"Howard Farm Property"
Buffer Restoration Project

Greene County, NC
Neuse River Basin
(Cataloging Unit #03020203)

2007 Annual Monitoring Report (Year 2 of 5)
(Task 8)

NC EEP Contract #D05020-1

Prepared For:

North Carolina Department of Environment and Natural Resources
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

December 2007

Prepared By:

Land Management Group, Inc.
PO Box 2522
Wilmington, NC 28403

LMG
LAND MANAGEMENT GROUP INC.
Environmental Consultants

Phone. 910-452-0001
Fax. 910-452-0060

Project Manager:
Christian A. Preziosi
Office. 910-452-0001
Cell. 910-471-0515
Email. cpreziosi@lmgroup.net

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Prior to project implementation, the Howard Farm Property was farmed for soybean and cotton production. The site consisted entirely of open agricultural fields with no existing riparian buffer (i.e. trees and shrubs are absent within 200 ft of existing surface waters). Under contract with the North Carolina Ecosystem Enhancement Program (EEP), Land Management Group, Inc. (LMG) implemented the restoration of 26.3 acres of riparian buffer habitat along Mussel Run (a tributary of Contentnea Creek) and contiguous surface-waters (i.e. field ditches) in Greene County, NC.

The entire 26.3-ac project area has been planted with characteristic tree and shrub species on an average density of 900 stems/ac. Planting was completed in February 2006. Thirteen (13) permanent 0.10-ac monitoring plots (equivalent to 5% of the restoration area) were established subsequent to planting. Annual monitoring will be conducted near the end of each growing season for a period of five years beginning in October 2006. 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 1,548 stems (planted and volunteer shrubs/trees) were observed within the thirteen 0.10-acre plots during Year 1 monitoring. Of the total observed, 1,091 stems (total excluding red maple and sweet gum) were counted toward the success criteria (corresponding to an average of 839 stems/acre). Given the average stem density observed, the site seems to be progressing well toward the targeted stem density.

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.

The following monitoring report summarizes the restoration project and includes more specific information related to project implementation, 'as-built' conditions, and site progress through Year 1.

I. PROJECT BACKGROUND

1. Location and Setting

As approved by the EEP, LMG implemented the restoration of 26.3 acres of farmland located adjacent to Mussel Run (a tributary of the Neuse River) and a series of contiguous surface waters (i.e. field ditches). The project area is part of the "Howard Farm", located approximately 2.5 miles northeast of Hookerton in Greene County, NC (refer to Figure 1). The project includes the establishment of characteristic tree and shrub species adjacent to open field ditches on the east and west side of Churchill Road (SR #1404) as well as Mussel Run (refer to Figure 2). The property is situated within NEU-7 of the lower Neuse River Basin (USGS Cataloging Unit 03020203) and within sub-basin 03-04-07.

2. Mitigation Type and Objectives

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

3. Project History and Background

Table 1 provides information regarding the reporting and milestone history for the Howard Farm Buffer Restoration project.

4. Monitoring Plan View

Locations of vegetation monitoring plots for the Howard Farm Buffer Restoration can be found in Figure 3.

II. PROJECT CONDITIONS

1. Pre-Construction Conditions

The 26.3-acre riparian buffer restoration area represents a portion of a larger 145-acre tract ("Howard Farm") formerly farmed for the production of soybean and cotton. Land use practices (including herbicide, pesticide, and fertilizer application) served as potential contributors to decreased water quality of adjacent surface waters (i.e. ditches and 'blue-line' streams). Application of nitrogen-rich fertilizer represented the most significant non-point source of nitrogen within the immediate project area. Woody vegetation along ditches was either absent or sparse (less than 100 stems per acre that are > 5 inches diameter at breast height). As a result, nutrient-laden runoff was discharged from agricultural fields directly into surface waters with little or no nutrient filtration/transformation.

2. Soils

The site consists predominantly of Johns sandy loam (refer to Figure 4) – a somewhat poorly drained to moderately well drained soil occurring along stream terraces. Infiltration is moderate and surface runoff is slow in these areas. The seasonal high water table occurs between 1.5 ft and 3.0 ft below the soil surface. The remaining portion of the buffer area consists of Lumbee sandy loam – a poorly drained soil characteristic of broader flats of stream terraces. Lumbee soils exhibit moderate infiltration with a seasonal high water table occurring at or near the soil surface.

3. Restoration Activities

The restoration project included the planting of characteristic tree and shrub seedlings adjacent to open ditches and blue-line streams on the 26.3-ac restoration site (refer to Figure 3). No federal or state permits were necessary to conduct the restoration activities. The riparian buffer was planted with various species including river birch (*Betula nigra*), sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), and red bay (*Persea borbonia*). The outer 50 feet of the buffer area was planted with characteristic shrub species including wax myrtle (*Myrica cerifera*), American beautyberry (*Callicarpa americana*), elderberry (*Sambucus canadensis*), and sweet pepperbush (*Clethra alnifolia*). All species selected for the restoration project naturally occur on the site within undisturbed riparian buffer areas. These species are considered to be well suited for site-specific conditions (including soil characteristics and moisture regimes). In addition, each of

these species is listed within NCDENR's "Guidelines for Riparian Buffer Restoration" as appropriate species for use in riparian buffer restoration projects. Approximately 20,000 trees and shrubs were planted throughout the project footprint. Bare-root seedlings were planted at a density of 600 trees per acre. Shrubs were planted at densities of 1,000 to 1,200 plants per acre. On-site planting was completed in February 2006.

Refer to Table 2 for a list of species planted (with corresponding quantities) within the buffer restoration area.

III. METHODOLOGY & SUCCESS CRITERIA

Annual monitoring is being conducted near the end of each growing season for a period of five years. Vegetative monitoring has included the establishment of thirteen (13) 0.10-acre permanent plots corresponding to a total of 1.3 acres (equivalent to 5% of the restoration area). The locations of the monitoring plots are depicted in Figure 3. Vegetative planting will be deemed successful if survivorship of plantings and volunteers of desirable species[1] meets or exceeds a target stem density of 320 stems/acre.

Monitoring reports are being submitted annually to the EEP (by January 1 of each year). These reports 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.

IV. MONITORING

A total of 1,548 stems (planted and volunteer shrubs/trees) were observed within the thirteen 0.10-acre plots. Of the total observed, 1,091 stems (total excluding red maple and sweet gum) were counted toward the success criteria (corresponding to an average of 839 stems/acre). Of the species planted, American sycamore (*Platanus occidentalis*) was the most abundant tree

observed within the thirteen monitoring plots. Refer to Table 3 for a summary of results related to species abundance and target stem densities. In addition, individual plot data sheets are provided in Appendix B.

During site inspections of Summer 2006, LMG identified the presence of a large scale infestation of common morning glory (*Ipomoea purpurea*). LMG conducted selective physical removal of vines prior to monitoring the site. Though the morning glory was widespread across the site, survivorship of planted trees and shrubs remained high. Given the presence of this invasive species, LMG arranged for the application of a pre-emergent herbicide application (Oust™) prior to the start of the growing season in 2007. This work was coordinated through, and conducted by a licensed applicator.

Due to suppressed growth of planted seedlings throughout the site a supplemental planting was conducted in February 2007. A total of 12,000 river birch, green ash, and wax myrtle were planted in areas that experienced reduced survivorship and/or suppressed growth. Given the persistence of the morning glory, the pre-emergent herbicide will again be applied prior to the growing season in 2008. It appears as though most plantings have a competitive advantage over the morning glory. Thus it is believed that no further remedial action will be necessary.

V. CONCLUSION

LMG has completed the second year monitoring for the 26.3 acres of riparian buffer restoration located in NEU-7 of the lower Neuse Basin. Stem densities within all thirteen plots well exceed the 320 stems/acre target density for restored buffer habitats. The total observed density (839 stems/acre) indicates that the site is progressing well toward the target maturity density. The presence of morning glory will be monitored during the early growing season. Spot treatment with pre-emergent herbicide application should keep this invasive vine sufficiently controlled as to allow for the continued growth and development of planted trees and shrubs.

Reversion of agricultural land to wooded riparian buffer will decrease source nutrient loading and concurrently increase nutrient removal capacity. In addition, the project will provide ancillary

[1]Desirable species are considered as noninvasive species characteristic of riparian habitats of the Coastal Plain.

benefits to aquatic and wildlife habitat 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 riparian buffers within the Neuse Basin.

