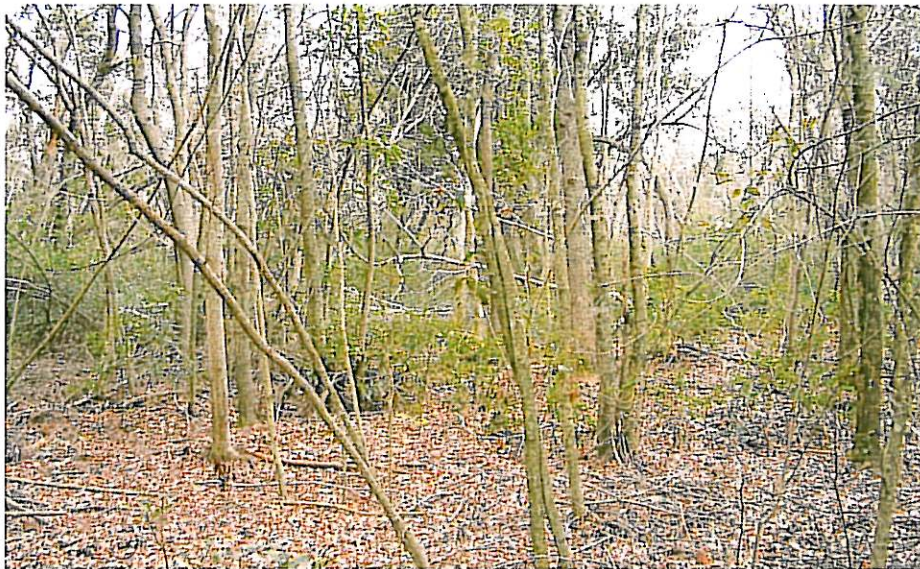


**“Simpson Tract”
Buffer Restoration Project**

**Beaufort County, NC
Tar-Pamlico River Basin
(Cataloging Unit #03020104)**

**Annual Monitoring Report – Year 2
(Task 8)**

NC EEP Contract #D05027



Prepared For:

**North Carolina Department of Environment and Natural Resources
Ecosystem Enhancement Program
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December 2008

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
I. NARRATIVE	2
Introduction.....	2
Mitigation Goals and Objectives	2
Pre-Construction Conditions.....	2
Project Implementation.....	3
II. AS-BUILTS	3
III. MONITORING PLAN	3
IV. MONITORING RESULTS (YEAR 2)	4
V. CONCLUSION	4

TABLES

1. REPORTING AND MILESTONE HISTORY
2. PLANTED SPECIES LIST
3. ANNUAL MONITORING DATA (YEAR 2) – CUMULATIVE SPREADSHEET

FIGURES

1. VICINITY MAP
2. NRCS SOIL SURVEY
3. USGS TOPOGRAPHIC QUADRANGLE
4. 1998 AERIAL PHOTOGRAPHY MAP
5. BUFFER RESTORATION MAP

APPENDICES

- A. SITE PHOTOGRAPHS
- B. VEGETATION SURVEY DATA BY PLOT
- C. CONSERVATION EASEMENT PLAT – September 2006

EXECUTIVE SUMMARY

Prior to project implementation, the Simpson Tract was managed for silvicultural production. The site consisted of clear-cut timber blocks with trees either absent or sparsely populated. Under contract with the EEP, Wetlands Resource Center (WRC) restored 45.0 acres of riparian buffer which will improve water quality within Pungo Creek (a tributary of the Pungo River) in Beaufort County, NC.

The entire 45.0 acre area has been planted with an appropriate mixture of tree and shrub species at an average density of 600 stems/acre. Planting was completed in February 2007. A total of twenty-three (23) 0.10-acre permanent plots corresponding to a total of 2.3 acres (equivalent to 5% of the restoration area) were established throughout the project area. Year 2 monitoring was conducted in September 2008 and will continue until 2011. Vegetative planting will be deemed successful if survivorship of plantings and volunteers of desirable species meets or exceeds a target stem density of 320 stems/acre.

A total of 585 woody stems (excluding volunteer species such as sweet gum, *Liquidambar styraciflua*, and red maple, *Acer rubrum*) were enumerated during the Year 2 monitoring event. This total corresponds to an average density of 254 stems per acre throughout the project area. At the conclusion of the Year 2 monitoring, five of the twenty-three plots met the established success criteria for target stem density. However, all plots appear to have been affected by drought conditions in 2007 and 2008 as indicated by reduced survivorship. As a result of reduced survivorship from drought conditions, supplemental planting is proposed for February 2009. The plots will need to be closely monitored and supplemental planting is deemed necessary at this time.

The following mitigation report summarizes the restoration project and includes more specific information related to project implementation and site progress through Year 2 monitoring.

1.0 NARRATIVE

Introduction

As approved by the EEP, WRC implemented the restoration of 45.0 acres of riparian buffer located at the headwaters of Pungo Creek, a fourth-order tributary of the Pungo River within the Tar-Pamlico River Basin (USGS 8-digit Hydrologic Unit 03020104; DWQ Subbasin 03-03-07). The project area is part of the "Simpson Tract," located approximately 10 miles south of Plymouth in Beaufort County, NC (refer to Figure 1). The project includes the establishment of characteristic tree and shrub species adjacent to open silvicultural ditches on the north side of Rodman Road (refer to Figures 2-5).

Mitigation Goals and Objectives

The proposed restoration project is intended to provide suitable, high-quality riparian buffer restoration as compensatory mitigation for buffer impacts authorized through the NC Division of Water Quality. The objective of the project is to restore appropriate vegetation and diffuse flow conditions to help reduce non-point source discharge of contaminants into adjacent water bodies and increase flood water retention. The primary function of the buffer restoration project detailed in this document is to restore the nitrogen (N) and sediment removal capacity of those areas situated adjacent to surface waters. In addition, the project will provide ancillary benefits to aquatic and terrestrial wildlife via enhanced niche habitat, microclimate modification and shade, and increased food-web support.

