LOFLIN DAIRY BUFFER MITIGATION SITE

Randolph County, NC

DENR Contract 003995

NCEEP Project Number 95008

Monitoring Year 1 Annual Report

FINAL

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LOFLIN DAIRY BUFFER MITIGATION SITE
Monitoring Year 1 Annual Report

APPENDICES

1.0 Executive Summary

The Loflin Dairy Buffer Mitigation Site, hereafter referred to as the Site, is located within the Randleman Reservoir watershed (North Carolina Division of Water Quality (NCDWQ) Subbasin 03-06-08) of the Cape Fear River Basin (USGS Hydrologic Unit Code 03030003010060). On-site stream channels are unnamed tributaries to Bob Branch (NCDWQ Index No. 17-9.6-(1)) in the Randleman Regional Reservoir. The Site is located in the Carolina Slate Belt of the Piedmont Physiographic Province (USGS, 1998) approximately six miles southeast of the intersection of Interstate 85 and Highway 311 in Randolph County, NC. The Site has historically been used for agricultural purposes.

The Site is comprised of two areas (Area A and B) on one parcel of land along several unnamed tributaries and ephemeral ditches to Bob Branch. Bob Branch ultimately flows into the Randleman Regional Reservoir. The current property owner has confirmed that Area A has been used as an active dairy farm since 1947 and Area B has been surrounded by agricultural fields since the late 1920s. The Site is surrounded by fields that are alternately used for cattle and crop production. At the downstream limits of the project, Area A has a drainage area of 18 acres and Area B has a drainage area of 59 acres.

The NCDWQ assigns best usage classifications to State Waters that reflect water quality conditions and potential resource usage. Bob Branch is classified as Class WS-IV waters. Class WS-IV waters are used as sources of water supply for drinking or food processing purposes where a more restrictive WS-I, WS-II, or WS-III classification is not feasible. These waters are also protected for Class C uses such as secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture. WS-IV waters are generally in moderately to highly-developed watersheds or Protected Areas.

A conservation easement has been recorded to protect the 9.8 acres of riparian corridor resources in perpetuity. Directions and a map of the Site are provided in Figure 1.

1.1 Project Goals and Objectives

Prior to construction activities, the primary watershed stressor was the lack of a vegetated buffer and nutrient runoff from adjacent agricultural maintenance activities. The riparian zones within these areas were maintained in the past and mowed on an annual basis resulting in varying buffer widths and densities. The riparian zones were also actively sprayed due to their locations in an active row crop field and cattle pasture. A concentrated flow of cattle waste drained directly to several of the tributaries located adjacent to the dairy farm. Although there is no immediate evidence of increased development within the project site's watersheds; the new NC Highway 311 corridor is being constructed immediately downstream of the project area. This new highway corridor may increase development pressure on the project's watersheds and this area of Randolph County in the future. The restored riparian buffer areas within the Site will aid in protecting water quality and endangered species habitat within the Deep River watershed by filtering runoff from adjacent agricultural practices and restoring terrestrial habitat. The Deep River watershed is an important component of the Randleman Regional Reservoir in this part of the state.

Tables 1-4 in Appendix 1 presents the pre-restoration conditions in detail for the Site.

The project was completed to provide buffer mitigation units (BMUs) in the Cape Fear River Basin. The project design caused no adverse impacts to streams or wetlands. The goals of the Loflin Dairy Buffer Mitigation Project address water quality improvements identified in the Cape Fear River Basin Restoration Priorities Report and include the following:

- Remove harmful nutrients from creek flow;
- Reduce pollution of creek by excess sediment;
- Restore terrestrial habitat; and
- Improve aesthetics.

The following project objectives were established to meet these goals:

- 9.1 acres of riparian area will be fenced off from adjacent agricultural activities and runoff will be filtered through buffer zones. Flood flows will be filtered through restored riparian areas, where flood flow will spread through native vegetation. Vegetation will be planted to uptake excess nutrients.
- Stream bank erosion which contributes sediment load to the creek will be greatly reduced, if not eliminated, in the project area. Eroding streambanks will be stabilized by increased woody root mass in banks and reducing channel incision. Storm flow containing grit and fine sediment will be filtered through restored riparian buffer areas, where flow will spread through native vegetation.
- The establishment and maintenance of riparian buffers will create long-term shading of the channel bed, reducing thermal heating and improving aquatic habitat.
- Adjacent buffer and riparian habitats will be restored with native vegetation and invasive species will be treated as part of the project. Native vegetation will provide cover and food for terrestrial creatures.

1.2 Monitoring Year 1 Data Assessment

The final mitigation plan was submitted and accepted by the North Carolina Ecosystem Enhancement Program (NCEEP) in February 2012. Grading activities were completed by the landowner in March 2012. Planting activities were completed by Bruton Natural Systems, Inc. in March 2012. The baseline monitoring and as-built survey were completed in April 2012. There were no significant deviations reported in the project elements in comparison to the design plans. Appendix 1 provides more detailed project activity, history, contact information, and watershed/site background information for this project.

