MONITORING YEAR 1
ANNUAL BUFFER REPORT
Final

SASSARIXA SWAMP MITIGATION SITE
Johnston County, NC
NCDEQ Contract No. 7425
DMS ID No. 100040
DWR Project No. 2018-0198
RFP No. 16-007279

Neuse River Basin
HUC 03020201

Data Collection Period: September 2021
Draft Submission Date: November 30, 2021
Final Submission Date: December 9, 2021

PREPARED FOR:

NC Department of Environmental Quality
Division of Mitigation Services
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SASSARIXA SWAMP MITIGATION SITE

Monitoring Year 1 Buffer Report

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APPENDICES

Section 1: PROJECT OVERVIEW

1.1 Project Summary

Wildlands Engineering, Inc. (Wildlands) implemented a full delivery project at the Sassarixa Swamp Mitigation Site (Site) for the North Carolina Department of Environmental Quality (NCDEQ) Division of Mitigation Services (DMS). A conservation easement comprised of 65.06 acres along Sassarixa Creek and seven unnamed tributaries to Sassarixa Creek, along with six unnamed tributaries to Black Creek in the Neuse River Basin are included in the project. A total of 55.26 acres (2,407,138 ft^2) of riparian buffer have been restored, enhanced, or preserved and are expected to generate 1,080,282.590 riparian buffer credits, with potential to convert some buffer credits to nutrient offset credits dependent on the need. The Site is located approximately six miles southwest of Smithfield and five miles north of Four Oaks (Figure 1). Project information and attributes are described in Table 4 located in Appendix 1. The Site drains to Holts Lake, which is a recreational lake classified as Nutrient Sensitive Waters (NSW). Holts Lake then drains to the Neuse River, which is a water supply for the City of Goldsboro.

Work at the Site was planned, designed, and constructed per the Sassarixa Swamp Mitigation Site – Riparian Buffer Mitigation Plan (Wildlands, 2020) and the Consolidated Buffer Mitigation Rule 15A NCAC 02B .0295 (effective November 1, 2015). The purpose of the riparian buffer restoration is to provide riparian buffer credits to compensate for buffer impacts within the Hydrologic Unit Code 03020201. The service area for the riparian buffer credits is depicted in Figure 2. The mitigation credits generated from the Site are included in Table 1 and illustrated in Figure 3 located in Appendix 1.

1.2 Project Goals and Objectives

The project includes several adjacent properties that have been owned and operated as a livestock farm by a single family since 1850, where livestock are continually rotated through all fields (with access to their associated streams). The western portion of the project includes Sassarixa Creek and seven unnamed tributaries to Sassarixa Creek (T1, T1A, T1B, T1C, T1D, T2, and T3) (Figure 2). The eastern portion of the site contains six unnamed tributaries to Black Creek (T4, T5, T5A, T5B, T5C, and T6). A review of historic aerials from 1950 to 2012, showed that onsite streams have existed in their approximate locations with very little change to riparian zones since 1950. Two alterations to the Site visible from aerial photography are the addition of the pond on T2 between 1964 and 1973, and the addition of the large pond below T5A, T5B, and T5C, between 1950 and 1961.

The Site is located in a new Targeted Local Watershed (TLW) that is not described in the 2010 Neuse River Basin Restoration Priorities (RBRP) Plan. The TLW was added in the 2015 Neuse 01 Cataloging Unit (CU) Update because there were more water quality issues than assets. The Site addresses the TLW stressors of agricultural land use/animal operations and the lack of protected riparian areas. The project will also address key CU wide restoration goals for the Neuse River 03020201 described in the RBRP (NC DWR 2009). Specific enhancements to water quality and ecological processes are outlined below:

- Decrease nutrient levels - Nutrient input will be decreased by filtering runoff from the agricultural fields through restored native buffer zones. The off-site nutrient input will also be absorbed on-site by dispersing flood flows through native vegetation, thereby reducing nutrient inputs to waters of the Neuse River Basin.
- Exclude cattle from project streams. - Install fencing around project areas adjacent to cattle pastures.
- Decrease water temperature and increase dissolved oxygen concentrations - Establishment and maintenance of riparian buffers will create additional long-term shading of the channel flow to reduce thermal pollution.

- Restore and enhance native floodplain vegetation - Plant native tree species in riparian zone where currently insufficient.
- Permanently protect the Site from harmful uses - Establish a conservation easement on the Site. Protect aquatic habitat; protecting water supply waters.

The 65.06-acre Site is protected with a permanent conservation easement. Of the 65.06 acres, Neuse riparian buffer credits were generated by restoring 10.03 acres, enhancing 34.41 acres, and preserving 10.82. No buffer credit will be generated from the remaining 9.80 acres. In general, riparian buffer restoration area widths on streams extend out to 50 feet from top of bank on each side of the stream channel. Figure 3 and Table 1 in Appendix 1 detail the buffer credit generation.

1.3 Monitoring Year 1 Data Assessment

The Mitigation Plan (Wildlands, 2019) was submitted and accepted by DMS in November 2019. Construction activities by Land Mechanic Designs, Inc. was completed in January 2021, while tree planting by Bruton Natural Systems, Inc. was completed in March 2021. The baseline as-built survey was completed by Kee Mapping and Surveying in February 2021. Refer to Appendix 1 for detailed project activity, history, contact information, and watershed/site background information.

Vegetative performance for buffer restoration areas will be in accordance with 15A NCAC 02B .0295(n)(2)(B), and (n)(4) (effective November 1, 2015). To meet success criteria, areas generating buffer mitigation credits shall include a minimum of four native hardwood tree species, where no one species is greater than 50 percent of stems, and shall have a survival of at least 260 planted stems per acre at the end of the required five-year monitoring period. For monitoring to be completed and buffer credit to be awarded, NCDWR must provide written approval of successful revegetation of buffer restoration areas. Year 1 monitoring (MY1) was conducted to assess the condition of the vegetation in September 2021.

1.3.1 Vegetative Assessment

The quantity of monitoring vegetation plots was determined in accordance with the Wilmington District Stream and Wetland Compensatory Mitigation Update (NCIRT, 2016) such that at least 2 percent of the Site is encompassed in monitoring plots. A total of 10 vegetation plots (each 100 square meters) were established within the conservation easement boundaries. The plot corners have been marked and are recoverable either through field identification or with the use of a GPS unit. Reference photographs are taken at the origin looking diagonally across the plot to the opposite corner on an annual basis. Trees will be marked annually with flagging tape. Species composition, vigor, height, density, and survival rates will be evaluated by plot on an annual basis. The extent of invasive species coverage will also be monitored and controlled as necessary.