Pre-Construction Conditions

The 45-acre restoration area is part of a larger timber tract totaling 1,391 acres. Approximately 950 acres have been determined to be non-jurisdictional ("non-wetlands") by the NRCS (USACE concurrence of this determination has also been provided in previous submittals to the EEP). The remaining acreage has been confirmed to be jurisdictional wetlands. The predominant land use of the tract (both jurisdictional and non-jurisdictional areas) is silvicultural production. Prior land use practices (including herbicide, pesticide, and fertilizer application) serve as potential contributors to decreased water quality of adjacent surface waters (i.e. ditches and 'blue-line' streams). The natural vegetative assemblage of the tract has been modified over the years via prescribed drainage improvements (i.e. ditching), bedding, and planting of loblolly pine (*Pinus taeda*). These silvicultural practices have resulted in a community dominated by pine in more mature stands outside of the proposed buffer area. Hardwood species characteristic of headwater swamp communities of the Coastal Plain are either absent entirely or occur only in sparse locations. Typical canopy species of an undisturbed area would include swamp tupelo (*Nyssa biflora*), bald cypress (*Taxodium distichum*), pond pine (*Pinus serotina*), and Atlantic white cedar (*Chamaecyparis thyoides*). Understory species typical of non-

riverine swamp forest communities include American titi (*Cyrilla racemiflora*), sweet bay (*Magnolia virginiana*), red bay (*Persea borbonia*), fetterbush (*Lyonia lucida*), red maple (*Acer rubrum*), and catbrier (*Smilax* species).

Project Implementation

Site preparation commenced in the fall of 2006. During this period, areas of invasive or non-target species were drum-chopped and bush-hogged. Following these activities, a water-soluble herbicide was applied by a licensed applicator to reduce competition within the project area.

Site planting was completed on February 23, 2007. The installation of approximately 35,000 seedlings was supervised by LMG to ensure proper spacing and planting depths. LMG obtained a mix of hardwood and shrub seedlings which accurately represent the targeted headwater swamp community discussed in the approved restoration plan (Table 2). Hardwood tree seedlings comprised a majority of the planting for Zone 1 (150' wide), while shrubs were installed throughout Zone 2 (remaining 50'). Seedlings were planted on approximately 8' centers at a depth sufficient to cover the root collar throughout the project area. Following the planting activities, LMG inspected the project area to ensure that seedlings had been installed correctly.

Refer to Appendix A for photographs of site conditions during the Year 2 monitoring event. Refer to Table 1 for a complete project timeline.

2.0 AS-BUILTS

As specified by the approved restoration plan, a total of twenty-three (23) permanent monitoring plots were established, which corresponds to a total of 2.3 acres (equivalent to 5% of the restoration area). These plots were installed throughout the project area to provide for a representative sampling of the vegetative community.

Refer to the attached survey (Appendix C) of the buffer restoration area for the location and corresponding number of the permanent vegetative monitoring plots a on the site.

3.0 MONITORING PLAN

Annual monitoring is being conducted near the end of each growing season for a period of five years. Vegetative monitoring has been conducted at each of the twenty-three (23) 0.10-acre permanent plots.

Vegetative planting will be deemed successful if survivorship of plantings and volunteers of desirable species¹ meets or exceeds a target stem density of 320 stems/acre. Monitoring reports will be submitted annually to the EEP (by January 1 of each year). These reports will include results of vegetative monitoring and photographic documentation of site conditions. Monitoring reports will also identify any contingency measures that may need to be employed to remedy any site deficiencies. For instance, deer browse tubes and fencing may need to be used if evidence of significant herbivory or deer browse is observed. In addition, supplemental planting may be necessary in areas of reduced survivorship.

4.0 MONITORING RESULTS

Monitoring of the on-site vegetation was conducted on September 29, 2008. A total of 585 stems were counted throughout the twenty-three plots, which correlates to an average of 254 stems per acre within the project area (Table 3). Bitter galberry (*Ilex glabra*) was the most abundant woody species, with an observed total of 123 individuals. Other planted species such as bald cypress (*Taxodium distichum*) and black gum (*Nyssa sylvatica*) were also prevalent within the monitored plots. Acceptable survivorship of target and volunteer species was found at 5 of the 23 plots (2, 3, 17, 18 and 22). The reduced survivorship in the remaining plots is attributed to the drought conditions that followed the initial planting in February 2007 and continued throughout the summer and fall of 2007 and spring of 2008. Estimates from the USDA classified Beaufort County as ranging from a D0 (Abnormally Dry) to a D3 (Extreme Drought) county during the growing season of 2008. Refer to Appendix A for photographs of current site conditions and Appendix B for information regarding individual plot totals.

Continued drought conditions have adversely impacted the remaining seedlings. Survivorship totals have declined during Year 2. As a result, supplemental planting will be implemented to ensure that the site can, over time, provide for mature buffer habitat.

5.0 CONCLUSION

WRC has completed the implementation of 45.0 acres of buffer restoration located in TAR-7 of the lower Tar-Pamlico Basin. At the end of Year 2 monitoring, successful vegetative criteria has been affected by a severe drought, and the restoration of the target swamp forest community is progressing slower than desired. Therefore supplemental planting of target species is proposed for February of 2009. This work will involve the planting of an average of 300 stems per acre. Species to be planted will include bald cypress, green ash,

¹ Desirable species are considered as noninvasive species characteristic of riparian habitats.
Simpson Tract Riparian Buffer Annual Monitoring Report – Year 1
Contract No. D05027

swamp black gum and pond pine. Planting will be focused on areas of the buffer site exhibiting particularly acute mortality. After supplemental planting is implemented and vegetation progresses towards the successful criteria threshold, it is expected that restoration of riparian buffer along "blue-line" surface waters will help to decrease source nutrient loading and concurrently increase nutrient removal capacity. In addition, the project will provide ancillary benefits to aquatic and terrestrial wildlife via enhanced niche habitat, microclimate modification and shade, and increased food-web support. By doing so, the proposed project will help to effectively mitigate for authorized loss of buffer habitat within the Tar-Pamlico Basin.