The buffer restoration success criteria for the Site follows the approved success criteria presented in the NCEEP Mitigation Plan Guidance (Version 2.0, 10/01/2010). Annual monitoring and monthly site visits were conducted to assess the condition of the finished project between July and November 2012.

1.2.1 Vegetative Assessment

A total of 16 vegetation plots were established within the project easement area using standard 10 meter by 10 meter vegetation monitoring plots. Plots were randomly established within planted portions of the stream buffer areas to capture the heterogeneity of the designed vegetative communities. The plot corners have been marked and are recoverable either through field identification or with the use of a GPS unit. Reference photographs at the origin looking diagonally across the plot to the opposite corner were taken with the as-built. Subsequent assessments following baseline survey will capture the same reference photograph locations. The final vegetative success criteria will be the survival of 320 planted stems per acre in the buffer corridor at the end of year five (5) of the monitoring period. The extent of invasive species coverage will also be monitored and controlled as necessary.

The monitoring year 1 (MY-1 of 5) vegetative survey was completed in September 2012. The 2012 annual vegetation monitoring resulted in an average survivability of 549 stems per acre, which is greater than the interim requirement of 320 stems/acre, but approximately 27% less than the baseline density recorded (753 stems/acre) in April 2012. There was an average of 14 stems per plot compared to 19 stems per plot in MY-0. All 16 plots met the success criteria required for MY-1. Please refer to Appendix 3 for vegetation summary tables and raw data tables and Appendix 2 for vegetation plot photographs and the vegetation condition assessment table.

Based on monthly site visits, areas of extensive Johnson grass (*Sorghum halepense)* were identified along all project reaches. These areas will be monitored and treated next year as needed.

1.3 Monitoring Year 1 Summary

Overall, the Site has met the required mitigation success criteria for MY-1. All the vegetation plots met the MY-1 success criteria as seen in the CCPV. Areas of extensive Johnson grass have been observed on all reaches. These areas will be monitored and treated next year as needed. At this time no maintenance beyond mowing is proposed.

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 documents available on NCEEP's website. All raw data supporting the tables and figures in the appendices is available from NCEEP upon request.

2.0 Methodology

Vegetation monitoring protocols followed the Carolina Vegetation Survey-NCEEP Level 2 Protocol (Lee et al., 2006).

3.0 References

Lee, Michael T., Peet, Robert K., Steven D., Wentworth, Thomas R. 2006. CVS-EEP Protocol for Recording Vegetation Version 4.0. Retrieved from http://www.nceep.net/business/

North Carolina Ecosystem Enhancement Program. 2009. Cape Fear River Basin Restoraion Priorities 2009. http://www.nceep.net/services/lwps/cape_fear/RBRP%20Cape%20Fear%202008.pdf

Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina, 3rd approx. North Carolina Natural Heritage Program, Raleigh, North Carolina.

United States Department of Agriculture (USDA), 2009. Natural Resources Conservation Service, Soil Survey Geographic (SSURGO) database for Randolph County, North Carolina. http://SoilDataMart.nrcs.usda.gov