The MY1 vegetation monitoring was completed in September 2021, resulting in an average survival of 506 planted stems per acre. The Site is exceeding the final requirement of 260 stems per acre, with 9 of the 10 plots individually exceeding this requirement. The planted stem mortality was approximately 11% of the baseline stem count (566 stems per acre) in March 2021. There is an average of 12 stems per plot. Vegetation plot 2 is not on track to meet the final success requirement with 243 stems per acre. A more thorough visual assessment will take place in the area near vegetation plot 2 in Spring 2022 to assess the survivability of the planted trees and resprouts. Refer to Appendix 2 for the vegetation condition assessment table, monitoring plan view maps, vegetation plot and overview photographs. Appendix 3 contains vegetation plot data and vegetation plot performance summary table.

1.3.2 Vegetation Areas of Concern

Before construction, Chinese privet (*Ligustrum sinense*) was treated along Sasssarixa Creek during the winter of 2020/2021 using a combination of methods including foliar and cut stump applications. Out of the 27.00 acres that was originally treated, resprouts did emerge along the lower half of Sassarixa Creek totaling 11.99 acres (Figure 1a). A follow up treatment will occur during MY2 to treat the resprouts.

Several cattle were observed within the Site throughout July 2021. Cattle had access to 11.39 acres of the Site between the Sassarixa Creek ford crossing to the top of T1 (Figure 1a). The cattle were entering the Site through the high tensile fence along the Sassarixa Creek ford crossing. The landowner has agreed to keep the outside gates closed unless supervising the cattle crossing Sassarixa Creek. No cattle have been seen in the easement since July 2021, indicating the easement encroachment has been resolved. No major damage occurred to the Site due to cattle encroachment, except for several dented easement signs

1.4 Monitoring Year 1 Summary

Overall, the Site has exceeded the required vegetation success criteria for MY1. Vegetation plot 2 is not on track to meet the final success criteria. A visual assessment will take place in Spring 2022 to assess survivability and resprouts. The rest of the Site's vegetation layer established quickly and is greatly reducing the amount of nutrients and sediment from entering the project streams. A follow up treatment of the Chinese privet resprouts along Sassarixa Creek will occur during MY2. Cattle were accessing the easement through the Sassarixa Creek ford crossing, but since communicating with the landowner, no cattle have been observed in the easement since July 2021.

Summary information/data related to the performance of various project and monitoring elements can be found in the tables and figures in the report appendices. Narrative background and supporting information, formerly found in these reports, can be found in the Mitigation Plan (Wildlands, 2020) available on DMS's website. All raw data supporting the tables and figures in the appendices are available from DMS upon request.

Section 2: METHODOLOGY

Planted woody vegetation was monitored in accordance with the guidelines and procedures developed by the Wilmington District Stream and Wetland Compensatory Mitigation Update (NCIRT, 2016). A total of ten fixed 100 square meter vegetation monitoring quadrants were established within the Site conservation easement area.

Section 3: REFERENCES

Breeding, R. 2010. Neuse River Basin Restoration Priorities. North Carolina Ecosystem Enhancement Program.

Natural Resources Conservation Service (NRCS), 2011. Web Soil Survey.

North Carolina Department of Environmental Quality, Division of Mitigation Services (NCDMS). 2017. Riparian Buffer and Nutrient Offset Buffer Baseline and Annual Monitoring Report Template version 2.0

North Carolina Department of Environmental Quality, Division of Water Resources (NCDWR). 2000. 15A NCAC 02B .0233 Neuse River Basin: Nutrient Sensitive Waters Management Strategy: Protection and Maintenance of Existing Riparian Buffers.

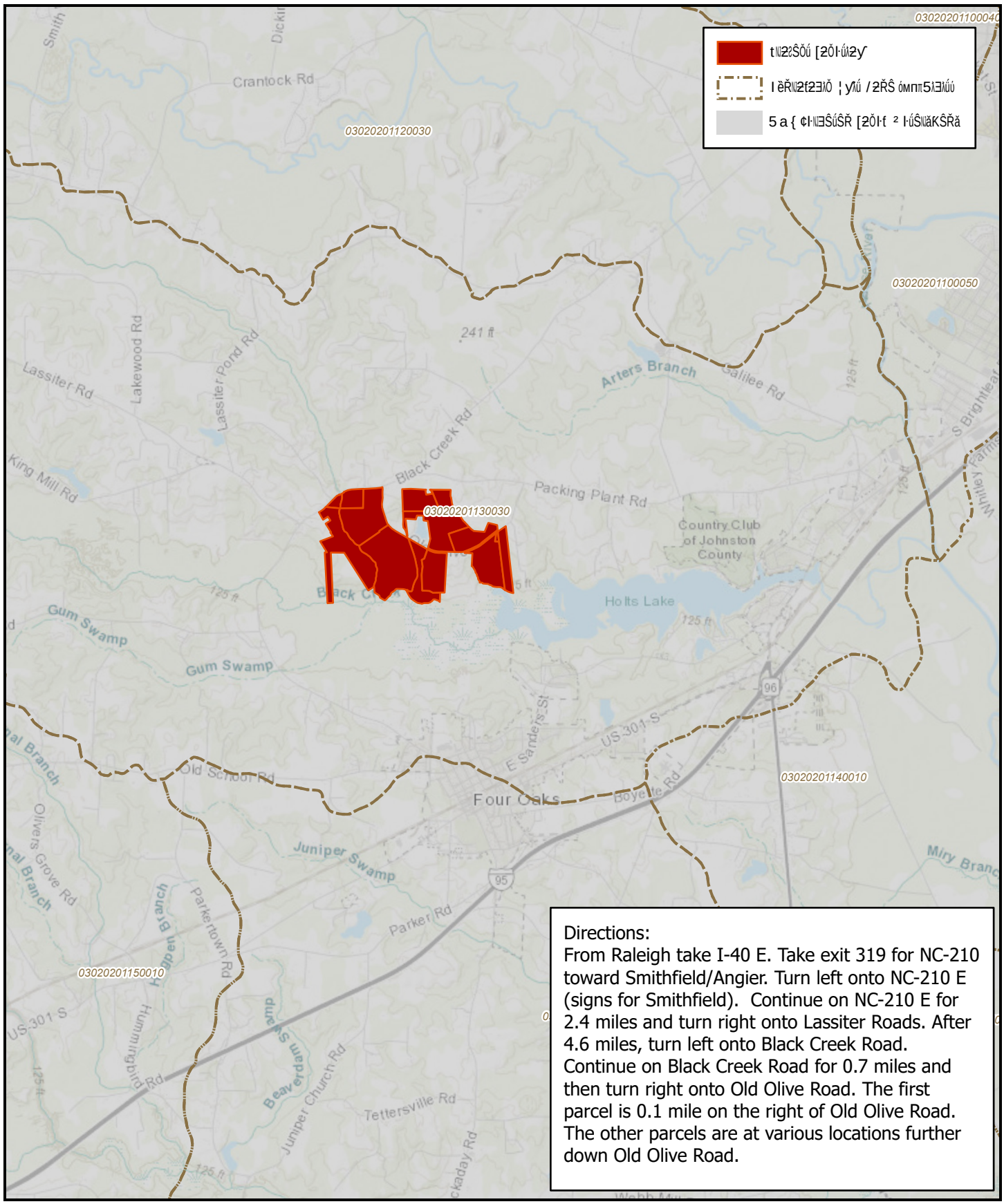
North Carolina Department of Environmental Quality, Division of Water Resources (NCDWR). 2015. 15A NCAC 02B .0295 Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers.