TABLES

Table 1. Reporting and Milestone History

	Project Milestone	Completion Date	COMMENTS
1	Feasibility Study, CE Document, and Public Meeting	September, 2005	Complete
2	Record a Conservation Easement on the Site	January 2006	Conveyed to SPO
3	Restoration Plan Approved by EEP		
4	Mitigation Site Earthwork Completed	January 2006	
5	Mitigation Site Planting and Installation of Monitoring Devices	February 15, 2006	Complete
6	Submittal of Mitigation Plan (including as-built drawings)	June 2006	Complete
7	Submittal of Monitoring Report #1 to EEP	December 31, 2006	Approved by NCEEP
8	Submittal of Monitoring Report #2 to EEP	December 31, 2007	
9	Submittal of Monitoring Report #3 to EEP	December 31, 2008	
10	Submittal of Monitoring Report #4 to EEP	December 31, 2009	
11	Submittal of Monitoring Report #5 to EEP	December 31, 2010	

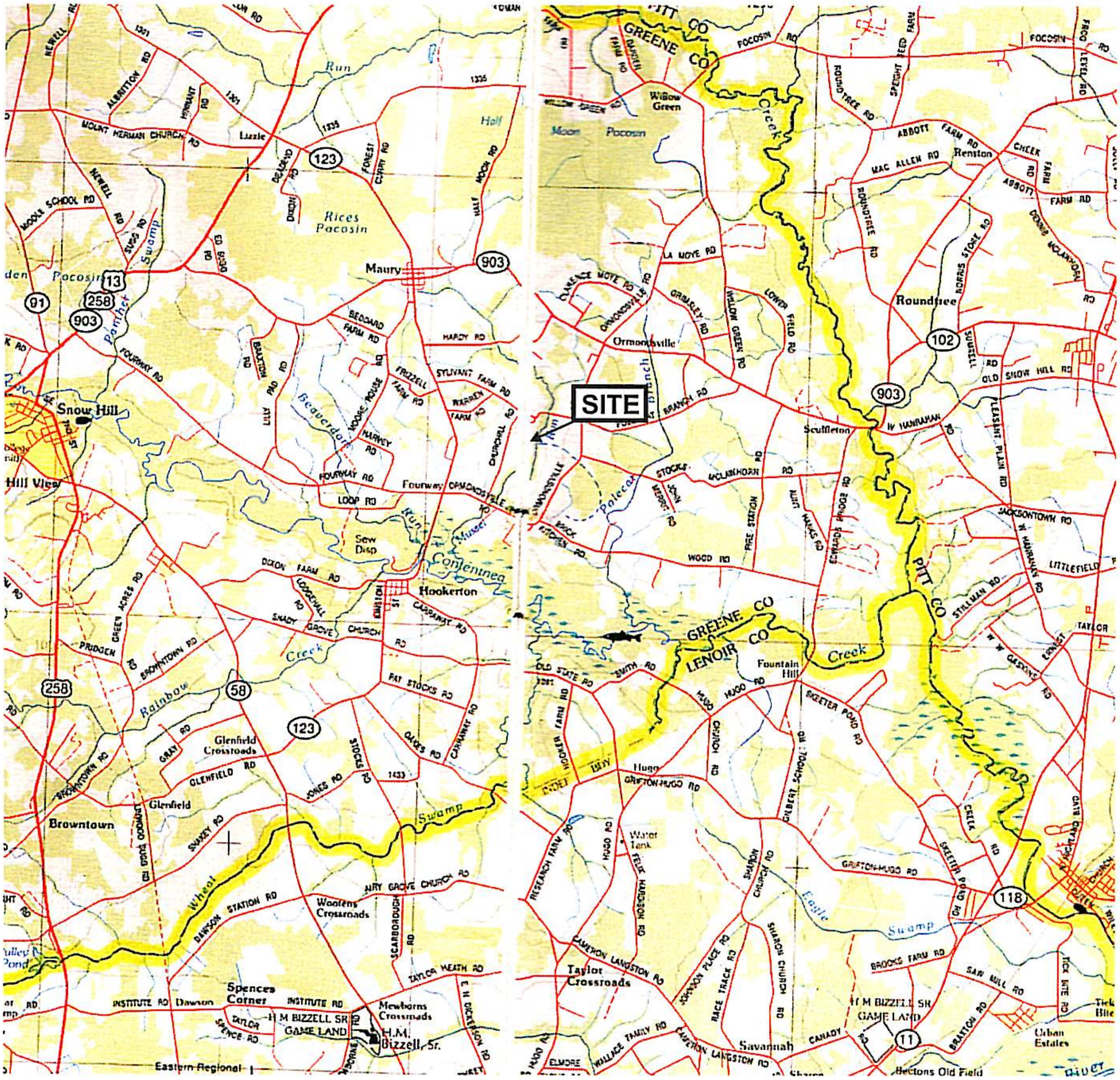
Table 2. Howard Farm Plant List

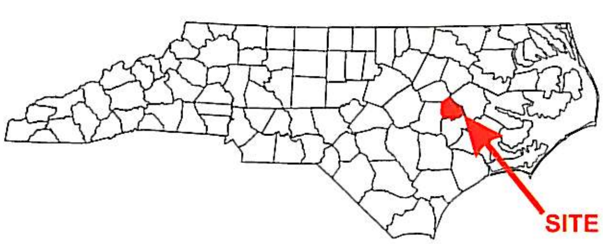
Species (trees)	Quantity
River Birch (*Betula nigra*)	2,000
Sycamore (*Platanus occidentalis*)	2,000
Green Ash (*Fraxinus pennsylvanica*)	1,000
Willow Oak (*Quercus phellos*)	1,000
Overcup Oak (*Quercus lyrata)*	1,000
Water Oak (*Quercus nigra*)	2,000
Black Gum (*Nyssa sylvatica*)	1,000
Red Bay (*Persea borbonia*)	2,000
Species (shrubs)	
Wax Myrtle (*Myrica cerifera*)	2,000
Sweet pepperbush (*Clethra alnifolia*)	2,000
Elderberry (*Sambucus canadensis*)	2,000
American Beautyberry (*Callicarpa americana*)	1,000
Possumhaw (*Viburnum nudum*)	1,000
Supplemental Planting (February 2007)	
Green Ash (*Fraxinus pennsylvanica*)	4,000
River Birch (*Betula nigra*)	4,000
Wax Myrtle (*Myrica cerifera*)	4,000
TOTAL	**32,000**

TABLE 3. ANNUAL MONITORING DATA SHEET (YEAR 2) - VEGETATION PLOTS
HOWARD FARM RIPARIAN BUFFER SITE

SPECIES	PLOT 1	PLOT 2	PLOT 3	PLOT 4	PLOT 5	PLOT 6	PLOT 7	PLOT 8	PLOT 9	PLOT 10	PLOT 11	PLOT 12	PLOT 13	TOTAL
Sycamore	10			3	9			36	41		67	4	22	192
Red Maple				10	15	50	40		10					125
Sweet Gum	2	100		20	20	80	40		10	30		30		332
Green Ash	7	5	9	5	14	7	5	1		3		4	1	61
Wax Myrtle	5			1	4	16	23	3		9		23		84
River Birch		5	2	12	11	3	7	3	11	6	26		40	126
Blackgum								4	7				1	12
Amer. Beautyberry	18	36	13			8	20		3	17		13		128
Persimmon	3	4	7											14
Elderberry		4	15	1	4	14	9	9	12	20	1	6	3	98
Water Oak			8											8
Overcup Oak				8	16	4								28
Willow Oak			1	6	4	2			1					14
Black Willow								2	1	1				4
Loblolly Pine	1	30	7		1		2	4	1	1		6	1	54
Possumhaw	2	6	11											19
Highbush Blueberry								2	14	26	1			43
Sweet Pepperbush			4			1	1					3		9
Red Cedar	1					9	5					8		23
Tulip Poplar						2	1							3
Sweetbay		1	5									2		8
Red Bay		2		5	17					1		5		30
Eastern False Willow	3	13	8	17	24	9	6	9	14	17		12	1	133
TOTAL	**52**	**206**	**90**	**88**	**139**	**205**	**159**	**73**	**125**	**131**	**95**	**116**	**69**	**1548**
Total Counted toward Success	**50**	**106**	**90**	**58**	**104**	**75**	**79**	**73**	**105**	**101**	**95**	**86**	**69**	**1091**
Stem Density (per ac)	**500**	**1060**	**900**	**580**	**1040**	**750**	**790**	**730**	**1050**	**1010**	**950**	**860**	**690**	**839**