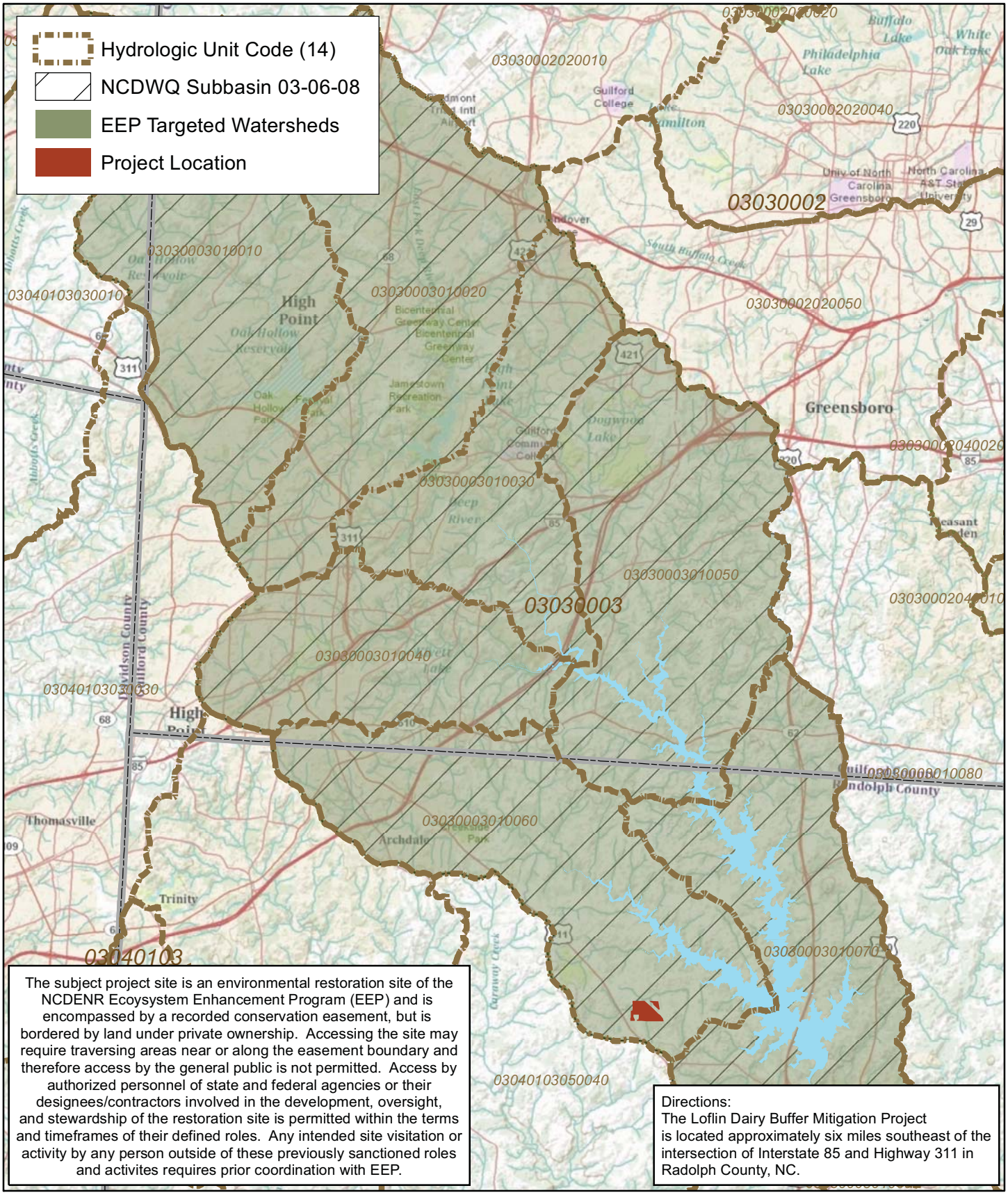
United States Geological Survey (USGS), 1998. North Carolina Geology. http:// http://www.geology.enr.state.nc.us/usgs/carolina.htm

Weakley, A.S. 2008. *Flora of the Carolinas, Virginia, Georgia, Northern Florida, and Surrounding Areas* (Draft April 2008). University of North Carolina at Chapel Hill: Chapel Hill, NC.

Wildlands Engineering, Inc. 2012. Loflin Dairy Buffer Mitigation Site Mitigation Plan. NCEEP, Raleigh, NC.

Wildlands Engineering, Inc. 2012. Loflin Dairy Buffer Mitigation Site Baseline Monitoring Document and As-Built Baseline Report. NCEEP, Raleigh, NC.

APPENDIX 1



Ecosystem Enhancement Program

WILDLANDS ENGINEERING

Figure 1 Project Vicinity Map
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 1 of 5