North Carolina Department of Environmental Quality, Division of Water Resources (NCDWR). 2011. Surface Water Classifications.

North Carolina Interagency Review Team (NCIRT). 2016. Wilmington District Stream and Wetland Compensatory Mitigation Update.

Wildlands Engineering, Inc. (2019). Sassarixa Swamp Mitigation Site – Riparian Buffer Mitigation Plan. North Carolina Department of Environmental Quality, Division of Mitigation Services (NCDMS), Raleigh, NC.

APPENDIX 1. GENERAL FIGURES AND TABLES



Directions:
From Raleigh take I-40 E. Take exit 319 for NC-210 toward Smithfield/Angier. Turn left onto NC-210 E (signs for Smithfield). Continue on NC-210 E for 2.4 miles and turn right onto Lassiter Roads. After 4.6 miles, turn left onto Black Creek Road. Continue on Black Creek Road for 0.7 miles and then turn right onto Old Olive Road. The first parcel is 0.1 mile on the right of Old Olive Road. The other parcels are at various locations further down Old Olive Road.

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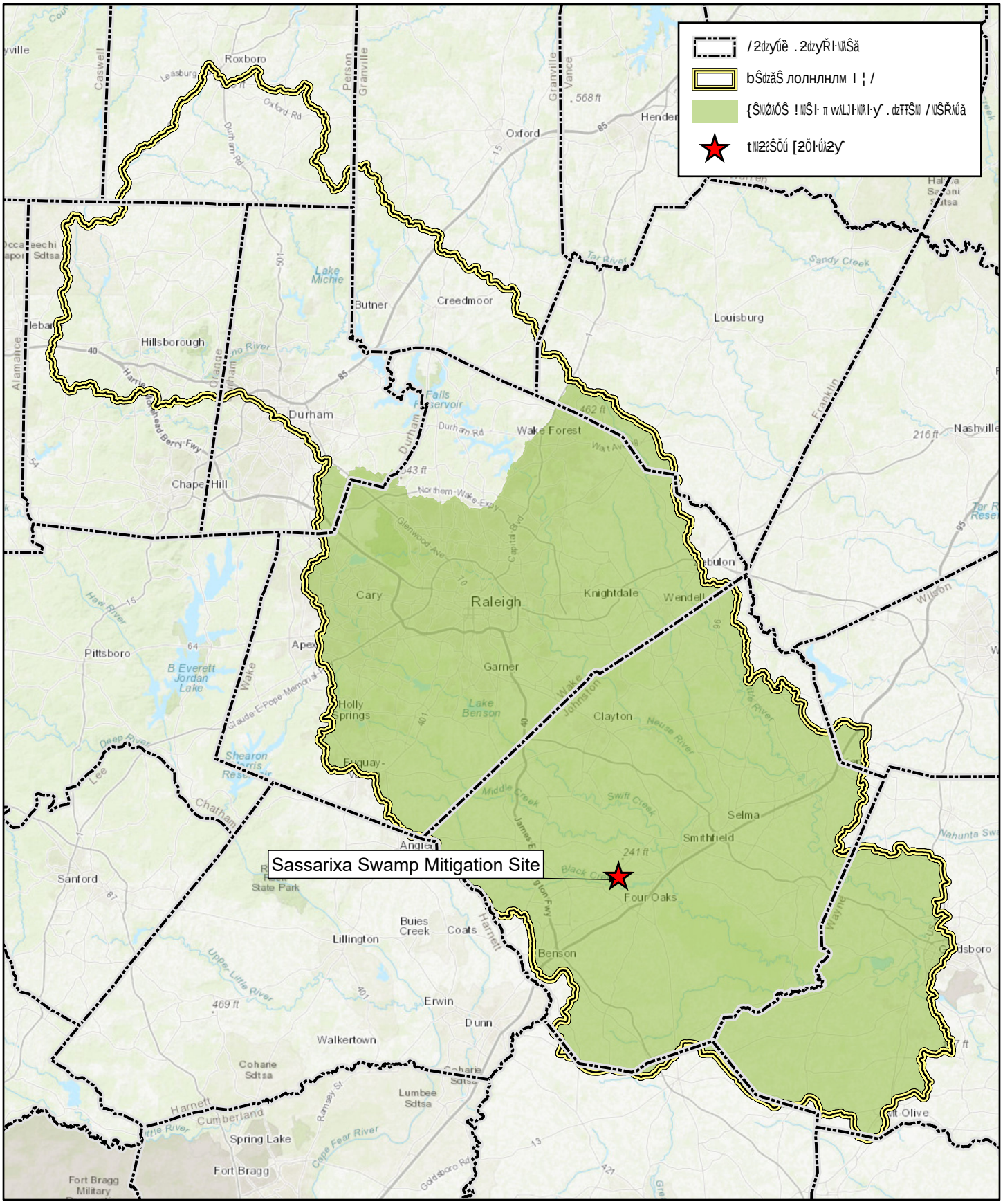
Johnston County, NC