FIGURES

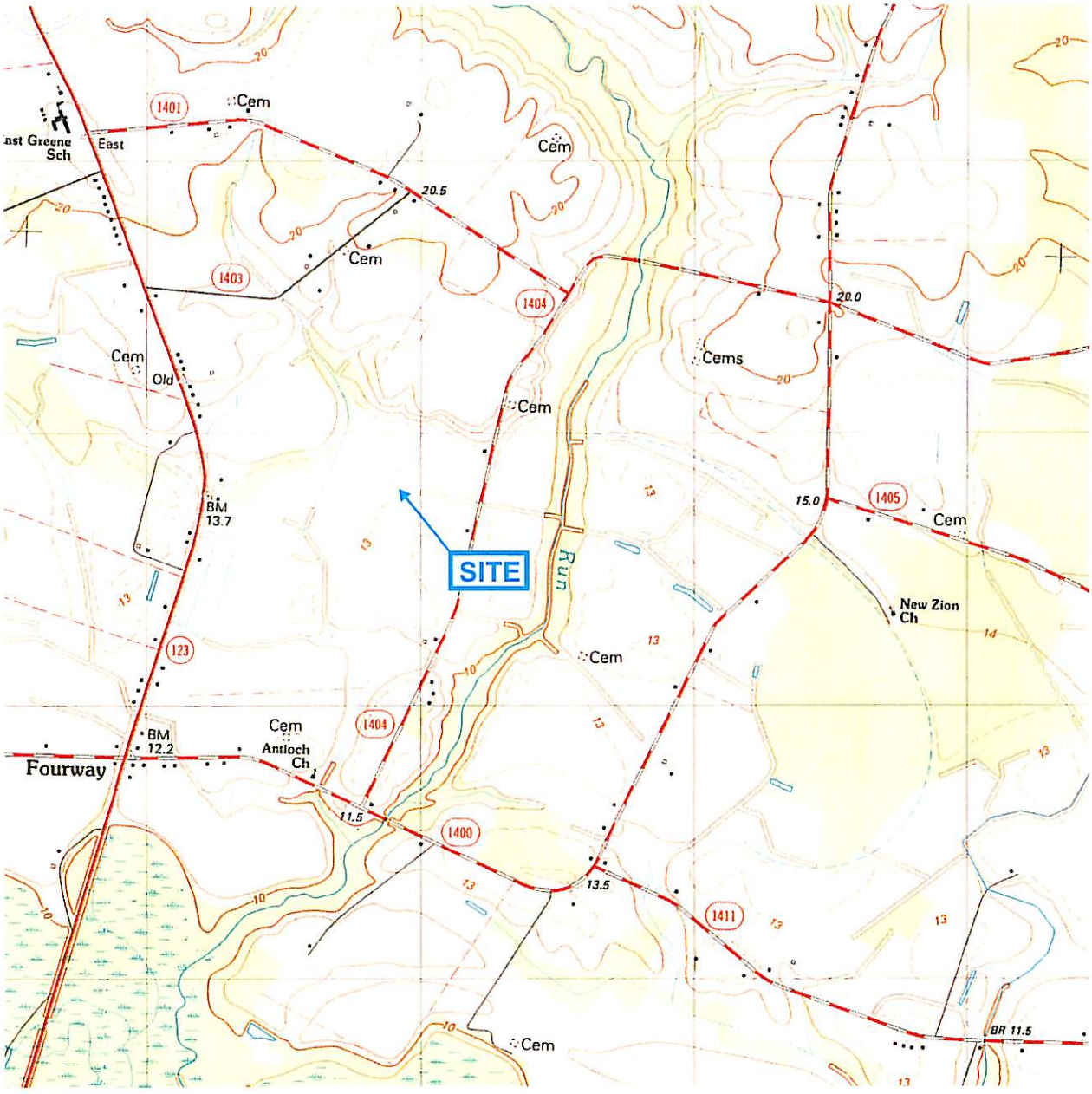




SCALE 1" = 2.0 miles

Map Source: DeLorme: North Carolina Atlas and Gazetteer., 1997 p. 46.

NC EEP Howard Farm Buffer Restoration Project Greene County	LMG LAND MANAGEMENT GROUP INC. Environmental Consultants	**Figure 1.** Site Location Map



Boundaries are approximate and not meant to be absolute.

Map Source: 1982, USGS 7.5' Topographic Quadrangle. Hookerton Quadrangle

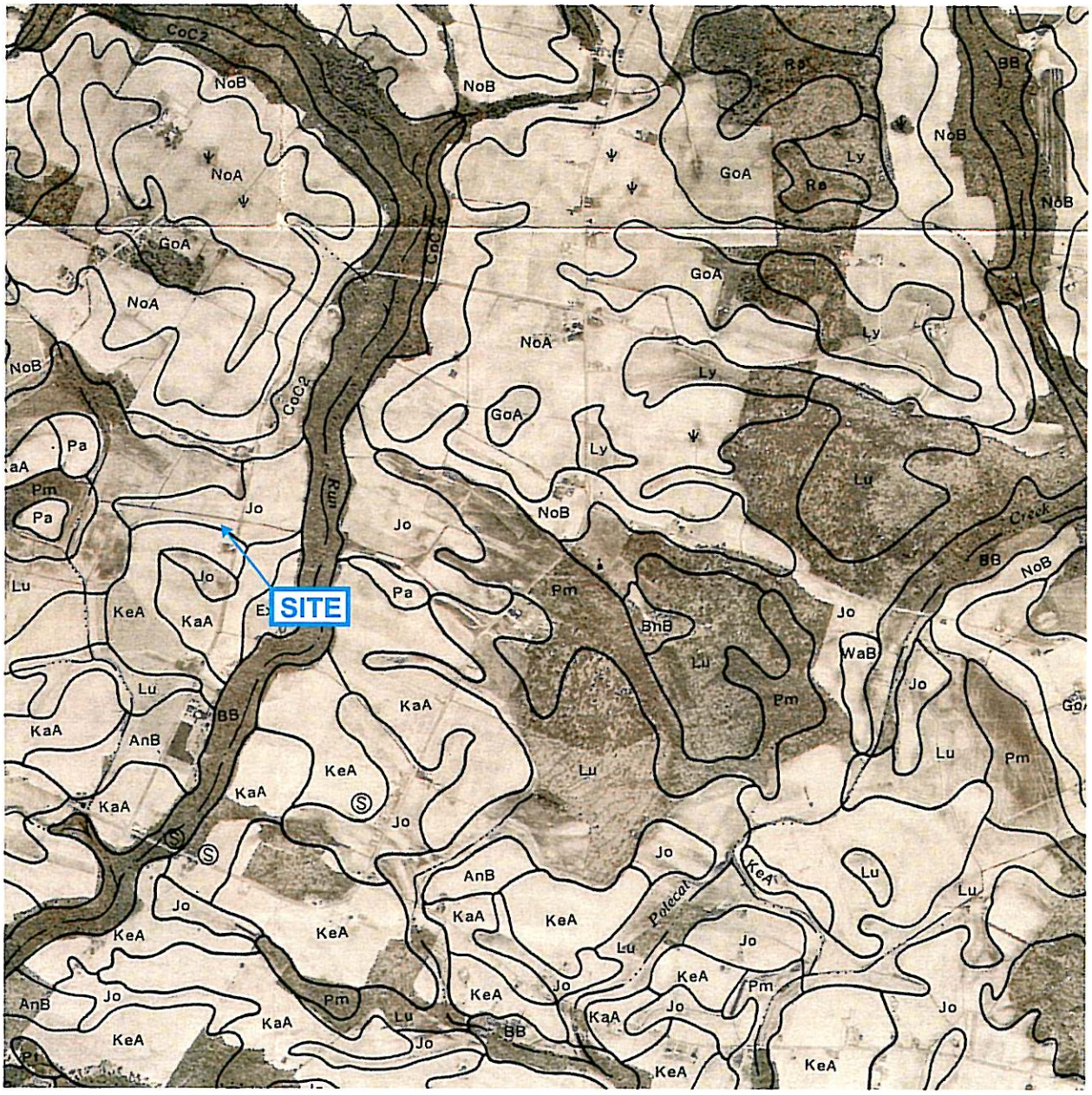
N

SCALE 1" = 2000'