TABLES

Table 1. Simpson Buffer Restoration Timeline

Task	Project Milestone	Completion Date	COMMENTS
1	Feasibility Study, CE Document, and Public Meeting	July 1, 2005	
2	Record a Conservation Easement on the Site	September 22, 2006	Recorded in Beaufort County Register of Deeds
3	Restoration Plan Approved by EEP	April 2006	Restoration Plan complete
4	Mitigation Site Earthwork Completed	February 15, 2007	
5	Mitigation Site Planting and Installation of Monitoring Devices	February 21, 2007	Approved by EEP
6	Submittal of Mitigation Plan (including as-built drawings)	June, 2007	Approved by EEP
7	Submittal of Monitoring Report #1 to EEP	December 31, 2007	Approved by EEP
8	Submittal of Monitoring Report #2 to EEP	December 31, 2008	
9	Submittal of Monitoring Report #3 to EEP	December 31, 2009	
10	Submittal of Monitoring Report #4 to EEP	December 31, 2010	
11	Submittal of Monitoring Report #5 to EEP	December 31, 2011	

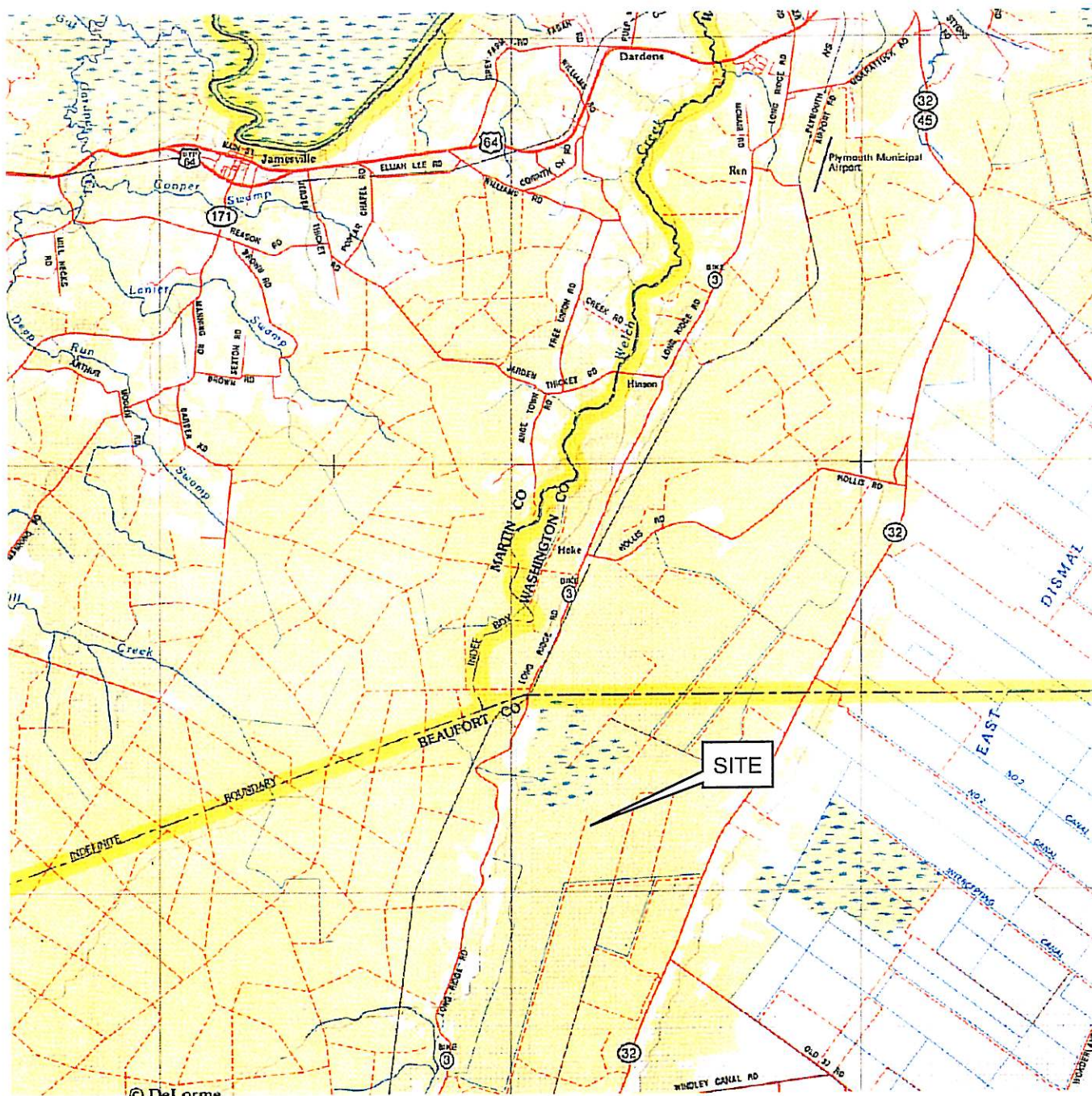
TABLE 2. Simpson Buffer Plant List (Planted February 2007)