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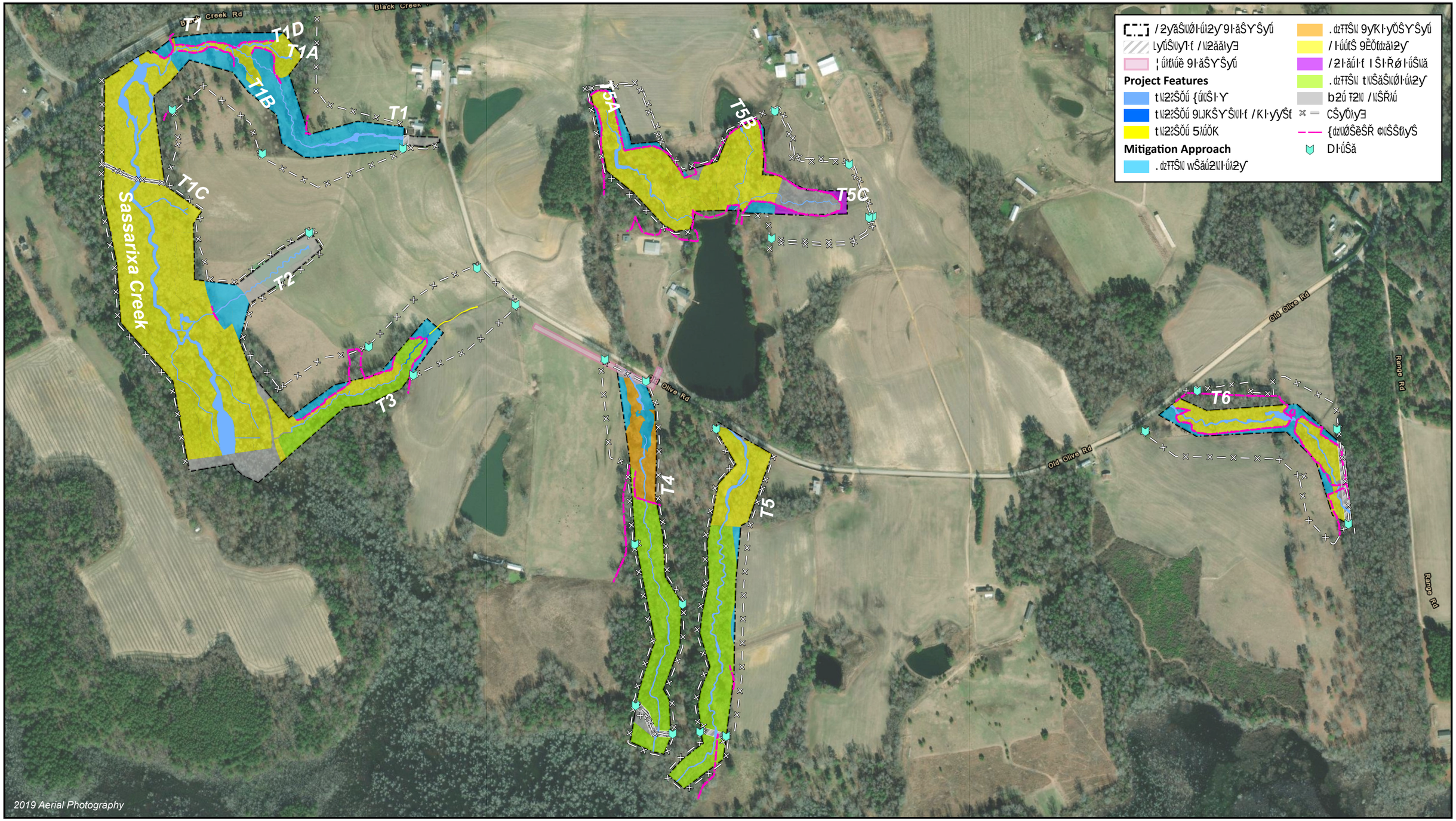

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Johnston County, NC

Table 1a. Mitigation Credits

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Neuse 03020201 - Outside Falls Lake	**Project Area**
#N/A	**N Credit Conversion Ratio (ft²/pound)**
#N/A	**P Credit Conversion Ratio (ft²/pound)**

Credit Type	Location	Subject? (enter NO if ephemeral or ditch [1])	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (ft²)	Total (Creditable) Area of Buffer Mitigation (ft²)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Convertible to Riparian Buffer?	Riparian Buffer Credits	Convertible to Nutrient Offset?	Delivered Nutrient Offset: N (lbs)	Delivered Nutrient Offset: P (lbs)
Buffer	Rural	Yes	I / P	Restoration	0-50	T4	3,667	3,667	1	100%	1.00000	Yes	3,667.000	No	—	—
Buffer	Rural	Yes	I / P	Restoration	0-100	T1, T1A, T1B, T2, T4, T5, T5A, T5B, T6	356,716	356,716	1	100%	1.00000	Yes	356,716.000	Yes	18,613.918	—
Buffer	Rural	Yes	I / P	Restoration	101-200	T2, T4, T5A, T5B	48,375	48,375	1	33%	3.03030	Yes	15,963.766	Yes	2,524.272	—
Buffer	Rural	No	Ephemeral	Restoration	0-100	T3	15,114	15,114	1	100%	1.00000	Yes	15,114.000	Yes	788.669	—
Buffer	Rural	Yes	Coastal Headwater	Restoration	0-100	T5C	13,073	13,073	1	100%	1.00000	Yes	13,073.000	No	—	—
Buffer	Rural	Yes	I / P	Enhancement	0-50	T4	217	217	2	100%	2.00000	Yes	108.500	Yes	11.323	—
Buffer	Rural	Yes	I / P	Enhancement	0-100	T4	59,812	59,812	2	100%	2.00000	Yes	29,906.000	Yes	3,121.070	—
Buffer	Rural	Yes	I / P	Enhancement	101-200	T4	3,129	3,129	2	33%	6.06061	Yes	516.285	Yes	163.275	—
Buffer	Rural	Yes	I / P	Enhancement via Cattle Exclusion	20-29	Sassarixa Creek, T5	735	735	2	75%	2.66667	Yes	275.625	No	—	—
Buffer	Rural	Yes	I / P	Enhancement via Cattle Exclusion	0-50	Sassarixa Creek, T5, T6	6,000	6,000	2	100%	2.00000	Yes	3,000.000	No	—	—
Buffer	Rural	Yes	I / P	Enhancement via Cattle Exclusion	0-100	Sassarixa Creek, T1, T1A, T1B, T1C, T2, T3, T5, T5A, T5B, T6	1,070,780	1,070,780	2	100%	2.00000	Yes	535,390.000	No	—	—
Buffer	Rural	Yes	I / P	Enhancement via Cattle Exclusion	101-200	Sassarixa Creek, T1A, T2, T3, T5, T5A, T5C	358,197	358,197	2	33%	6.06061	Yes	59,102.467	No	—	—
						Totals (ft2):	**1,935,815**	**1,935,815**					**1,032,832.642**		**25,222.527**	**—**
						Total Buffer (ft2):	**1,935,815**	**1,935,815**								
						Total Nutrient Offset (ft2):	**0**	**N/A**								

