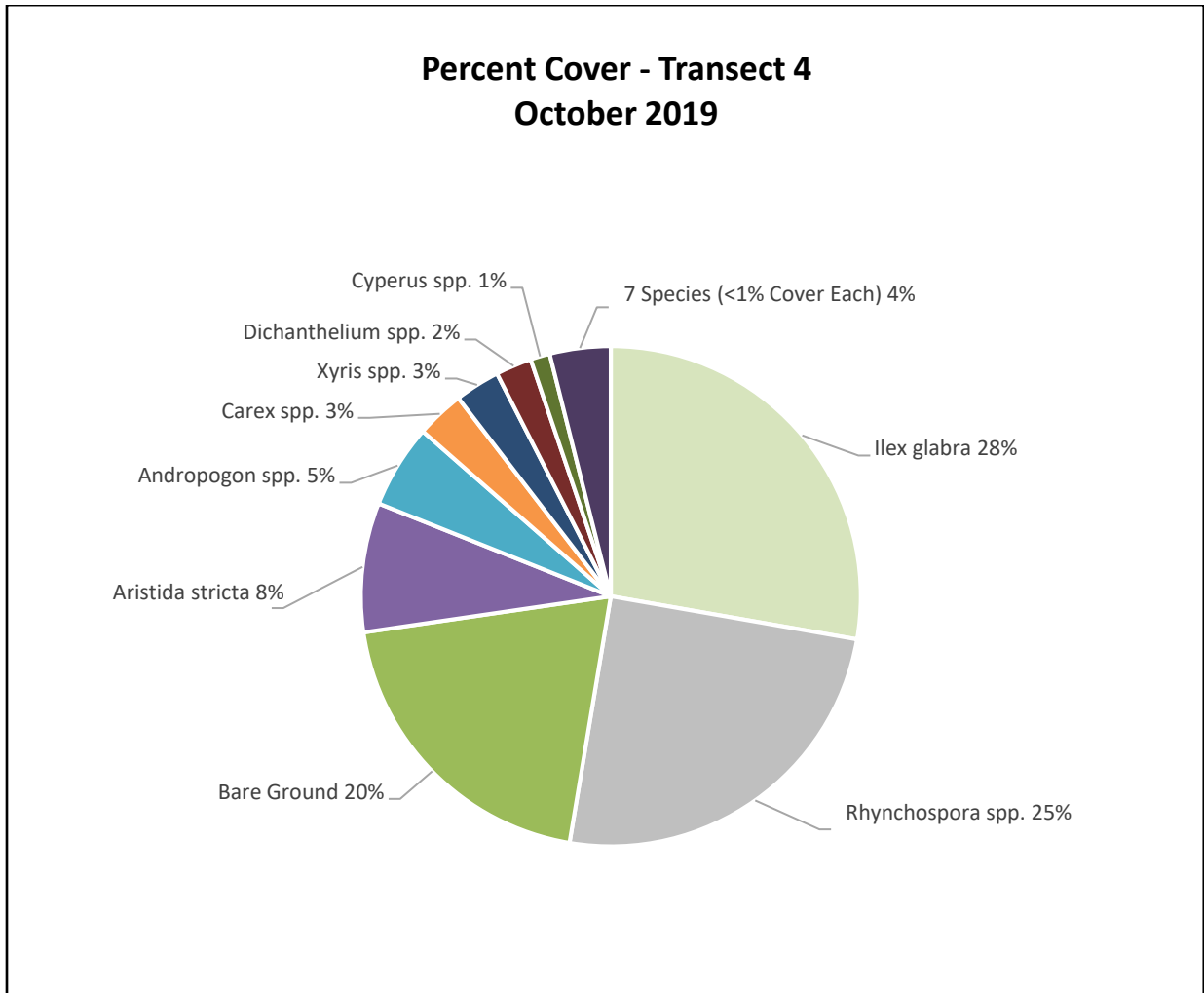


Figure 6. Sacred Heart Mitigation - Transect 4 (October 2019)

Table 4. Sacred Heart Mitigation - Transect 4 (October 2019)

Scientific Name	Common Name	Percent Cover Across Transect*
Ilex glabra	Gallberry	27.8
Rhynchospora spp.	Beaksedge	24.9
Bare Ground	Bare Ground	20.0
Aristida stricta	Wiregrass	8.4
Andropogon spp.	Bluestem	5.4
Carex spp.	Sedge	3.1
Xyris spp.	Yelloweyed Grass	2.9
Dichanthelium spp.	Witchgrass	2.3
Cyperus spp.	Flatsedge	1.3
Lachnanthes caroliniana	Redroot	0.9
Smilax laurifolia	Laurel Greenbrier	0.9
Dichanthelium scabriusculum	Woolly Witchgrass	0.6
Liquidambar styraciflua	Sweetgum	0.6
Pinus elliottii	Slash Pine	0.6
Gaylussacia dumosa	Dwarf Huckleberry	0.1
Lycopodiella spp.	Clubmoss	0.1
		100.0

*Because of rounding, percentages may not add up to exactly 100%.

Rooted Shrub Stem Density Quadrats

Shrub Quadrat	Shrub Stems per m ²
1	16
2	25
3	34
4	24
5	41
AVG Stems per m²	28

Panoramic Monitoring Photos

Photo Point 1 (Hydric Pine Flatwoods Restoration)



Sacred Heart Mitigation Photo Point 1: 3/8/2018



Sacred Heart Mitigation Photo Point 1: 9/18/2018



Sacred Heart Mitigation Photo Point 1: 9/26/2019

**Photo Point 2
(Hydric Pine Flatwoods Restoration)**



Sacred Heart Mitigation Photo Point 2: 3/8/2018



Sacred Heart Mitigation Photo Point 2: 9/18/2018



Sacred Heart Mitigation Photo Point 2: 9/26/2019

**Photo Point 3
(Hydric Pine Flatwoods Restoration)**



Sacred Heart Mitigation Photo Point 3: 3/8/2018



Sacred Heart Mitigation Photo Point 3: 9/18/2018



Sacred Heart Mitigation Photo Point 3: 9/26/2019

**Photo Point 4
(Hydric Pine Flatwoods Restoration)**



Sacred Heart Mitigation Photo Point 4: 3/8/2018



Sacred Heart Mitigation Photo Point 4: 9/18/2018



Sacred Heart Mitigation Photo Point 4: 9/26/2019