Randolph County, NC

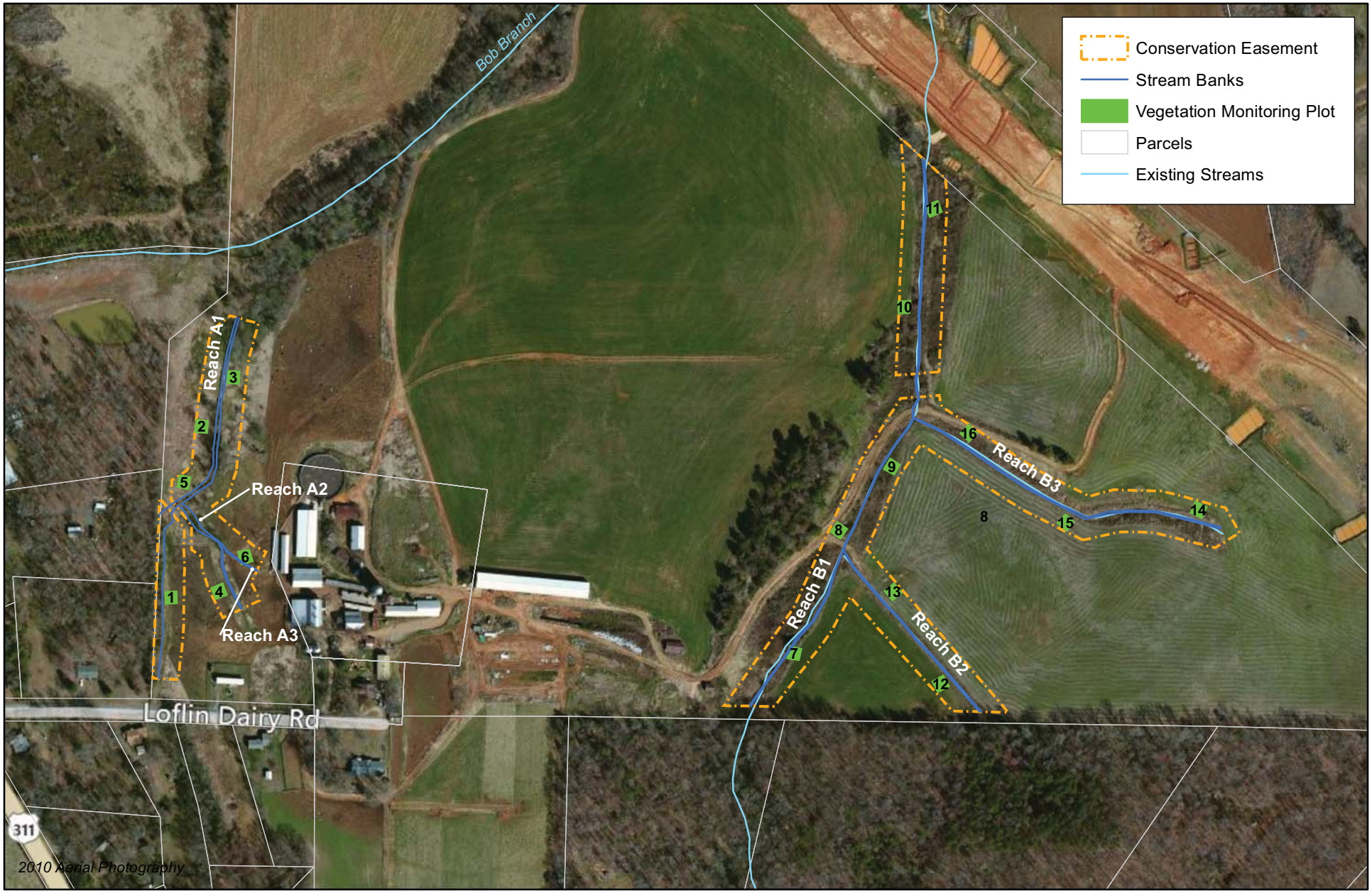


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Figure 2. Project Component/Asset Map
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 0 of 5

Randolph County, NC

Appendix 1. General Tables and Figures
Table 1. Project Components and Mitigation Credits
Loflin Dairy Buffer Mitigation Site (NCEEP Project No.95008)
Monitoring Year 1

Mitigation Credits									
	Stream		Riparian Wetland		Non-Riparian Wetland		Buffer	Nitrogen Nutrient Offet	Phosphorous Nutrient Offset
Type	R	RE	R	RE	R	RE			
Totals	N/A	N/A	N/A	N/A	N/A	N/A	9.1	N/A	N/A

Project Components						
Reach ID	Stationing/ Location	Exisitng Footage (LF)	Approach	Restoration or Restoration Equivalent	Area (acres)	Mitigation Ratio
Reach A1	Area A		N/A	Restoration	1.7	1:1
Reach A2	Area A		N/A	Restoration	0.7	1:1
Reach B1	Area B		N/A	Restoration	3.6	1:1
Reach B2	Area B		N/A	Restoration	1.1	1:1
Reach B3	Area B		N/A	Restoration	2.0	1:1

Component Summation						
Restoration Level	Stream (linear feet)	Riparian Wetland (acres)		Non-Riparian Wetland (acres)	Buffer (square feet)	Upland (acres)
		Riverine	Non-Riverine			
Restoration					396,396	
Enhancement						
Enhancement I						
Enhancement II						
Creation						
Preservation						
High Quality Preservation						

BMP Elements			
Elements	Location	Purpose/Function	Notes

BR = Bioretention Cell; S F= Sand Filter; SW = Stormwater Wetland; WDP = Wet Detention Pond; DDP = Dry Detention Pond; FS = Filter Strip; S = Grassed Swale; LS = Level Spreader; NI = Natural Infiltration Area; FB = Forested Buffer

Appendix 1. General Tables and Figures
Table 2. Project Activity and Reporting History
Loflin Dairy Buffer Mitigation Site (NCEEP Project No.95008)
Monitoring Year 1

Activity or Report	Date Collection Complete	Completion or Delivery
Mitigation Plan	December 2011	February 2012
Final Design - Construction Plans	December 2011	February 2012
Construction	January 2012	January 2012
Temporary S&E mix applied to entire project area*	January 2012	January 2012
Permanent seed mix applied to reach/segments	January 2012	January 2012
Containerized and B&B plantings for reach/segments	March 2012	March 2012
Baseline Monitoring Document (Year 0 Monitoring - baseline)	April 2012	June 2012
Year 1 Monitoring	Sept 2012	December 2012
Year 2 Monitoring	2013	December 2013
Year 3 Monitoring	2014	December 2014
Year 4 Monitoring	2015	December 2015
Year 5 Monitoring	2016	December 2016

*Seed and mulch is added as each section of construction is completed.