Buffer Zone	Zone 1 (Trees)	
Stem Target:	600/ac (30ac.)	17,000
Species	# planted	(% of total)
Bald cypress (<i>Taxodium distichum</i>)	5,000	27.78%
White Cedar (<i>Chamaemycyparis thyoides</i>)	3,000	16.67%
Black Gum (<i>Nyssa sylvatica</i>)	4,000	22.22%
Green Ash (<i>Fraxinus pennsylvanica</i>)	5,000	27.78%
	Zone 2 (Shrubs)	
	1,000/ac (15ac.)	18,500
Red Bay (<i>Persea borbonia</i>)	5,000	33.33%
Sweet Bay (<i>Magnolia virginiana</i>)	6,000	40.00%
Fetterbush (<i>Lyonia lucida</i>)	2,000	13.33%
Wax Myrtle (<i>Myrica cerifera</i>)	5,500	36.67%
	Total	35,500

TABLE 3. MONITORING PLOT COMPARISON
 SIMPSON BUFFER RESTORATION
 YEAR 2 (2008)

Species	Plot #																										Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Bald Cypress	5			2	7		12		7		13	11	7	7	13	6	15	3		6	5					119	
Black Gum	4				4			1			5	2	2	7	9	11	10	9	1	16	20	3	17			121	
Blueberry																										0	
Fetterbush	2	14	1	1				4	1													1				24	
Bitter Galberry	6	53	33	14			1								1	1		5			9				123		
Green Ash		3										1	1		1				2						8		
Loblolly Bay		5	10			1	2	8	2			1					3								32		
Loblolly Pine																									0		
Red Bay	8	14	6				1		8								8				1	1	1		47		
Red Maple																									0		
Sassafras																									0		
Sweet Bay					1						1														2		
Sweet Pepperbush																	28					23			51		
Wax Myrtle		14	8						2	6	1		1	4	3		1				5				45		
Atlantic White Cedar	1					1	2										8	1							13		
TOTAL	26	103	58	17	12	2	18	12	21	6	20	14	12	18	27	18	33	58	3	22	25	42	18		585		
Total Counted Toward Success	26	103	58	17	12	2	18	12	21	6	20	14	12	18	27	18	33	58	3	22	25	42	18		585		
Stem Density (per ac)	260	1030	580	170	120	20	180	120	210	60	200	140	120	180	270	180	330	580	30	220	250	420	180		254		

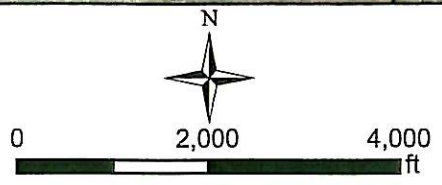
FIGURES




 SCALE: 1" = 2 miles

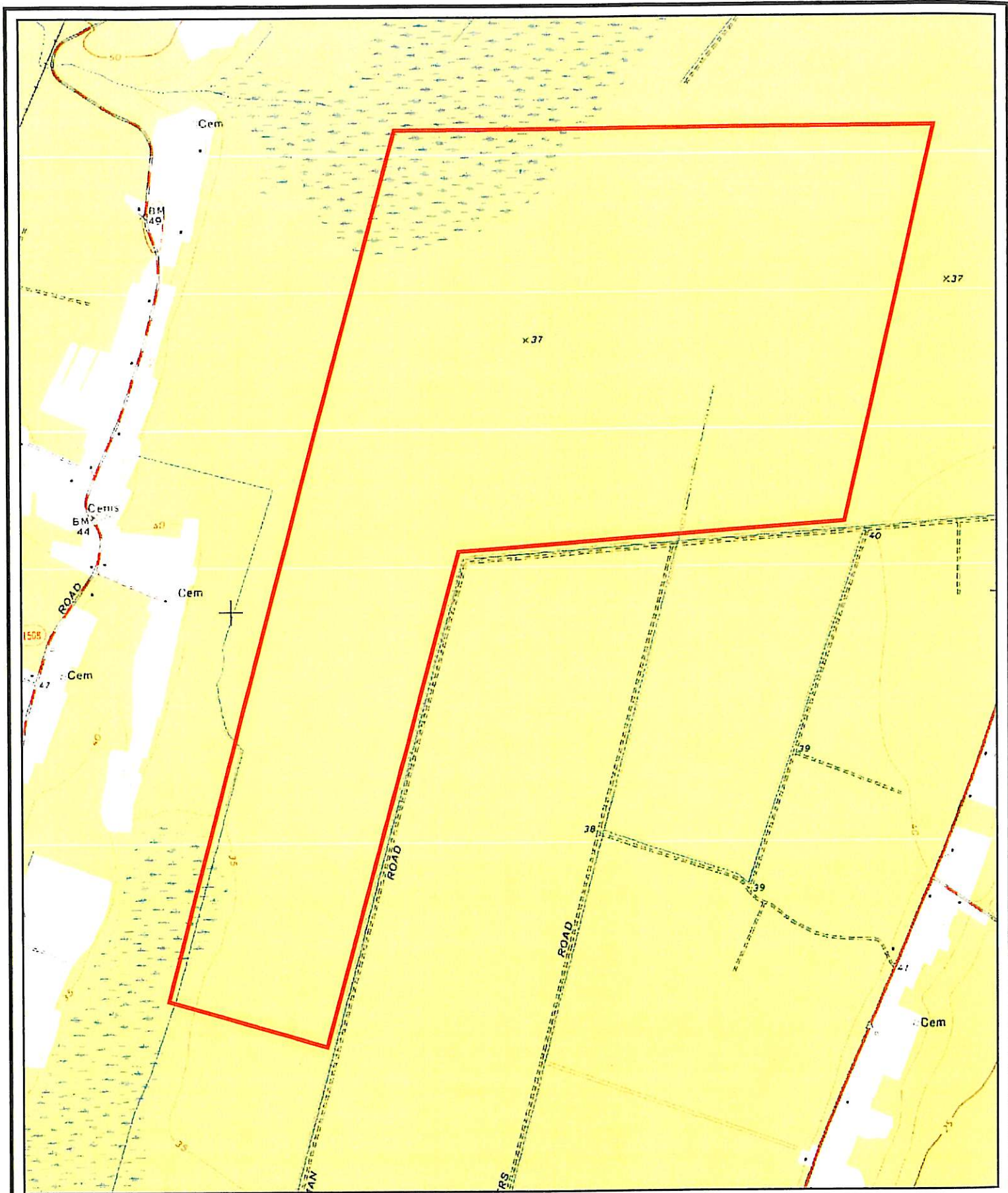
Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 1.
 Vicinity Map
 Delorme Gazetteer
 Land Management Group, Inc.