Total Ephemeral Area (ft²) for Credit:	**20,358**	**20,358**	
Total Eligible Ephemeral Area (ft²):	**601,785**	**0.8%**	**Ephemeral Reaches as % TABM**
Total Eligible for Preservation (ft²):	**645,272**	**18.3%**	**Preservation as % TABM**

Enter Preservation Credits Below

Credit Type	Location	Subject?	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (sf)	Total (Creditable) Area for Buffer Mitigation (ft²)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Riparian Buffer Credits
Buffer	Rural	Yes	I / P	Preservation	20-29	T4	750	750	10	75%	13.33333	56.250
	Rural	Yes	I / P		0-50	T4, T5	1,847	1,847	10	100%	10.00000	184.700
	Rural	Yes	I / P		0-100	T3, T4, T5	460,676	460,676	10	100%	10.00000	46,067.600
	Rural	Yes	I / P		101-200	T4	2,806	2,806	10	33%	30.30303	92.598
	Rural	No	Ephemeral		0-100	T3	5,244	5,244	5	100%	5.00000	1,048.800
						Preservation Area Subtotals (ft²):	**471,323**	**471,323**				

Table 1b. Total Area of Buffer and Nutrient Offset Mitigation

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

TOTAL AREA OF BUFFER MITIGATION (TABM)			
Mitigation Totals		**Square Feet**	**Credits**
Restoration:		436,945	404,533.766
Enhancement:		1,498,870	628,298.876
Preservation:		471,323	47,449.948
Total Riparian Buffer:		2,407,138	1,080,282.590
TOTAL NUTRIENT OFFSET MITIGATION			
Mitigation Totals		**Square Feet**	**Credits**
Nutrient Offset:	**Nitrogen:**	0	0.000
	Phosphorus:		0.000

Table 2. Project Activity and Reporting History

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Activity or Deliverable	Data Collection Complete	Task Completion or Deliverable Submission
Project Instituted	NA	January 2018
Mitigation Plan Approved	November 2019	November 2019
Construction (Grading) Completed	NA	January 2021
Planting Completed	NA	March 2021
Baseline Monitoring Document (Year 0)	March 2021	July 2021
Easement Encroachment		July 2021
Year 1 Monitoring	September 2021	December 2021
Year 2 Monitoring	2022	December 2022
Year 3 Monitoring	2023	December 2023
Year 4 Monitoring	2024	December 2024
Year 5 Monitoring	2025	December 2025

Table 3. Project Contact Table

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Designer Angela Allen, PE	**Wildlands Engineering, Inc.** 312 West Millbrook Road, Suite 225 Raleigh, NC 27609 919.851.9986
Construction Contractor	**Land Mechanic Designs, Inc.** 126 Circle G Lane Willow Spring, NC 27592
Monitoring Performers Monitoring, POC	**Wildlands Engineering, Inc.** Jason Lorch 919.851.9986

Table 4. Project Information and Attributes

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Project Information	
Project Name	Sassarixa Swamp Mitigation Site
County	Johnston County
Project Coordinates (latitude and longitude)	35° 28’ 19.75” N, 78° 26’ 9.60” W
Project Area (acres)	65.06
Planted Acreage (acres of woody stems planted)	13.03
Project Watershed Summary Information	
Physiographic Province	Rolling Coastal Plains
River Basin	Neuse River
USGS Hydrologic Unit 8-digit	03020201
USGS Hydrologic Unit 14-digit	03020201130030
DWR Sub-basin	03-04-04
Project Drainiage Area (acres)	5,024
Project Drainage Area Percentage of Impervious Area	0.9%
CGIA Land Use Classification	66% agriculture, 27% forested, 7% developed

Table 5. Adjacent Forested Areas Existing Tree and Shrub Species

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Common Name	Scientific Name	Wetland Indicator Status
Red Maple	*Acer rubrum*	FAC
Sweet Gum	*Liquidambar styraciflua*	FAC
Sycamore	*Platanus occidentalis*	FACW
Ironwood	*Carpinus caroliniana*	FAC
Water Oak	*Quercus nigra*	FAC
Willow Oak	*Quercus phellos*	FACW
Black Willow	*Salix nigra*	OBL
Tulip Poplar	*Lirodendron tulipifera*	FACU

Table 6. Planted Tree Species

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

Common Name	Scientific Name	Number Planted	% of Total
Willow Oak	*Quercus phellos*	1,379	14.3%
Sycamore	*Platanus occidentalis*	1,907	19.8%
River Birch	*Betula nigra*	1,907	19.8%
Water Oak	*Quercus nigra*	551	5.7%
Swamp Chestnut Oak	*Quercus michauxii*	1,396	14.5%
Eastern Cottonwood	*Populus deltoides*	540	5.6%
Box Elder	*Acer negundo*	1,350	14.0%
Sweetbay Magnolia	*Magnolia virginiana*	463	4.8%
Cherrybark Oak	*Quercus pagoda*	66	0.7%
American Elm	*Ulmus alata*	33	0.3%
Black Willow	*Salix nigra*	55	0.6%