Appendix 1. General Tables and Figures
Table 3. Project Contacts Table
Loflin Dairy Buffer Mitigation Site (NCEEP Project No.95008)
Monitoring Year 1

Designer	**Wildlands Engineering, Inc.**
Daniel Taylor	5605 Chapel Hill Road, Suite 122 Raleigh, NC 27604 919.851.9986
Construction Contractor	**Landowner**
Clifford W. Loflin	2409 Loflin Dairy Road Sophia, NC 27350
Planting Contractor	**Bruton Natural Systems, Inc.**
Charlie Bruton	PO Box 1197 Freemont, NC 27830 919.242.6555
Seeding Contractor	**Bruton Natural Systems, Inc.**
Charlie Bruton	PO Box 1197 Freemont, NC 27830 919.242.6555
Seed Mix Sources	**Mellow Marsh Farm**
Nursery Stock Suppliers	**Arborgen** **Dykes and Son Nursery** **NCForestry Service, Claridge Nursery**
Monitoring Performers	**Wildlands Engineering, Inc.**
Vegetation Monitoring, POC	Kirsten Y. Gimbert 704.332.7754, ext. 110

Appendix 1. General Tables and Figures
Table 4. Project Baseline Information and Attributes
Loflin Dairy Buffer Mitigation Site (NCEEP Project No.95008)
Monitoring Year 1

Project Information		
Project Name	Loflin Dairy Buffer Mitigation Site	
County	Randolph	
Project Area (acres)	9.8	
Project Coordinates (latitude and longitude)	35° 50' 44.082"N, 79° 52' 22.487"W	
Project Watershed Summary Information		
Physiographic Province	Carolina Slate Belt of the Piedmont	
River Basin	Cape Fear	
USGS Hydrologic Unit 8-digit	03030003	
USGS Hydrologic Unit 14-digit	03030003010060	
DWQ Sub-basin	03-06-08	
	Area A	**Area B**
Project Drainiage Area (acres)	18	59
Project Drainage Area Percentage of Impervious Area	<1%	
CGIA Land Use Classification	82% Cultivated Land and 18% Forested Land	45% Cultivated Land, 40% Forested Land, 10% Residential, and 5 % Commercial
Reach Summary Information		
Parameters	**Area A**	**Area B**
Length of reach (linear feet) - Post-Restoration	Reach A1 : 917 Reach A2 : 155 Reach A2(ephem):180 Reach A3 : 120	Reach B1 : 1489 Reach B2 : 866 Reach B3 : 486
Valley classification	N/A	N/A
Drainage area (acres)	Reach A1 : 61 Reach A2 : 6.5 Reach A3 : 1.0	Reach B1 : 230 Reach B2 : 26 Reach B3 : 22
NCDWQ stream identification score	Reach A1 : 24/ 34.5 Reach A2 : 23.25 Reach A3 : N/A	Reach B1 : 27.25/ 35.5 Reach B2 : 20.75 Reach B3 : 22.75
NCDWQ Water Quality Classification	WS-IV, C	
Morphological Desription (stream type)	Reach A1 – Per. / Int. Reach A2 – Int. / Ephemeral Ditch Reach A3- Ephemeral Ditch	Reach B1 – Per. / Int. Reach B2 – Int. Reach B3 – Int.
Evolutionary trend (Simon's Model) - Pre- Restoration	N/A	N/A
Underlying mapped soils	Wynott-Enon complex	Mecklenburg loam, 8-15% slopes; Mecklenburg clay loam, 2-8% slopes
Drainage class	well drained	well drained
Soil Hydric status	No	No
Slope	8-15%	2-8%
FEMA classification	no regulated floodplain	
Native vegetation community	Bottom-land Forest	
Percent composition of exotic invasive vegetation - Post-Restoration	0%	

Regulatory Considerations			
Regulation	**Applicable?**	**Resolved?**	**Supporting Documentation**
Waters of the United States - Section 404	N/A	N/A	N/A
Waters of the United States - Section 401	N/A	N/A	N/A
Endangered Species Act	X	X	Loflin Dairy Buffer Mitigation Plan; studies found "no effect" (letter from USFWS)
Historic Preservation Act	X	X	Loflin Diary Buffer Mitigation Plan; No historic resources were found to be impacted (letter from SHPO)
Coastal Zone Management Act (CZMA)/Coastal Area Management Act (CAMA)	N/A	N/A	N/A
FEMA Floodplain Compliance	N/A	N/A	N/A
Essential Fisheries Habitat	N/A	N/A	N/A