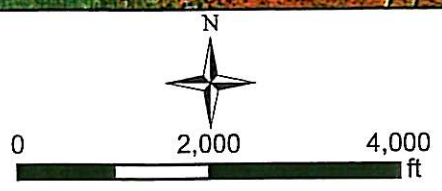
Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 2.
USDA Soil Survey
Beaufort County
Land Management Group, Inc.



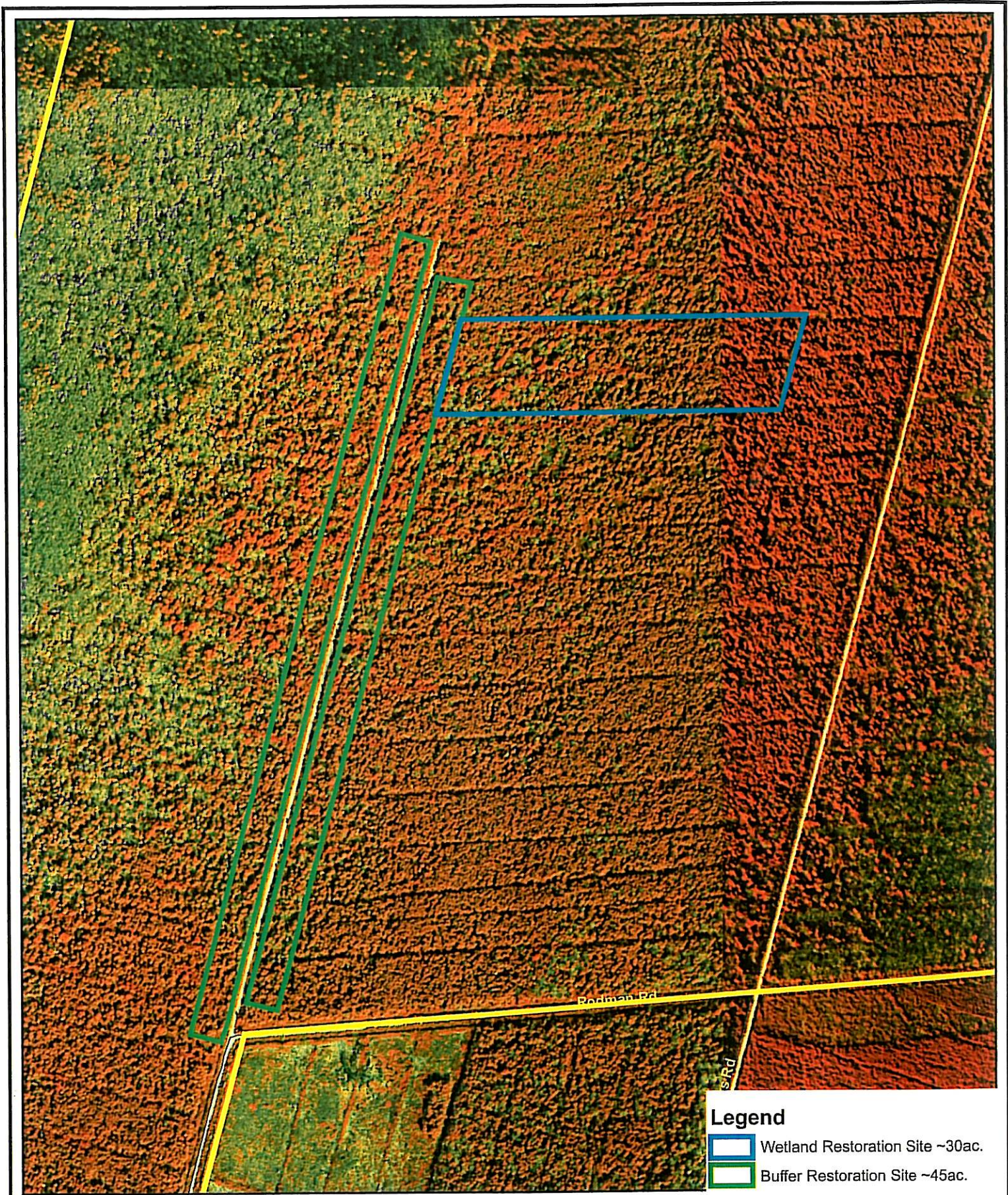
Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 3.
 USGS Topographic Map
 Hoke, NC



Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 4.
1998 Aerial Photography



Legend

- Wetland Restoration Site ~30ac.
- Buffer Restoration Site ~45ac.



0 800 1,600
ft

Simpson Tract
Tar-Pamlico River Basin
HUC: 03020104
Subbasin:03-03-07

Figure 5.
 Wetland and Buffer
 Restoration Plan

Land Management Group, Inc.