NC EEP
Howard Farm
Buffer Restoration Project
Greene County

LMG
LAND MANAGEMENT GROUP INC
Environmental Consultants

Figure 2.
1982 Topographic Quad



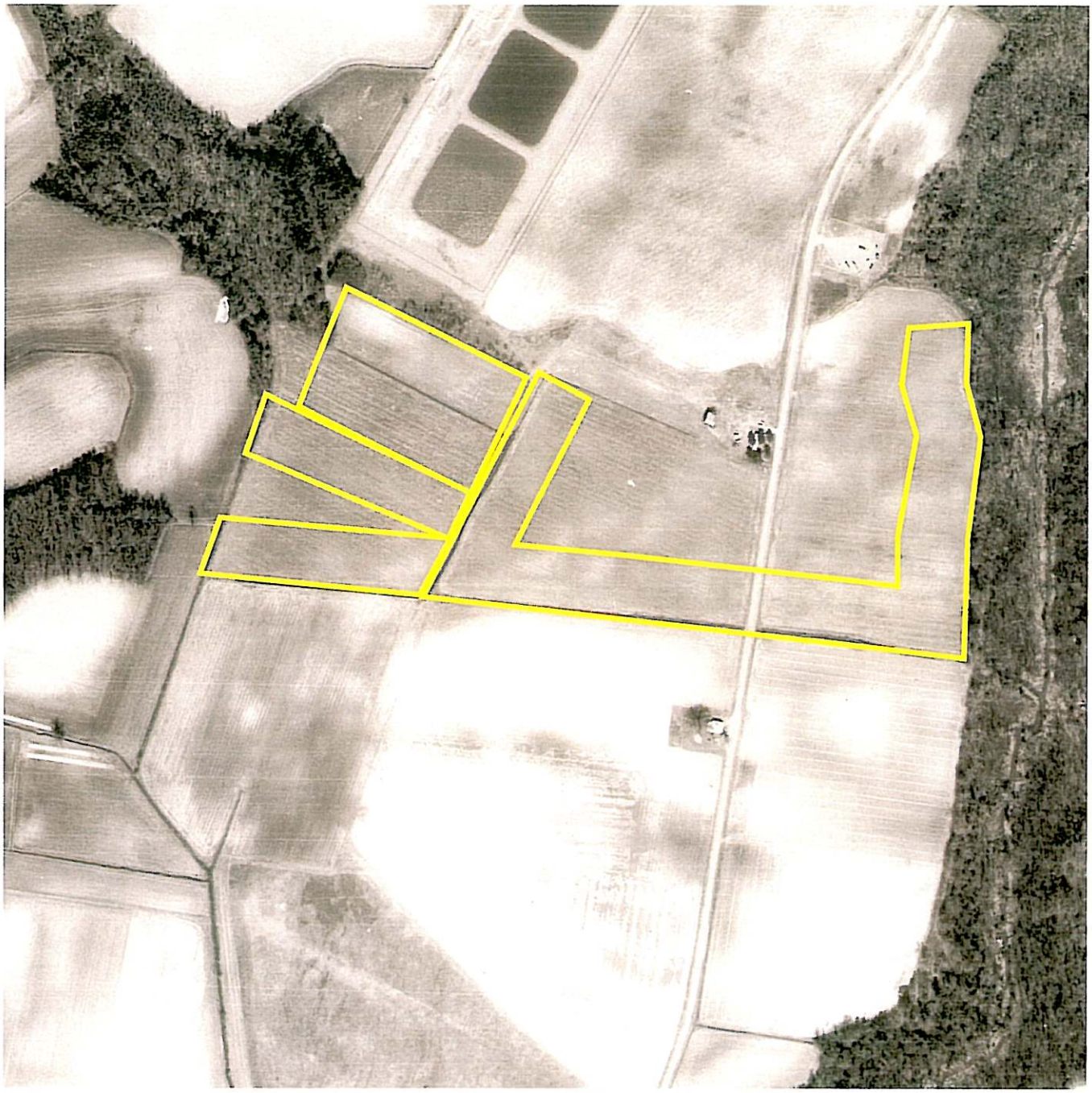
Boundaries are approximate
and not meant to be absolute.

Map Source: Soil Survey of Greene County , 1977.

N

SCALE 1" = 2000'

NC EEP Howard Farm Buffer Restoration Project Greene County	LMG LAND MANAGEMENT GROUP INC. *Environmental Consultants*	**Figure 3.** Generalized Soil Map Greene County, NC



200' Buffer Planting Area (26.3 acres)

N

SCALE 1" = 500'

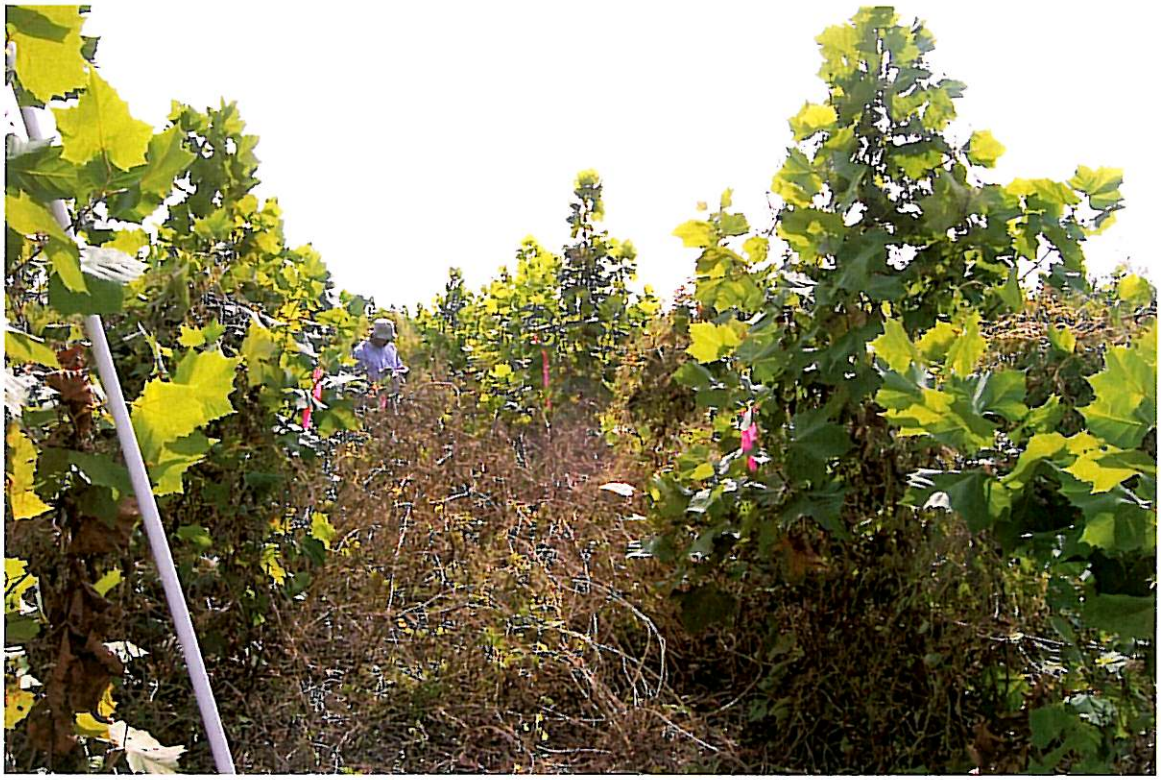
Boundaries are approximate
and not meant to be absolute.

Map Source: Soil Survey of Greene County , 1977.