APPENDIX 2. VISUAL ASSESSMENT DATA

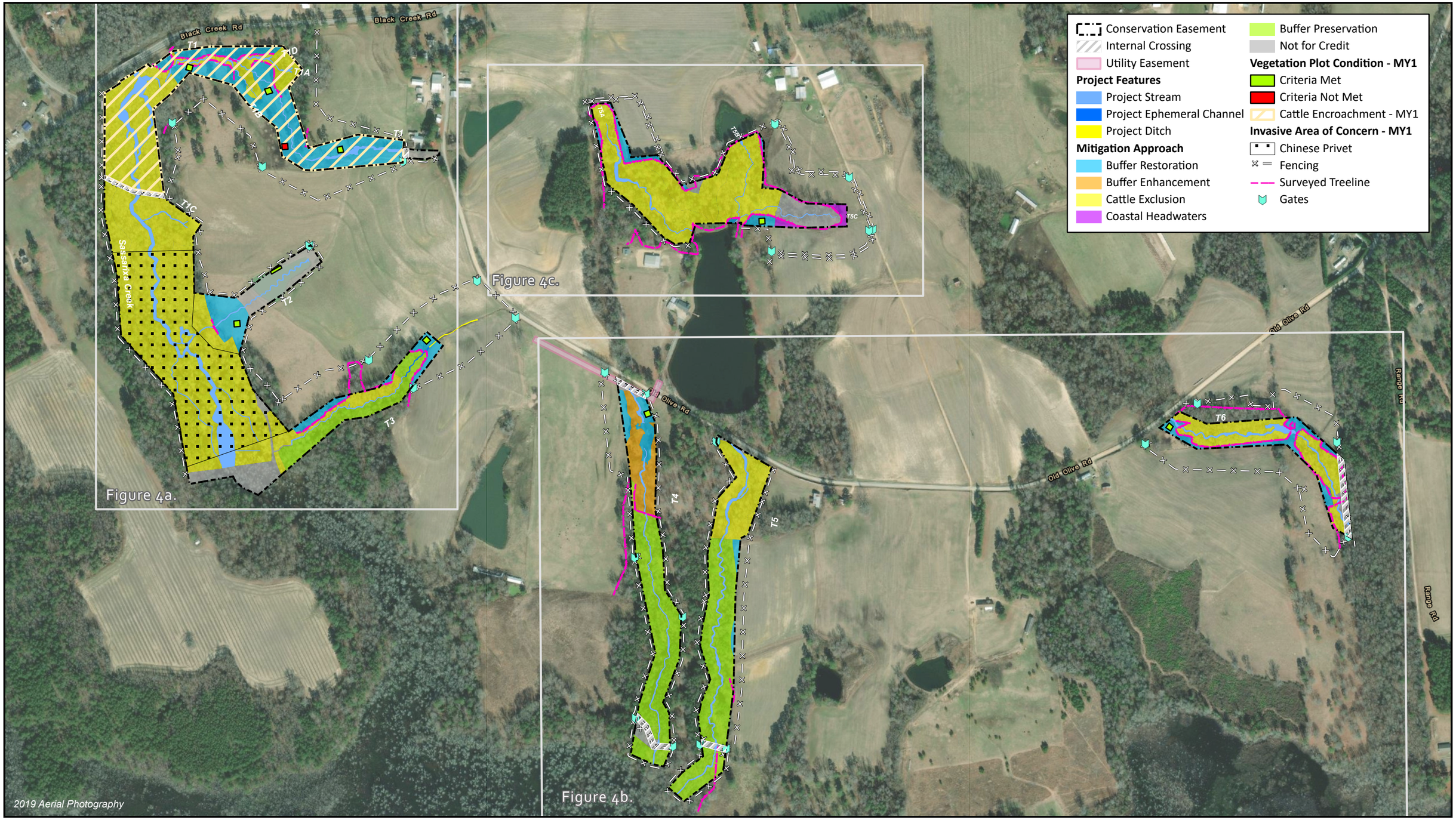

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Figure 4. Monitoring Plan View Map Key
Sassarixa Swamp Mitigation Site
Monitoring Year 1 - 2021
Neuse River Basin (03020201)