APPENDIX A. Site Photographs

Typical maturing bald cypress



Typical monitoring plot with flagged seedlings



Wetlands Resource Center
Cal Miller
Simpson Tract Buffer Restoration
Beaufort County, NC
40-05-625



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Environmental Consultants

September 2008

Appendix A.
Site Photographs

View of conditions at Plot 11



View of conditions at Plot 5



Wetlands Resource Center
Cal Miller
Simpson Tract Buffer Restoration
Beaufort County, NC
40-05-625



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September 2008

Appendix A.
Site Photographs

Typical view of buffer vegetation (plot 18)



Typical view of buffer vegetation (plot 21)



APPENDIX B. Vegetation Survey Data by Plot

SIMPSON FARM BUFFER RESTORATION SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 1

SPECIES	STRATUM (T, SA or SH)	Number of Individuals	HEIGHT (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Bald Cypress	T/SA	4	2	Planted	4
Black Gum	T/SA	4	1	Planted	4
Fetterbush	SH	2	1	Planted	2
Galberry	SH	1	1	Volunteer	1
Galberry	SH	1	2	Volunteer	1
Galberry	SH	4	3	Volunteer	4
Red Bay	SH	2	1	Planted	2
Red Bay	SH	1	2	Planted	1
Red Bay	SH	5	4	Planted	5
White Cedar	T/SA	1	1	Planted	1
	TOTAL SHRUBS	16		OBSERVED DENSITY (PER PLOT)	26
	TOTAL TREES OF PLANTED SPECIES	10		OBSERVED DENSITY (PER ACRE)	260
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	26			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 2

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Fetterbush	SH	6	1	Planted	6
Fetterbush	SH	7	2	Planted	7
Fetterbush	SH	1	3	Planted	1
Galberry	SH	3	1	Volunteer	3
Galberry	SH	35	2	Volunteer	35
Galberry	SH	11	3	Volunteer	11
Galberry	SH	4	4	Volunteer	4
Green Ash	T/SA	2	1	Planted	2
Green Ash	T/SA	1	4	Planted	1
Loblolly Bay	SH	2	1	Volunteer	2
Loblolly Bay	SH	1	5	Volunteer	1
Loblolly Bay	SH	1	6	Volunteer	1
Loblolly Bay	SH	1	8	Volunteer	1
Red Bay	SH	3	1	Planted	3
Red Bay	SH	4	2	Planted	4
Red Bay	SH	2	3	Planted	2
Red Bay	SH	5	4	Planted	5
Wax Myrtle	SH	6	2	Planted	6
Wax Myrtle	SH	7	3	Planted	7
Wax Myrtle	SH	1	4	Planted	1
	TOTAL SHRUBS	100		OBSERVED DENSITY (PER PLOT)	103
	TOTAL TREES OF PLANTED SPECIES	3		OBSERVED DENSITY (PER ACRE)	1030
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	103			

**SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 3**

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Fetterbush	SH	1	1	Planted	1
Loblolly Bay	SH	2	3	Volunteer	2
Loblolly Bay	SH	1	4	Volunteer	1
Loblolly Bay	SH	2	5	Volunteer	2
Loblolly Bay	SH	5	6	Volunteer	5
Red Bay	SH	1	1	Planted	1
Red Bay	SH	2	2	Planted	2
Red Bay	SH	3	3	Planted	3
Galberry	SH	2	1	Volunteer	2
Galberry	SH	5	2	Volunteer	5
Galberry	SH	9	3	Volunteer	9
Galberry	SH	16	4	Volunteer	16
Galberry	SH	1	5	Volunteer	1
Wax Myrtle	SH	1	1	Planted	1
Wax Myrtle	SH	5	2	Planted	5
Wax Myrtle	SH	1	3	Planted	1
Wax Myrtle	SH	1	4	Planted	1
	TOTAL SHRUBS	58		OBSERVED DENSITY (PER PLOT)	58
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	580
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	58			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 4

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	2	Planted	2
Fetterbush	SH	1	2	Planted	1
Galberry	SH	14	2	Volunteer	14
	TOTAL SHRUBS	15		OBSERVED DENSITY (PER PLOT)	17
	TOTAL TREES OF PLANTED SPECIES	2		OBSERVED DENSITY (PER ACRE)	170
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	17			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 5

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Bald Cypress	T/SA	4	2	Planted	4
Bald Cypress	T/SA	2	3	Planted	2
Black Gum	T/SA	1	1	Planted	1
Black Gum	T/SA	2	2	Planted	2
Black Gum	T/SA	1	4	Planted	1
Sweetbay	SH	1	2	Planted	1
	TOTAL SHRUBS	1		OBSERVED DENSITY (PER PLOT)	12
	TOTAL TREES OF PLANTED SPECIES	11		OBSERVED DENSITY (PER ACRE)	120
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	12			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 6

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Loblolly Bay	SH	1	1	Volunteer	1
White Cedar	T/SA	1	1	Planted	1
	TOTAL SHRUBS	1		OBSERVED DENSITY (PER PLOT)	2
	TOTAL TREES OF PLANTED SPECIES	1		OBSERVED DENSITY (PER ACRE)	20
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	2			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 7

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	12	2	Planted	12
Galberry	SH	1	1	Volunteer	1
Loblolly Bay	SH	2	1	Volunteer	2
Red Bay	SH	1	3	Planted	1
White Cedar	T/SA	2	1	Planted	2
	TOTAL SHRUBS	4		OBSERVED DENSITY (PER PLOT)	18
	TOTAL TREES OF PLANTED SPECIES	14		OBSERVED DENSITY (PER ACRE)	180
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	18			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 8

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Fetterbush	SH	4	2	Planted	4
Loblolly Bay	SH	6	1	Volunteer	6
Loblolly Bay	SH	2	2	Volunteer	2
	TOTAL SHRUBS	12		OBSERVED DENSITY (PER PLOT)	12
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	120
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	12			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 9