NC EEP Howard Farm Buffer Restoration Project Greene County	LMG LAND MANAGEMENT GROUP INC. *Environmental Consultants*	**Figure 4.** Buffer Planting Overview

APPENDIX A. SITE PHOTOGRAPHS (SEPTEMBER 2007)

1) View of conditions at Plot 10



2) View of sycamore saplings in Plot 12

Howard Farm Buffer Restoration Project Greene County, NC	LMG LAND MANAGEMENT GROUP INC. *Environmental Consultants*	Site Photographs September 2007 (Annual Monitoring Year 2 of 5)

3) View of seedlings at Plot 8

4) View of seedlings at Plot 13

5) Conditions at Plot 3 prior to manual clearing

6) View of river birch sapling at Plot 6

APPENDIX B. INDIVIDUAL PLOT DATA SHEETS

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 1

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
American Beautyberry	SH	4	<2ft.	Planted	4
American Beautyberry	SH	8	2ft.	Planted	8
American Beautyberry	SH	4	3ft.	Planted	4
American Beautyberry	SH	2	4ft.	Planted	2
Possumhaw	SH	2	2.5 ft.	Planted	2
Wax Myrtle	SH	1	1ft.	Planted	1
Wax Myrtle	SH	4	2.5 ft.	Planted	4
American Sycamore	SA	1	<2ft	Planted	1
American Sycamore	SA	3	2ft	Planted	3
American Sycamore	SA	3	3ft.	Planted	3
American Sycamore	SA	2	4ft.	Planted	2
American Sycamore	SA	1	5ft.	Planted	1
Green Ash	SA	1	<2ft.	Planted	1
Green Ash	SA	2	2ft.	Planted	2
Green Ash	SA	1	3ft.	Planted	1
Green Ash	SA	2	4ft.	Planted	2
Green Ash	SA	1	6ft.	Planted	1
Persimmon	SA	1	2ft	Planted	1
Persimmon	SA	1	4ft.	Planted	1
Persimmon	SA	1	5ft.	Planted	1
Sweet bay	SA	2	<2ft	Planted	2
Baccharis	SH	1	4ft.	Volunteer	1
Baccharis	SH	2	5ft.	Volunteer	2
Loblolly Pine	SA	1	2ft.	Volunteer	1
Red Cedar	SA	1	<2ft.	Planted	1

Sweet Gum	SA	1	2ft.	Volunteer	0
Sweet Gum	SA	1	4ft.	Volunteer	0
	TOTAL SHRUBS	28		OBSERVED DENSITY (PER PLOT)	52
	TOTAL TREES OF PLANTED SPECIES	23		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	2			
	TOTAL INDIVIDUALS	54			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER **2**

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Amer. Beautyberry	SH	1	<2ft.	Planted	1
Amer. Beautyberry	SH	1	2ft.	Planted	1
Amer. Beautyberry	SH	2	2.5ft.	Planted	2
Amer. Beautyberry	SH	2	3ft.	Planted	2
Amer. Beautyberry	SH	2	3.5ft.	Planted	2
Amer. Beautyberry	SH	5	4ft.	Planted	5
Amer. Beautyberry	SH	4	4.5ft.	Planted	4
Amer. Beautyberry	SH	9	5ft	Planted	9
Amer. Beautyberry	SH	5	5.5ft	Planted	5
Amer. Beautyberry	SH	3	6ft	Planted	3
Amer. Beautyberry	SH	2	6.5ft	Planted	2
Baccharis	SH	2	3ft.	Volunteer	2
Baccharis	SH	1	3.5ft.	Volunteer	1
Baccharis	SH	1	4ft.	Volunteer	1
Baccharis	SH	1	4.5ft	Volunteer	1
Baccharis	SH	1	5ft	Volunteer	1
Baccharis	SH	2	5.5ft	Volunteer	2
Baccharis	SH	3	6ft	Volunteer	3
Baccharis	SH	2	6.5ft	Volunteer	2
Possumhaw	SH	3	2ft.	Planted	3
Possumhaw	SH	1	2.5ft	Planted	1
Possumhaw	SH	2	3ft.	Planted	2
Elderberry	SH	1	2ft.	Planted	1
Elderberry	SH	1	3ft.	Planted	1
Elderberry	SH	2	4ft.	Planted	2
Persimmon	SA	1	2.5ft	Planted	1
Persimmon	SA	1	6ft	Planted	1
Persimmon	SA	2	9ft	Planted	2
River Birch	SA	1	2ft.	Planted	1
River Birch	SA	2	3ft.	Planted	2
River Birch	SA	1	4ft.	Planted	1

River Birch	SA	1	4.5ft.	Planted	1
Red Bay	SA	2	<2ft.	Planted	2
Sweet Bay	SA	1	<2ft.	Planted	1
Green Ash	SA	1	<2ft.	Planted	1
Green Ash	SA	1	2.5ft	Planted	1
Green Ash	SA	1	3ft.	Planted	1
Green Ash	SA	1	3.5ft.	Planted	1
Green Ash	SA	1	4ft.	Planted	1
Loblolly Pine	SA	4	<2ft.	Volunteer	4
Loblolly Pine	SA	11	2ft.	Volunteer	11
Loblolly Pine	SA	4	2.5ft	Volunteer	4
Loblolly Pine	SA	7	3ft.	Volunteer	7
Loblolly Pine	SA	3	4ft.	Volunteer	3
Loblolly Pine	SA	1	4.5	Volunteer	1
Sweet Gum	SA	50	<5ft	Volunteer	0
Sweet Gum	SA	50	>5ft	Volunteer	0
	TOTAL SHRUBS	59		OBSERVED DENSITY (PER PLOT)	106
	TOTAL TREES OF PLANTED SPECIES	17		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	130			
	TOTAL INDIVIDUALS	206			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 3

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Amer. Beautyberry	SH	5	<2ft.	Planted	5
Amer. Beautyberry	SH	1	2ft.	Planted	1
Amer. Beautyberry	SH	4	2.5ft.	Planted	4
Amer. Beautyberry	SH	2	3ft.	Planted	2
Amer. Beautyberry	SH	1	3.5ft.	Planted	1
Elderberry	SH	1	<2ft.	Planted	1
Elderberry	SH	2	2ft.	Planted	2
Elderberry	SH	3	3ft.	Planted	3
Elderberry	SH	2	3.5ft.	Planted	2
Elderberry	SH	2	4ft.	Planted	2
Elderberry	SH	2	4.5ft	Planted	2
Elderberry	SH	3	5ft	Planted	3
Sweet Pepperbush	SH	4	<2ft.	Planted	4
Possumhaw	SH	7	<2ft.	Planted	7
Possumhaw	SH	4	2ft.	Planted	4
Baccharis	SH	1	<2ft.	Volunteer	1
Baccharis	SH	1	2.5 ft.	Volunteer	1
Baccharis	SH	1	3.5ft.	Volunteer	1
Baccharis	SH	3	4ft.	Volunteer	3
Baccharis	SH	2	4.5ft	Volunteer	2
Persimmon	SA	1	2ft.	Planted	1
Persimmon	SA	3	3ft.	Planted	3
Persimmon	SA	1	3.5ft.	Planted	1
Persimmon	SA	2	6ft	Planted	2
River Birch	SA	2	3ft.	Planted	2
Water Oak	SA	4	<2ft.	Planted	4
Water Oak	SA	2	2ft.	Planted	2
Water Oak	SA	2	3ft.	Planted	2
Sweet Bay	SA	5	<2ft.	Planted	5
Green Ash	SA	4	<2ft.	Planted	4
Green Ash	SA	1	2ft.	Planted	1

Green Ash	SA	4	2.5ft	Planted	4
Willow oak	SA	1	2.5 ft.	Planted	1
Loblolly Pine	SA	3	<2ft.	Volunteer	3
Loblolly Pine	SA	4	2.5 ft.	Volunteer	4
	TOTAL SHRUBS	51		OBSERVED DENSITY (PER PLOT)	90
	TOTAL TREES OF PLANTED SPECIES	32		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	7			
	TOTAL INDIVIDUALS	90			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 4

SPECIES	STRATUM	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	2	3ft	Volunteer	2
Baccharis	SH	9	4ft	Volunteer	9
Baccharis	SH	4	5ft	Volunteer	4
Baccharis	SH	1	6ft	Volunteer	1
Baccharis	SH	1	7ft	Volunteer	1
Elderberry	SH	1	2ft	Planted	1
Wax Myrtle	SH	1	2ft	Planted	1
Overcup Oak	SA	1	<2ft	Planted	1
Overcup Oak	SA	1	2ft	Planted	1
Overcup Oak	SA	4	3ft	Planted	4
Overcup Oak	SA	1	4ft	Planted	1
Overcup Oak	SA	1	5ft	Planted	1
River Birch	SA	1	<2ft	Planted	1
River Birch	SA	8	2ft	Planted	8
River Birch	SA	2	3ft	Planted	2
River Birch	SA	1	4ft	Planted	1
American Sycamore	SA	3	8ft	Planted	3
Red Bay	SA	3	<2ft	Planted	3
Red Bay	SA	2	2ft.	Planted	2
Willow Oak	SA	3	<2ft.	Planted	3
Willow Oak	SA	1	2ft.	Planted	1
Willow Oak	SA	2	3ft	Planted	2
Green Ash	SA	3	<2ft.	Planted	3
Green Ash	SA	2	3ft	Planted	2
Sweet Gum	SA	20	<2ft	Volunteer	0
Red Maple	SA	10	<2ft	Volunteer	0
	TOTAL SHRUBS	19		OBSERVED DENSITY (PER PLOT)	58
	TOTAL TREES OF PLANTED SPECIES	39		OBSERVED DENSITY (PER ACRE)	