U= Unknown

APPENDIX 2

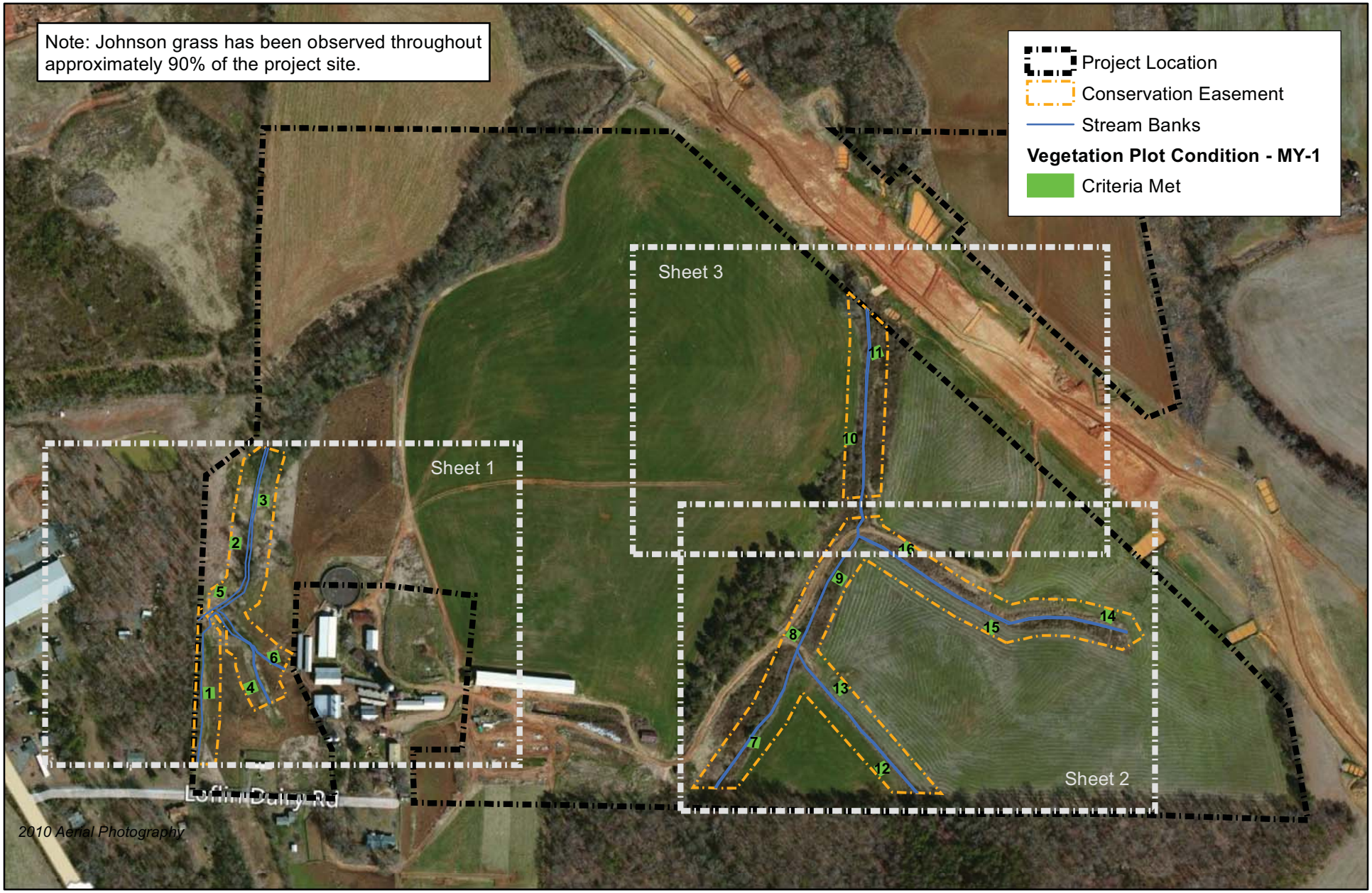

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Figure 3.0 Integrated Current Condition Plan View
(Key)
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 1 of 5