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	4	1	Planted	4
Bald Cypress	T/SA	3	2	Planted	3
Black Gum	T/SA	1	1	Planted	1
Fetterbush	SH	1	1	Planted	1
Loblolly Bay	SH	2	1	Volunteer	2
Red Bay	SH	1	1	Volunteer	1
Red Bay	SH	6	2	Volunteer	6
Red Bay	SH	1	3	Volunteer	1
Wax Myrtle	SH	2	2	Planted	2
	TOTAL SHRUBS	13		OBSERVED DENSITY (PER PLOT)	21
	TOTAL TREES OF PLANTED SPECIES	8		OBSERVED DENSITY (PER ACRE)	210
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	21			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 10

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Wax Myrtle	SH	1	1	Planted	1
Wax Myrtle	SH	2	2	Planted	2
Wax Myrtle	SH	3	3	Planted	3
	TOTAL SHRUBS	6		OBSERVED DENSITY (PER PLOT)	6
	TOTAL TREES OF PLANTED SPECIES	0		OBSERVED DENSITY (PER ACRE)	60
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	6			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 11

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	4	1	Planted	4
Bald Cypress	T/SA	9	2	Planted	9
Black Gum	T/SA	1	1	Planted	1
Black Gum	T/SA	4	2	Planted	4
Sweetbay	SH	1	<1	Planted	1
Wax Myrtle	SH	1	1	Planted	1
	TOTAL SHRUBS	2		OBSERVED DENSITY (PER PLOT)	20
	TOTAL TREES OF PLANTED SPECIES	18		OBSERVED DENSITY (PER ACRE)	200
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	20			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 12

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	9	2	Planted	9
Black Gum	T/SA	2	2	Planted	2
Green Ash	T/SA	1	2	Planted	1
	TOTAL SHRUBS	0		OBSERVED DENSITY (PER PLOT)	14
	TOTAL TREES OF PLANTED SPECIES	14		OBSERVED DENSITY (PER ACRE)	140
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	14			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 13

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	7	2	Planted	7
Black Gum	T/SA	1	1	Planted	1
Black Gum	T/SA	1	2	Planted	1
Green Ash	T/SA	1	1	Planted	1
Loblolly Bay	SH	1	1	Volunteer	1
Wax Myrtle	SH	1	<1	Planted	1
	TOTAL SHRUBS	2		OBSERVED DENSITY (PER PLOT)	12
	TOTAL TREES OF PLANTED SPECIES	10		OBSERVED DENSITY (PER ACRE)	120
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	12			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 14

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	5	2	Planted	5
Black Gum	T/SA	4	1	Planted	4
Black Gum	T/SA	3	2	Planted	3
Wax Myrtle	SH	1	1	Planted	1
Wax Myrtle	SH	2	2	Planted	2
Wax Myrtle	SH	1	3	Planted	1
	TOTAL SHRUBS	4		OBSERVED DENSITY (PER PLOT)	18
	TOTAL TREES OF PLANTED SPECIES	14		OBSERVED DENSITY (PER ACRE)	180
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	18			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 15

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	3	1	Planted	3
Bald Cypress	T/SA	10	2	Planted	10
Black Gum	T/SA	2	1	Planted	2
Black Gum	T/SA	7	2	Planted	7
Galberry	SH	1	1	Volunteer	1
Green Ash	T/SA	1	2	Planted	1
Wax Myrtle	SH	3	2	Planted	3
	TOTAL SHRUBS	4		OBSERVED DENSITY (PER PLOT)	27
	TOTAL TREES OF PLANTED SPECIES	23		OBSERVED DENSITY (PER ACRE)	270
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	27			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 16

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	1	Planted	1
Bald Cypress	T/SA	4	2	Planted	4
Bald Cypress	T/SA	1	3	Planted	1
Black Gum	T/SA	11	2	Planted	11
Galberry	SH	1	2	Volunteer	1
	TOTAL SHRUBS	1		OBSERVED DENSITY (PER PLOT)	18
	TOTAL TREES OF PLANTED SPECIES	17		OBSERVED DENSITY (PER ACRE)	180
	TOTAL INDIVIDUALS	18			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 17

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	1	<1	Planted	1
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	11	2	Planted	11
Bald Cypress	T/SA	1	3	Planted	1
Black Gum	T/SA	4	1	Planted	4
Black Gum	T/SA	6	2	Planted	6
White Cedar	T/SA	8	<1	Planted	8
	TOTAL SHRUBS	0		OBSERVED DENSITY (PER PLOT)	33
	TOTAL TREES OF PLANTED SPECIES	33		OBSERVED DENSITY (PER ACRE)	330
	TOTAL INDIVIDUALS	33			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 18

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	3	2	Planted	3
Black Gum	T/SA	4	1	Planted	4
Black Gum	T/SA	5	2	Planted	5
Galberry	SH	1	2	Volunteer	1
Galberry	SH	3	3	Volunteer	3
Galberry	SH	1	4	Volunteer	1
Loblolly Bay	SH	1	3	Volunteer	1
Loblolly Bay	SH	2	4	Volunteer	2
Red Bay	SH	1	1	Planted	1
Red Bay	SH	2	2	Planted	2
Red Bay	SH	3	3	Planted	3
Red Bay	SH	2	4	Planted	2
Sweet Pepperbush	SH	5	1	Volunteer	5
Sweet Pepperbush	SH	14	2	Volunteer	14
Sweet Pepperbush	SH	8	3	Volunteer	8
Sweet Pepperbush	SH	1	4	Volunteer	1
Wax Myrtle	SH	1	<1	Planted	1
White Cedar	T/SA	1	<1	Planted	1
	TOTAL SHRUBS	45		OBSERVED DENSITY (PER PLOT)	58
	TOTAL TREES OF PLANTED SPECIES	13		OBSERVED DENSITY (PER ACRE)	580
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	58			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 19