	TOTAL TREES OF VOLUNTEER SPECIES	30			
	TOTAL INDIVIDUALS	88			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 5

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	5	2ft	Volunteer	5
Baccharis	SH	8	3ft	Volunteer	8
Baccharis	SH	10	4ft	Volunteer	10
Baccharis	SH	1	5ft	Volunteer	1
Wax Myrtle	SH	4	<2ft	Planted	4
Elderberry	SH	3	<2ft	Planted	3
Elderberry	SH	1	2ft	Planted	1
River Birch	SA	1	2ft	Planted	1
River Birch	SA	7	3ft	Planted	7
River Birch	SA	2	4ft	Planted	2
River Birch	SA	1	5ft	Planted	1
Overcup Oak	SA	11	2ft	Planted	11
Overcup Oak	SA	4	3ft	Planted	4
Overcup Oak	SA	1	6ft	Planted	1
Willow Oak	SA	1	<2ft	Planted	1
Willow Oak	SA	1	2ft	Planted	1
Willow Oak	SA	2	3ft	Planted	2
American Sycamore	SA	1	6ft	Planted	1
American Sycamore	SA	4	7ft	Planted	4
American Sycamore	SA	4	8ft	Planted	4
Green Ash	SA	4	<2ft	Planted	4
Green Ash	SA	2	2ft	Planted	2
Green Ash	SA	3	3ft	Planted	3
Green Ash	SA	1	4ft	Planted	1
Green Ash	SA	2	5ft	Planted	2
Green Ash	SA	1	7ft	Planted	1
Green Ash	SA	1	8ft	Planted	1
Red Bay	SA	8	<2ft	Planted	8
Red Bay	SA	7	2ft	Planted	7
Red Bay	SA	2	3ft	Planted	2
Loblolly Pine	SA	1	<2ft	Volunteer	1

Sweet Gum	SA	20	<2ft	Volunteer	0
Red Maple	SA	15	<2ft	Volunteer	0
	TOTAL SHRUBS	32		OBSERVED DENSITY (PER PLOT)	104
	TOTAL TREES OF PLANTED SPECIES	71		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	36			
	TOTAL INDIVIDUALS	139			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 6

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Amer. Beautyberry	SH	1	<2ft	Planted	1
Amer. Beautyberry	SH	2	3ft	Planted	2
Amer. Beautyberry	SH	4	4ft	Planted	4
Amer. Beautyberry	SH	1	5ft	Planted	1
Sweet Pepperbush	SH	1	<2ft	Planted	1
Elderberry	SH	2	2ft	Planted	2
Elderberry	SH	4	3ft	Planted	4
Elderberry	SH	5	4ft	Planted	5
Elderberry	SH	3	5ft	Planted	3
Baccharis	SH	3	3ft	Volunteer	3
Baccharis	SH	6	4ft	Volunteer	6
Wax Myrtle	SH	5	<2ft	Planted	5
Wax Myrtle	SH	5	2ft	Planted	5
Wax Myrtle	SH	6	3ft	Planted	6
River Birch	SA	1	6ft	Planted	1
River Birch	SA	1	7ft	Planted	1
River Birch	SA	1	8ft	Planted	1
Overcup Oak	SA	1	2ft	Planted	1
Overcup Oak	SA	1	3ft	Planted	1
Overcup Oak	SA	2	5ft	Planted	2
Willow Oak	SA	1	<2ft	Planted	1
Willow Oak	SA	1	3ft	Planted	1
Tulip Poplar	SA	1	<2ft	Volunteer	1
Tulip Poplar	SA	1	3ft	Volunteer	1
Green Ash	SA	1	<2ft	Planted	1
Green Ash	SA	4	2ft	Planted	4
Green Ash	SA	1	3ft	Planted	1
Green Ash	SA	1	4ft	Planted	1
Red Cedar	SA	1	<2ft	Planted	1
Red Cedar	SA	4	2ft	Planted	4
Red Cedar	SA	4	3ft	Planted	4

Sweet Gum	SA	80	2ft	Volunteer	0
Red Maple	SA	50	<2ft	Volunteer	0
	TOTAL SHRUBS	48		OBSERVED DENSITY (PER PLOT)	75
	TOTAL TREES OF PLANTED SPECIES	27		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	130			
	TOTAL INDIVIDUALS	205			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 7

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	1	3ft	Volunteer	1
Baccharis	SH	3	5ft	Volunteer	3
Baccharis	SH	2	6ft	Volunteer	2
Amer. Beautyberry	SH	5	2ft	Planted	5
Amer. Beautyberry	SH	11	3ft	Planted	11
Amer. Beautyberry	SH	3	4ft	Planted	3
Amer. Beautyberry	SH	1	5ft	Planted	1
Wax Myrtle	SH	1	<2ft	Planted	1
Wax Myrtle	SH	3	2ft	Planted	3
Wax Myrtle	SH	5	3ft	Planted	5
Wax Myrtle	SH	9	4ft	Planted	9
Wax Myrtle	SH	1	5ft	Planted	1
Wax Myrtle	SH	4	6ft	Planted	4
Sweet Pepperbush	SH	1	<2ft	Planted	1
Elderberry	SH	1	3ft	Planted	1
Elderberry	SH	5	4ft	Planted	5
Elderberry	SH	1	5ft	Planted	1
Elderberry	SH	2	6ft	Planted	2
Tulip Poplar	SA	1	4ft	Volunteer	1
River Birch	SA	1	4ft	Planted	1
River Birch	SA	2	6ft	Planted	2
River Birch	SA	4	8ft	Planted	4
Green Ash	SA	2	2ft	Planted	2
Green Ash	SA	1	3ft	Planted	1
Green Ash	SA	1	4ft	Planted	1
Green Ash	SA	1	5ft	Planted	1
Red Cedar	SA	1	2ft	Planted	1
Red Cedar	SA	3	3ft	Planted	3
Red Cedar	SA	1	4ft	Planted	1
Loblolly Pine	SA	1	<2ft	Volunteer	1
Loblolly Pine	SA	1	2ft	Volunteer	1

Sweet Gum	SA	40	1ft	Volunteer	0
Red Maple	SA	40	1ft	Volunteer	0
	TOTAL SHRUBS	59		OBSERVED DENSITY (PER PLOT)	79
	TOTAL TREES OF PLANTED SPECIES	17		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	82			
	TOTAL INDIVIDUALS	159			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 8

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Wax myrtle	SH	3	2.5 ft.	Planted	3
Baccharis	SH	2	2.5 ft.	Volunteer	2
Baccharis	SH	3	4ft	Volunteer	3
Baccharis	SH	4	5ft	Volunteer	4
Elderberry	SH	1	<2ft	Planted	1
Elderberry	SH	1	2ft	Planted	1
Elderberry	SH	3	3ft	Planted	3
Elderberry	SH	3	4ft	Planted	3
Elderberry	SH	1	6ft	Planted	1
Highbush Blueberry	SH	1	2ft	Volunteer	1
Highbush Blueberry	SH	1	3ft	Volunteer	1
River Birch	SA	3	3ft	Planted	3
American Sycamore	SA	4	4ft	Planted	4
American Sycamore	SA	4	5ft	Planted	4
American Sycamore	SA	4	6ft	Planted	4
American Sycamore	SA	2	7ft	Planted	2
American Sycamore	SA	12	8ft	Planted	12
American Sycamore	SA	7	10ft	Planted	7
American Sycamore	SA	3	12ft	Planted	3
Green Ash	SA	1	2.5 ft.	Planted	1
Blackgum	SA	4	3ft.	Planted	4
Black Willow	SA	1	2.5 ft.	Volunteer	1
Black Willow	SA	1	4ft	Volunteer	1
Loblolly Pine	SA	4	2ft	Volunteer	4
	TOTAL SHRUBS	23		OBSERVED DENSITY (PER PLOT)	73
	TOTAL TREES OF PLANTED SPECIES	44		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	6			
	TOTAL INDIVIDUALS	73			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 9