Randolph County, NC

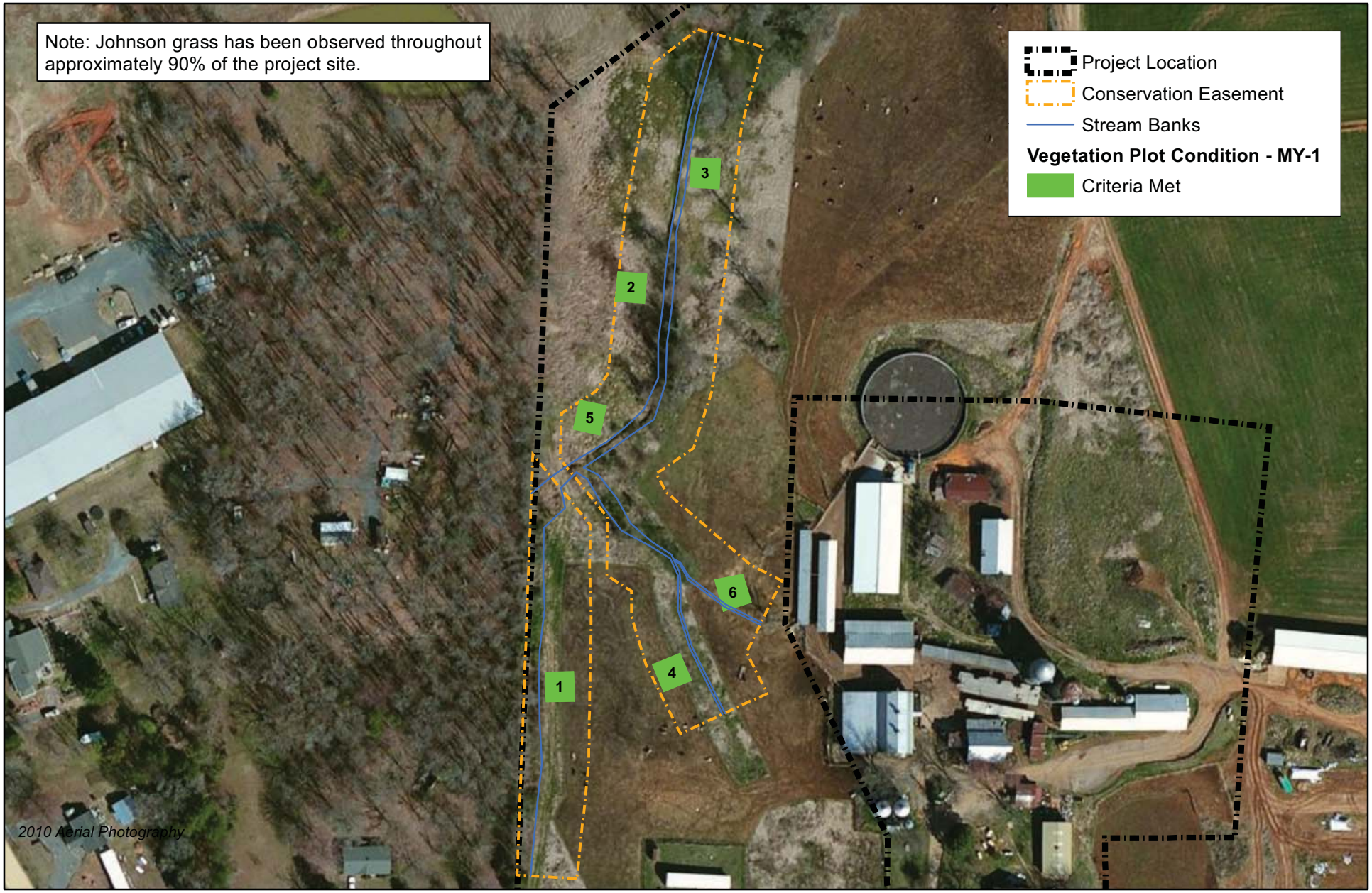

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Figure 3.1 Integrated Current Condition Plan View
(Sheet 1 of 3)
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 1 of 5

Randolph County, NC

Figure 3.2 Integrated Current Condition Plan View
(Sheet 2 of 3)
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 1 of 5

Randolph County, NC

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Figure 3.3 Integrated Current Condition Plan View
(Sheet 3 of 3)
Loflin Dairy Buffer Mitigation Site
NCEEP Project Number 95008
Monitoring Year 1 of 5

Randolph County, NC

Appendix 2. Visual Assessment Data
Table 5. Vegetation Condition Assessment Table
Loflin Dairy Buffer Mitigation Site (NCEEP Project No. 95008)
Monitoring Year 1

Planted Acreage **9.1**

Vegetation Category	Definitions	Mapping Threshold (acres)	Number of Polygons	Combined Acreage	% of Planted Acreage*
Bare Areas	Very limited cover of both woody and herbaceous material	0.1	0	0	0.00%
Low Stem Density Areas^	Woody stem densities clearly below target levels based on MY3, 4, or 5 stem count criteria.	0.1	0	0.0	0%
		Total	**0**	**0.0**	**0%**
Areas of Poor Growth Rates or Vigor	Areas with woody stems of a size class that are obviously small given the monitoring year.	0.25 acres	0	0	0%
		Cumulative Total	**0**	**0.0**	**0%**