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Black Gum	T/SA	1	1	Planted	1
Green Ash	T/SA	2	2	Planted	2
	TOTAL SHRUBS	0		OBSERVED DENSITY (PER PLOT)	3
	TOTAL TREES OF PLANTED SPECIES	3		OBSERVED DENSITY (PER ACRE)	30
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	3			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 20

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	2	1	Planted	2
Bald Cypress	T/SA	4	2	Planted	4
Black Gum	T/SA	3	1	Planted	3
Black Gum	T/SA	13	2	Planted	13
	TOTAL SHRUBS	0		OBSERVED DENSITY (PER PLOT)	22
	TOTAL TREES OF PLANTED SPECIES	22		OBSERVED DENSITY (PER ACRE)	220
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	22			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 21

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Bald Cypress	T/SA	5	2	Planted	5
Black Gum	T/SA	4	1	Planted	4
Black Gum	T/SA	15	2	Planted	15
Black Gum	T/SA	1	3	Planted	1
	TOTAL SHRUBS	0		OBSERVED DENSITY (PER PLOT)	25
	TOTAL TREES OF PLANTED SPECIES	25		OBSERVED DENSITY (PER ACRE)	250
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	25			

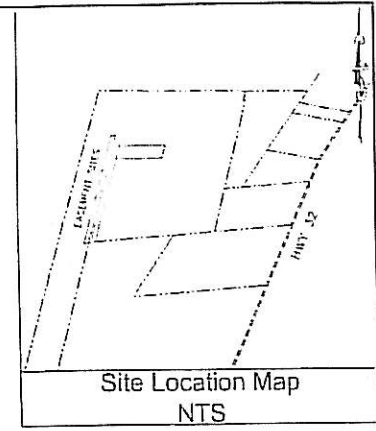
SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 22

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Black Gum	T/SA	2	1	Planted	2
Black Gum	T/SA	1	2	Planted	1
Fetterbush	SH	1	1	Planted	1
Galberry	SH	1	2	Volunteer	1
Galberry	SH	4	3	Volunteer	4
Galberry	SH	4	4	Volunteer	4
Red Bay	SH	1	3	Planted	1
Sweet Pepperbush	SH	8	<1	Volunteer	8
Sweet Pepperbush	SH	4	1	Volunteer	4
Sweet Pepperbush	SH	4	2	Volunteer	4
Sweet Pepperbush	SH	6	3	Volunteer	6
Sweet Pepperbush	SH	1	4	Volunteer	1
Wax Myrtle	SH	3	2	Planted	3
Wax Myrtle	SH	2	3	Planted	2
	TOTAL SHRUBS	39		OBSERVED DENSITY (PER PLOT)	42
	TOTAL TREES OF PLANTED SPECIES	3		OBSERVED DENSITY (PER ACRE)	420
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	42			

SIMPSON FARM RESTORATION WETLAND SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS
YEAR 2-2008
PLOT NUMBER 23

Species	Stratum (T, SA or SH)	Number of Individuals	Height (feet)	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Black Gum	T/SA	4	1	Planted	4
Black Gum	T/SA	13	2	Planted	13
Red Bay	SH	1	1	Planted	1
	TOTAL SHRUBS	1		OBSERVED DENSITY (PER PLOT)	18
	TOTAL TREES OF PLANTED SPECIES	17		OBSERVED DENSITY (PER ACRE)	180
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	18			

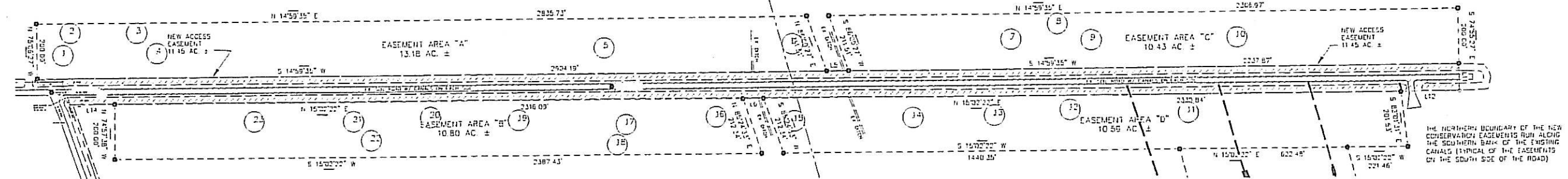
APPENDIX C. Conservation Easement Plat-September 2006



THOMAS D. SIMPSON
DB 1418 PG 55B
PLAT CAB. "T" SLICE 23-4

THE SOUTHERN BOUNDARY OF THE NEW
CONSERVATION EASEMENTS RUN ALONG
THE NORTHERN BANK OF THE EXISTING
CANALS (TYPICAL OF THE EASEMENTS
ON THE NORTH SIDE OF THE ROAD)

THE SOUTHERN BOUNDARY OF THE NEW
CONSERVATION EASEMENTS RUN ALONG
THE NORTHERN BANK OF THE EXISTING
CANALS (TYPICAL OF THE EASEMENTS
ON THE NORTH SIDE OF THE ROAD)



THE NORTHERN BOUNDARY OF THE NEW
CONSERVATION EASEMENTS RUN ALONG
THE SOUTHERN BANK OF THE EXISTING
CANALS (TYPICAL OF THE EASEMENTS
ON THE SOUTH SIDE OF THE ROAD)

THE NORTHERN BOUNDARY OF THE NEW
CONSERVATION EASEMENTS RUN ALONG
THE SOUTHERN BANK OF THE EXISTING
CANALS (TYPICAL OF THE EASEMENTS
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Project: Simpson Buffer Restoration	Date: 4/17/07	Revision Date: NA
Applicant:	Scale: 1"=100'	Job Number: 06-05-625
Title:	Drawn By: GSF	Sheet Number: Appendix B