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
American Beautyberry	SH	3	2.5 ft.	Planted	3
Baccharis	SH	6	3ft	Volunteer	6
Baccharis	SH	5	4ft	Volunteer	5
Baccharis	SH	1	5ft	Volunteer	1
Baccharis	SH	2	6ft	Volunteer	2
Elderberry	SH	3	2ft	Planted	3
Elderberry	SH	5	3ft	Planted	5
Elderberry	SH	1	4ft	Planted	1
Elderberry	SH	1	5ft	Planted	1
Elderberry	SH	2	6ft	Planted	2
Highbush Blueberry	SH	10	2ft	Planted	10
Highbush Blueberry	SH	4	3ft	Planted	4
River Birch	SA	3	2.5 ft.	Planted	3
River Birch	SA	1	5ft	Planted	1
River Birch	SA	2	6ft	Planted	2
River Birch	SA	3	8ft	Planted	3
River Birch	SA	2	10ft	Planted	2
American Sycamore	SA	2	2ft	Planted	2
American Sycamore	SA	1	3ft	Planted	1
American Sycamore	SA	2	5ft	Planted	2
American Sycamore	SA	2	6ft	Planted	2
American Sycamore	SA	2	7ft	Planted	2
American Sycamore	SA	6	8ft	Planted	6
American Sycamore	SA	6	10ft	Planted	6
American Sycamore	SA	19	12ft	Planted	19
American Sycamore	SA	1	14ft	Planted	1
Blackgum	SA	7	3.5 ft.	Planted	7
Willow Oak	SA	1	<2ft	Planted	1
Black willow	SA	1	2.5 ft.	Volunteer	1
Loblolly Pine	SA	1	2ft	Volunteer	1
Sweet Gum	SA	10	1ft	Volunteer	0

Red Maple	SA	10	1ft	Volunteer	0
	TOTAL SHRUBS	40		OBSERVED DENSITY (PER PLOT)	105
	TOTAL TREES OF PLANTED SPECIES	60		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	22			
	TOTAL INDIVIDUALS	125			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER **10**

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	1	<2ft	Volunteer	1
Baccharis	SH	2	2ft	Volunteer	2
Baccharis	SH	5	3ft	Volunteer	5
Baccharis	SH	6	4ft	Volunteer	6
Baccharis	SH	3	5ft	Volunteer	3
Wax Myrtle	SH	2	<2ft	Planted	2
Wax Myrtle	SH	3	2ft	Planted	3
Wax Myrtle	SH	2	3ft	Planted	2
Wax Myrtle	SH	2	4ft	Planted	2
Highbush Blueberry	SH	2	<2ft	Planted	2
Highbush Blueberry	SH	13	2ft	Planted	13
Highbush Blueberry	SH	11	3ft	Planted	11
Elderberry	SH	1	<2ft	Planted	1
Elderberry	SH	4	2ft	Planted	4
Elderberry	SH	8	3ft	Planted	8
Elderberry	SH	6	4ft	Planted	6
Elderberry	SH	1	5ft	Planted	1
Amer. Beautyberry	SH	7	<2ft.	Planted	7
Amer. Beautyberry	SH	5	2ft.	Planted	5
Amer. Beautyberry	SH	4	3ft	Planted	4
Amer. Beautyberry	SH	1	4ft	Planted	1
River Birch	SA	1	2ft	Planted	1
River Birch	SA	2	3ft	Planted	2
River Birch	SA	2	4ft	Planted	2
River Birch	SA	1	6ft	Planted	1
Green Ash	SA	1	<2ft	Planted	1
Green Ash	SA	1	2ft	Planted	1
Green Ash	SA	1	3ft	Planted	1
Red Bay	SA	1	2ft	Planted	1
Black Willow	SA	1	4ft	Volunteer	1
Loblolly Pine	SA	1	2ft	Volunteer	1

Sweet Gum	SA	30	1ft	Volunteer	0
	TOTAL SHRUBS	89		OBSERVED DENSITY (PER PLOT)	101
	TOTAL TREES OF PLANTED SPECIES	10		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	32			
	TOTAL INDIVIDUALS	131			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER **11**

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Highbush Blueberry	SH	1	2ft	Planted	1
Elderberry	SH	1	4ft	Planted	1
River Birch	SA	12	3ft	Planted	12
River Birch	SA	8	4ft	Planted	8
River Birch	SA	4	5ft	Planted	4
River Birch	SA	2	6ft	Planted	2
American Sycamore	SA	1	2ft	Planted	1
American Sycamore	SA	8	3ft	Planted	8
American Sycamore	SA	6	4ft	Planted	6
American Sycamore	SA	14	5ft	Planted	14
American Sycamore	SA	14	6ft	Planted	14
American Sycamore	SA	4	7ft	Planted	4
American Sycamore	SA	8	8ft	Planted	8
American Sycamore	SA	5	9ft	Planted	5
American Sycamore	SA	4	10ft	Planted	4
American Sycamore	SA	3	12ft	Planted	3
	TOTAL SHRUBS	2		OBSERVED DENSITY (PER PLOT)	95
	TOTAL TREES OF PLANTED SPECIES	93		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	0			
	TOTAL INDIVIDUALS	95			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 12

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	2	<2ft	Volunteer	2
Baccharis	SH	2	2ft	Volunteer	2
Baccharis	SH	1	3ft	Volunteer	1
Baccharis	SH	1	4ft	Volunteer	1
Baccharis	SH	3	4.5ft	Volunteer	3
Baccharis	SH	2	5ft	Volunteer	2
Baccharis	SH	1	5.5ft	Volunteer	1
Wax Myrtle	SH	7	<2ft	Planted	7
Wax Myrtle	SH	7	2ft	Planted	7
Wax Myrtle	SH	2	2.5ft	Planted	2
Wax Myrtle	SH	6	3ft	Planted	6
Wax Myrtle	SH	1	3.5ft	Planted	1
Sweet Pepperbush	SH	3	<2ft	Planted	3
Elderberry	SH	1	2ft	Planted	1
Elderberry	SH	2	3ft	Planted	2
Elderberry	SH	1	3.5ft	Planted	1
Elderberry	SH	1	4ft	Planted	1
Elderberry	SH	1	4.5ft	Planted	1
Amer. Beautyberry	SH	6	<2ft.	Planted	6
Amer. Beautyberry	SH	1	2ft.	Planted	1
Amer. Beautyberry	SH	4	2.5ft	Planted	4
Amer. Beautyberry	SH	1	3ft	Planted	1
Amer. Beautyberry	SH	1	3.5ft	Planted	1
Sweet Bay	SA	1	<2ft	Planted	1
Sweet Bay	SA	1	2ft	Planted	1
American Sycamore	SA	1	4ft	Planted	1
American Sycamore	SA	2	9ft	Planted	2
American Sycamore	SA	1	10ft	Planted	1
Red Cedar	SA	6	2ft	Planted	6
Red Cedar	SA	1	2.5ft	Planted	1
Red Cedar	SA	1	3ft	Planted	1

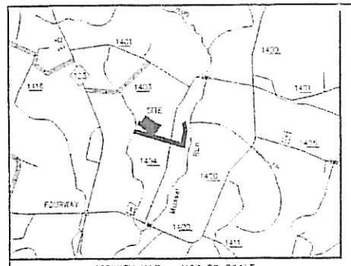
Green Ash	SA	2	<2ft	Planted	2
Green Ash	SA	2	2ft	Planted	2
Red Bay	SA	3	<2ft	Planted	3
Red Bay	SA	1	2ft	Planted	1
Red Bay	SA	1	3ft	Planted	1
Loblolly Pine	SA	2	<2ft	Volunteer	2
Loblolly Pine	SA	3	2ft	Volunteer	3
Loblolly Pine	SA	1	2.5ft	Volunteer	1
Sweet Gum	SA	30	1ft	Volunteer	0
	TOTAL SHRUBS	57		OBSERVED DENSITY (PER PLOT)	86
	TOTAL TREES OF PLANTED SPECIES	23		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	36			
	TOTAL INDIVIDUALS	116			