Johnston County, NC

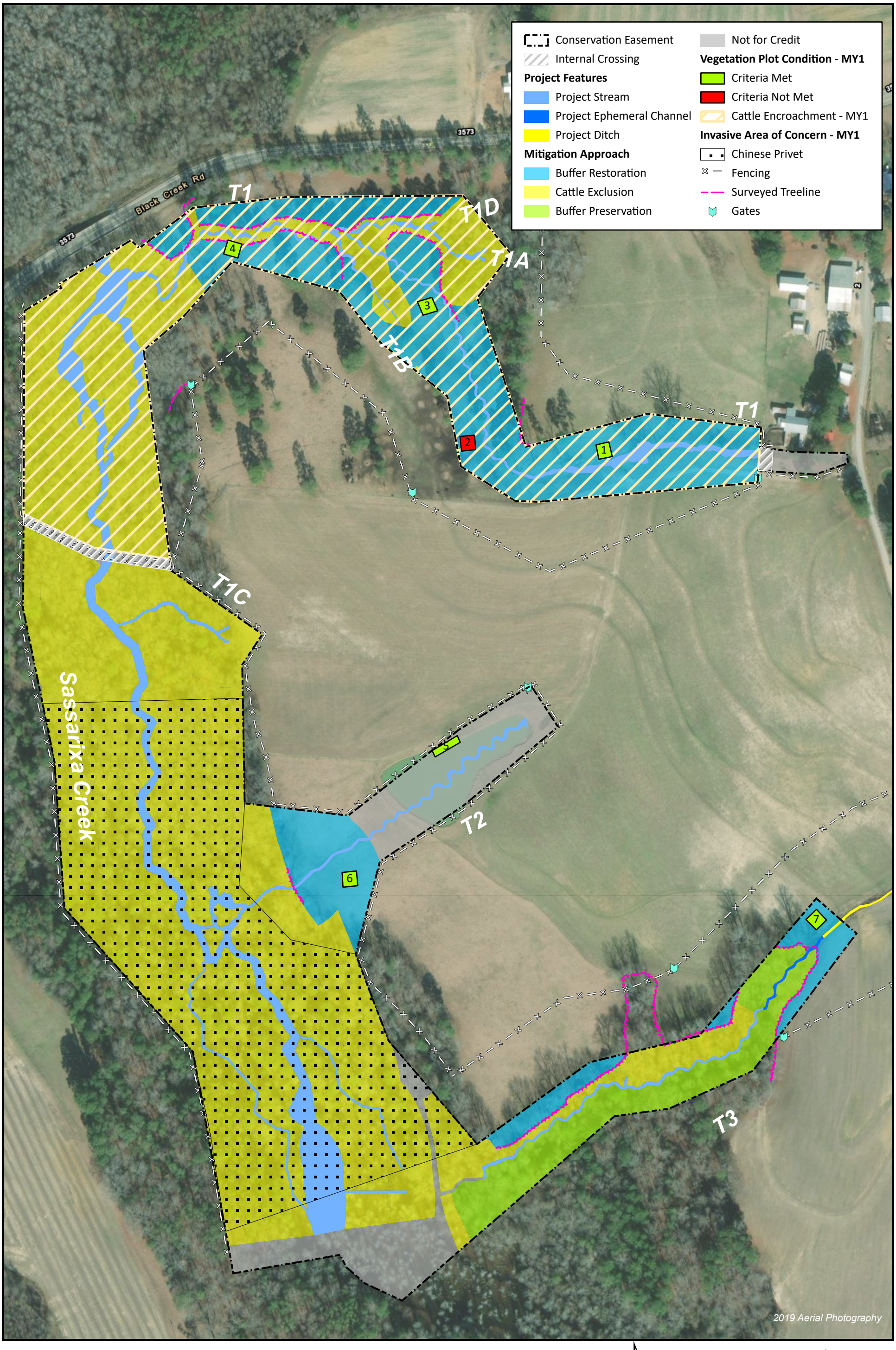

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Figure 4a. Monitoring Plan View Map
Sassarixa Swamp Mitigation Site
Monitoring Year 1 - 2021
Neuse River Basin (03020201)

Johnston County, NC

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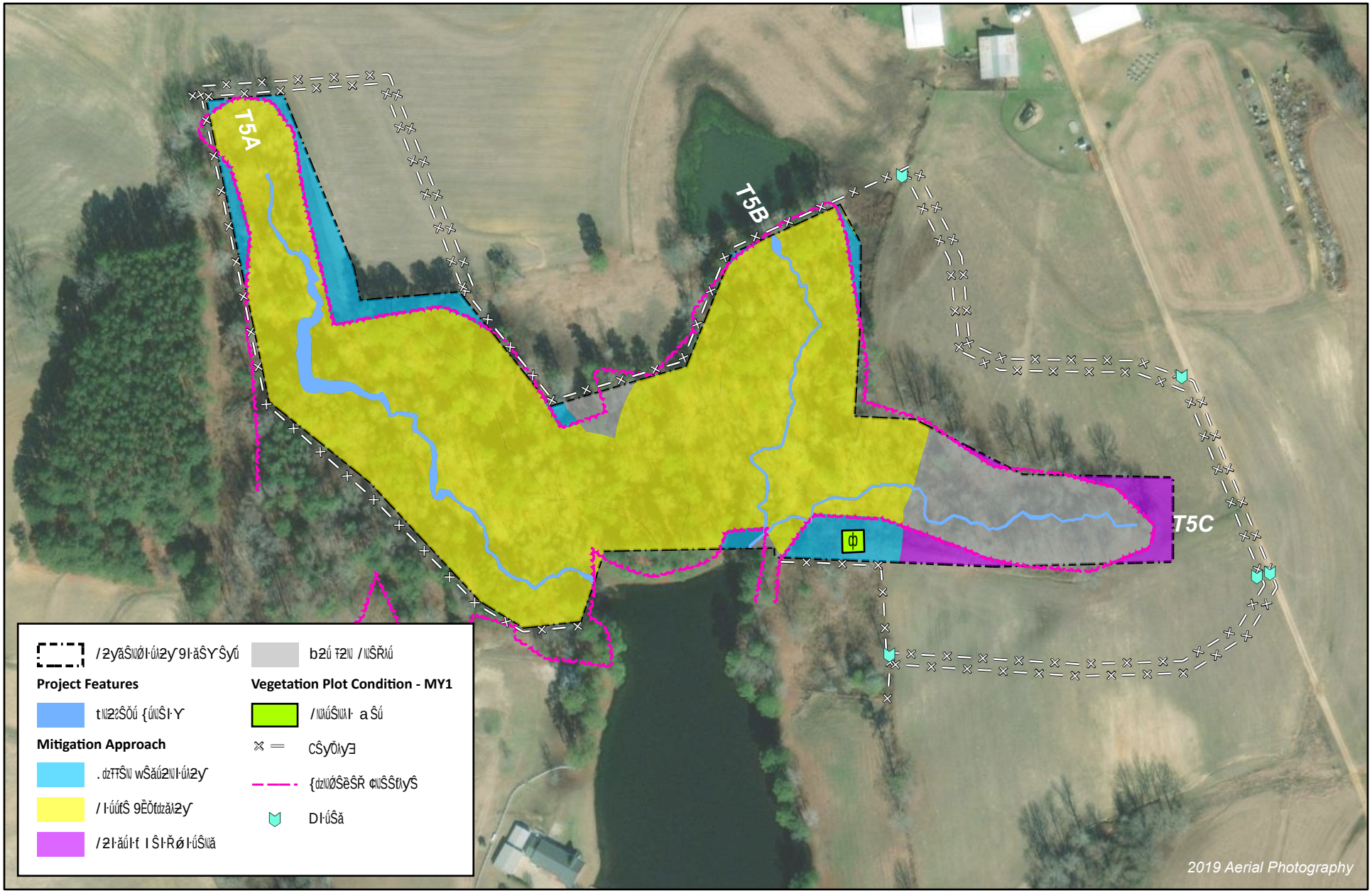

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Johnston County, NC

Table 7. Vegetation Condition Assessment Table
Sassarixa Swamp Mitigation Site
DMS Project No. 100040
Monitoring Year 1 - 2021

Planted Acreage **13.03**

Vegetation Category	Definitions	Mapping Threshold (ac)	Combined Acreage	% of Planted Acreage
Bare Areas	Very limited cover of both woody and herbaceous material.	0.10	0	0%
Low Stem Density Areas	Woody stem densities clearly below target levels based on current MY stem count criteria.	0.10	0	0%
		Total	**0**	**0%**
Areas of Poor Growth Rates	Planted areas where average height is not meeting current MY Performance Standard.	0.10	0	0%
		Cumulative Total	**0.0**	**0%**