HOWARD FARM RIPARIAN BUFFER SITE
ANNUAL MONITORING DATA SHEET - VEGETATION PLOTS

PLOT NUMBER 13

SPECIES	STRATUM (T, SA, or SH)	Number of Individuals	HEIGHT	Planted vs. Volunteer Species	Number of Individuals Counted toward Success Criteria
Baccharis	SH	1	6ft	Volunteer	1
Elderberry	SH	1	<2ft	Planted	1
Elderberry	SH	2	3ft	Planted	2
River Birch	SA	10	<2ft	Planted	10
River Birch	SA	3	2ft	Planted	3
River Birch	SA	2	2.5ft	Planted	2
River Birch	SA	10	3ft	Planted	10
River Birch	SA	3	3.5ft	Planted	3
River Birch	SA	7	4ft	Planted	7
River Birch	SA	3	4.5ft	Planted	3
River Birch	SA	1	5ft	Planted	1
River Birch	SA	1	6ft	Planted	1
American Sycamore	SA	1	3ft	Planted	1
American Sycamore	SA	5	4ft	Planted	5
American Sycamore	SA	1	4.5ft	Planted	1
American Sycamore	SA	2	5ft	Planted	2
American Sycamore	SA	1	5.5ft	Planted	1
American Sycamore	SA	5	6ft	Planted	5
American Sycamore	SA	5	7ft	Planted	5
American Sycamore	SA	2	8ft	Planted	2
Blackgum	SA	1	2.5 ft.	Planted	1
Green Ash	SA	1	2.5 ft.	Planted	1
Loblolly Pine	SA	1	2.5 ft.	Volunteer	1
	TOTAL SHRUBS	4		OBSERVED DENSITY (PER PLOT)	69
	TOTAL TREES OF PLANTED SPECIES	64		OBSERVED DENSITY (PER ACRE)	
	TOTAL TREES OF VOLUNTEER SPECIES	1			
	TOTAL INDIVIDUALS	69			

APPENDIX C. CONSERVATION EASEMENT PLAT
(INCLUDING MONITORING PLOTS)



VICINITY MAP – NOT TO SCALE

LEGEND

NIP = NEW IRON PIPE
EPK = EXISTING PK NAIL
EIP = EXISTING IRON PIPE
~ = NOT TO SCALE
℄ = PROPERTY LINE

NOTES:

1) THIS PROPERTY IS LOCATED IN X AND IS NOT IN A SPECIAL FLOOD HAZARD AREA AS TAKEN FROM N.F.I.P. RATE MAPS DATED JANUARY 2, 2004 COMMUNITY PANEL NUMBER 3720462200J.
2) THE SURVEYOR MADE NO ATTEMPT TO DELINEATE OR LOCATE ANY WETLANDS ON THE PROPERTY.
3) THIS MAP DOES NOT REPRESENT A SUBDIVISION OF LAND. IT IS FOR THE PURPOSE OF ESTABLISHING A CONSERVATION EASEMENT ONLY.
4) PROPERTY LINES SHOWN AS DASHED REPRESENT LINES NOT SURVEYED.
5) NO N.C.G.S. HORIZONTAL CONTROL MONUMENTS ARE FOUND WITHIN 2000' OF THE PROPOSED CONSERVATION EASEMENT.

LINE TABLE		
LINE	LENGTH	BEARING
L1	41.81	N16°46'30"E
L2	200.02	S73°14'04"E
L3	29.94	S73°15'43"E
L4	88.16	N16°46'42"E
L5	30.00	N73°12'01"W
L6	191.13	N16°29'12"E
L7	33.10	N91°38'37"E
L8	34.23	N44°34'08"W
L9	111.27	N27°04'26"W
L10	130.91	N62°56'31"E
L11	69.99	N62°56'31"E
L12	154.60	S27°03'29"E
L13	35.40	N76°17'43"W
L14	205.33	N26°40'07"E
L15	201.48	N26°40'07"E
L16	94.46	S66°22'15"E
L17	29.94	S73°27'43"E
L18	179.65	S73°27'43"E
L19	233.24	S73°27'43"E
L20	155.70	S64°51'04"E
L21	207.89	S64°51'04"E
L22	150.67	S15°19'45"W
L23	200.11	N16°19'08"E
L24	200.26	N16°29'08"E

NOTE: L1–16, L13, 117–L22 ARE TIE LINES ONLY

NOW OR FORMERLY RICHARD P. WARREN DB 326 PG 330 MB 3 PG 89

MAURY SANITARY LAND DISTRICT DB 436 PG 334

J.C. HOWARD JR. DB 398 PG 351 DB 592 PG 836 PLAT CAB. 27 PG 184

ROBERT LEE TAYLOR and wife MARY G. TAYLOR DB 518 PG 452 MB 25 PG 76

BRANN HEIRS MB 3 PG 47 DB 581 PG 811 MB 27 PG 178

JUDITH B. WHALEY MORRIS DB 582 PG 848 PLAT CAB. 27 PG 184

NCSR 1404 CHURCHILL FARM ROAD 60' PUBLIC RIGHT-OF-WAY

GREENE COUNTY DB 456 PG 357

NOW OR FORMERLY MAYO PROPERTY

NEW CONSERVATION EASEMENT ACREAGE DATA
13.13 AC. ± (BY COORDINATE METHOD)

NEW CONSERVATION EASEMENT "B" ACREAGE DATA
7.31 AC. ± (BY COORDINATE METHOD)

NEW CONSERVATION EASEMENT "C" ACREAGE DATA
7.80 AC. ± (BY COORDINATE METHOD)

EPK IN THE CENTERLINE OF NCSR 1157 OVER A 48" CULVERT

18' OUTFALL EASEMENT DB 438 PG 334

EN. DITCH

GRAPHIC SCALE: 1" = 200'

STATE OF NORTH CAROLINA PITT COUNTY

I, WILLIAM B. HILLIARD, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK — PAGE —); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK — PAGE —; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:[illegible]; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS [illegible] DAY OF SEPTEMBER, 2005.

SEAL L-4509 NORTH CAROLINA PROFESSIONAL LAND SURVEYOR WILLIAM B. HILLIARD

L-4509 9/29/05

REVIEW OFFICER OF [illegible] COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

REVIEW OFFICER

DATE

I, WILLIAM B. HILLIARD, PROFESSIONAL LAND SURVEYOR NO. L-4509 CERTIFY TO ONE OF MORE OF THE FOLLOWING AS INDICATED THUS [ ] BY [ ]:

[ ] A. THAT THIS PLAT IS OF A SURVEY THAT CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND;

[ ] B. THAT THIS PLAT IS OF A SURVEY THAT IS LOCATED IN SUCH PORTION OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND;

[ ] C. ANY OF THE FOLLOWING:
1. THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET;
2. THAT THIS SURVEY IS OF AN EXISTING BUILDING OR OTHER STRUCTURE, OR NATURAL FEATURE, SUCH AS A WATERCOURSE; OR
3. THAT THIS SURVEY IS A CONTROL SURVEY.

[ ] D. THAT THIS PLAT IS OF A SURVEY OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A BOUNDARY AGREEMENT SURVEY OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION.

[ ] E. THAT THE INFORMATION AVAILABLE TO THIS SURVEYOR IS SUCH THAT I AM UNABLE TO MAKE A DETERMINATION TO THE BEST OF MY PROFESSIONAL ABILITY AS TO PROVISIONS CONTAINED IN (A) THROUGH (D) ABOVE.

SURVEYOR 9/29/05 DATE

CONSERVATION EASEMENT SURVEY
FOR THE STATE OF NORTH CAROLINA
ECOSYSTEM ENHANCEMENT PROGRAM
HOWARD FARM SITE

ORMONDS TOWNSHIP
GREENE COUNTY

SEPTEMBER 29, 2005
NORTH CAROLINA

THE EAST GROUP
324 S. EVANS ST. • P.O.BOX 7365
GREENVILLE, NC 27834
252-756-3746
• Engineering • Architecture • Surveying • Technology

DRAWN BY: WBH	PROJECT NO.: 20050227
SURVEYED BY: GFT/AJH	DATE: 09/29/05
SCALE: 1" = 200'	DRAWING NAME: howard.dwg

⊗ Permanent Monitoring Plot			
Plot #	UTM Coordinates	Plot #	UTM Coordinates
1	740025.940563 189523.165945	7	739480.818314 189764.335203
2	740098.689967 189567.014901	8	739637.279362 189603.887887
3	740086.731161 189628.802066	9	739664.309005597 189677.942642213
4	739538.61921 189587.942812	10	739720.991005 189734.438188
5	739586.454435 189726.46565	11	739681.128318 189564.025199
6	739586.454435 189726.46565	12	739645.251899 189634.781469
		13	739820.647723 189570.004602