Easement Acreage **65.06**

Vegetation Category	Definitions	Mapping Threshold (ac)	Combined Acreage	% of Easement Acreage
Invasive Areas of Concern	Invasives may occur outside of planted areas and within the easement and will therefore be calculated against the total easement acreage. Include species with the potential to directly outcompete native, young, woody stems in the short-term or community structure for existing communities. Invasive species included in summation above should be identified in report summary.	0.10	11.99*	18%
Easement Encroachment Areas	Encroachment may be point, line, or polygon. Encroachment to be mapped consists of any violation of restrictions specified in the conservation easement. Common encroachments are mowing, cattle access, vehicular access. Encroachment has no threshold value as will need to be addressed regardless of impact area.	none	1 Encroachment Noted / 11.39 ac**	

*Chinese privet (*Ligustrum sinense*) resprouted throughout an existing mautre canopy forest along Sassarixa Creek.
**Cattle accessed the Site in July but minimal impacts were made and the encroachment has been resolved.

VEGETATION PLOT PHOTOGRAPHS

FIXED VEG PLOT 1 *(9/2/2021)*

FIXED VEG PLOT 2 *(9/2/2021)*

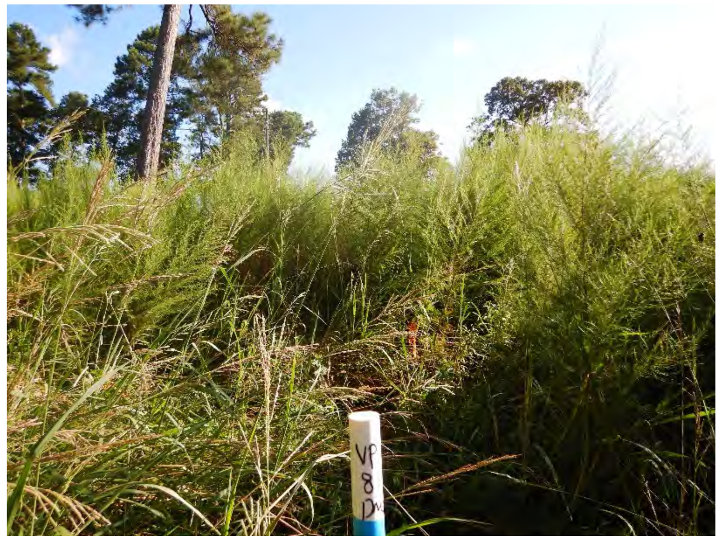
FIXED VEG PLOT 3 *(9/2/2021)*

FIXED VEG PLOT 4 *(9/2/2021)*

FIXED VEG PLOT 5 *(9/2/2021)*

FIXED VEG PLOT 6 *(9/2/2021)*

FIXED VEG PLOT 7 *(9/2/2021)*



FIXED VEG PLOT 8 *(9/2/2021)*

FIXED VEG PLOT 9 *(9/2/2021)*

FIXED VEG PLOT 10 *(9/2/2021)*

OVERVIEW PHOTOGRAPHS

APPENDIX 3. VEGETATION PLOT DATA

Table 8. Vegetation Plot Data

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Monitoring Year 1 - 2021

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Table 8. Vegetation Plot Data
Sassarixa Swamp Mitigation Site
Monitoring Year 1 - 2021

Planted Acreage	13.03
Date of Initial Plant	2021-03-05
Date of Current Survey	2021-09-06
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/ Shrub	Indicator Status	Veg Plot 6 F		Veg Plot 7 F		Veg Plot 8 F		Veg Plot 9 F		Veg Plot 10 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	Acer negundo	boxelder	Tree	FAC	2	2	1	1	2	2	2	2		
	Betula nigra	river birch	Tree	FACW	2	2	2	2	1	1	3	3	1	1
	Liquidambar styraciflua	sweetgum	Tree	FAC										
	Magnolia virginiana	sweetbay	Tree	FACW	1	1	1	1	1	1	1	1	2	2
	Platanus occidentalis	American sycamore	Tree	FACW	2	2	3	3	3	3	5	5	3	3
	Populus deltoides	eastern cottonwood	Tree	FAC			1	1	1	1	2	2	2	2
	Quercus michauxii	swamp chestnut oak	Tree	FACW	3	3	3	3	4	4	1	1	2	2
	Quercus nigra	water oak	Tree	FAC			1	1					1	1
	Quercus phellos	willow oak	Tree	FACW	3	3	2	2	2	2	1	1	2	2
Sum				Performance Standard	13	13	14	14	14	14	15	15	13	13
Mitigation Plan Performance Standard				Current Year Stem Count		13		14		14		15		13
				Stems/Acre		526		567		567		607		526
				Species Count		6		8		7		7		7
				Dominant Species Composition (%)		23		21		29		33		23
				Average Plot Height		2		3		3		3		2
				% Invasives		0		0		0		0		0
Post Mitigation Plan Performance Standard				Current Year Stem Count		13		14		14		15		13
				Stems/Acre		526		567		567		607		526
				Species Count		6		8		7		7		7
				Dominant Species Composition (%)		23		21		29		33		23
				Average Plot Height		2		3		3		3		2
				% Invasives		0		0		0		0		0

1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded) , species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Table 9. Vegetation Performance Standards Summary Table

Sassarixa Swamp Mitigation Site

Monitoring Year 1 - 2021

	Veg Plot 1 F				Veg Plot 2 F				Veg Plot 3 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1	364	2	6	0	243	2	3	0	607	3	6	0
Monitoring Year 0	567	3	8	0	445	2	5	0	607	2	6	0
	Veg Plot 4 F				Veg Plot 5 F				Veg Plot 6 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1	567	2	8	0	486	3	7	0	526	2	6	0
Monitoring Year 0	607	2	8	0	486	3	7	0	567	3	6	0
	Veg Plot 7 F				Veg Plot 8 F				Veg Plot 9 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1	567	3	8	0	567	3	7	0	607	3	7	0
Monitoring Year 0	567	2	8	0	567	3	7	0	648	2	7	0
	Veg Plot 10 F											
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives								
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1	526	2	7	0								
Monitoring Year 0	607	2	8	0								