Easement Acreage **9.75**

Vegetation Category	Definitions	Mapping Threshold (SF)	Number of Polygons	Combined Acreage	% of Planted Acreage
Invasive Areas of Concern	Areas of points (if too small to render as polygons at map scale).	1000	0	0	90%
Easement Encroachment Areas	Areas of points (if too small to render as polygons at map scale).	none	0	0	0%

Vegetation Photographs

Vegetation Plot 1 (09/09/2012)

Vegetation Plot 2 (09/09/2012)

Vegetation Plot 3 (09/09/2012)

Vegetation Plot 4 (09/09/2012)

Vegetation Plot 5 (09/09/2012)

Vegetation Plot 6 (09/09/2012)

Vegetation Plot 7 (09/09/2012)

Vegetation Plot 8 (09/09/2012)

Vegetation Plot 9 (09/09/2012)

Vegetation Plot 10 (09/09/2012)

Vegetation Plot 11 (09/09/2012)

Vegetation Plot 12 (09/09/2012)

	
Vegetation Plot 13 (09/09/2012)	Vegetation Plot 14 (09/09/2012)
	
Vegetation Plot 15 (09/09/2012)	Vegetation Plot 16 (09/09/2012)

APPENDIX 3

Appendix 3. Vegetation Plot Data

Table 6. Vegetation Plot Criteria Attainment

Loflin Dairy Buffer Mitigation Site (NCEEP Project No. 95008)

Monitoring Year 1

Plot	MY1 Success Criteria Met (Y/N)	Tract Mean
1	Y	100%
2	Y	
3	Y	
4	Y	
5	Y	
6	Y	
7	Y	
8	Y	
9	Y	
10	Y	
11	Y	
12	Y	
13	Y	
14	Y	
15	Y	
16	Y	

Appendix 3. Vegetation Plot Data
Table 7. CVS Vegetation Plot Metadata
Loflin Dairy Buffer Mitigation Site (NCEEP Project No. 95008)
Monitoring Year 1

Report Prepared By	Ian Eckardt
Date Prepared	10/1/2012 16:48
database name	*Loflin Dairy Buffer-MY1.mdb*
database location	*Q:\ActiveProjects\005-02131 Loflin Dairy Buffer Mitigation Site\Monitoring\Monitoring Year 1\Vegetation Assessment*
DESCRIPTION OF WORKSHEETS IN THIS DOCUMENT----------	
Metadata	*Description of database file, the report worksheets, and a summary of project(s) and project data.*
Plots	*Each project is listed with its PLANTED stems per acre, for each year. This excludes live stakes.*
Stem Count by Plot and Spp	*A matrix of the count of total living stems of each species (planted and natural volunteers combined) for each plot; dead and missing stems are excluded.*
PROJECT SUMMARY----------	
Project Code	95008
project Name	Loflin Dairy Mitigation Site
Description	Buffer Mitigation
length (ft)	
stream-to-edge width (ft)	
area (sq m)	
Required Plots (calculated)	16
Sampled Plots	16

Appendix 2. Vegetation Assessment
Table 8a. Planted and Total Stem Counts (Species by Plot with Annual Means)
Loflin Dairy Buffer Mitigation Site (NCEEP Project No. 95008)
Reach A1, A2 and A3
Monitoring Year 1

			Current Data (MY0-4/2012)												Annual Means	
			Plot 1		Plot 2		Plot 3		Plot 4		Plot 5		Plot 6		Current Mean	
Species	Common Name	Type	P	T	P	T	P	T	P	T	P	T	P	T	P	T
Betula nigra	River Birch	Tree		0	5	5		0		0	3	3		0	**3**	**2**
Carpinus caroliniana	Ironwood	Tree		0		0	1	1		0	3	3	1	1	**2**	**1**
Fraxinus pennsylvanica	Green Ash	Tree	11	11	5	5	5	5		0	2	2	1	1	**5**	**4**
Liriodendron tulipifera	Tulip Poplar	Tree	3	3		0	1	1	1	1		0	8	8	**2**	**1**
Platanus occidentalis	Sycamore	Tree		0	2	2	2	2	6	6	3	3	1	1	**4**	**3**
Quercus michauxii	Swamp Chestnut Oak	Tree		0		0		0	2	2		0		0	**2**	**1**
Quercus phellos	Willow Oak	Tree		0	4	4	3	3	1	1		0	1	1	**2**	**2**
Quercus rubra	Northern Red Oak	Tree		0		0		0	1	1	1	1	1	1	**2**	**1**
	Plot Area (acres)		**0.0247**													
	Species Count		**2**	**2**	**4**	**4**	**5**	**5**	**5**	**5**	**5**	**5**	**6**	**6**	**5**	**5**
	Stem Count		**14**	**14**	**16**	**16**	**12**	**12**	**11**	**11**	**12**	**12**	**13**	**13**	**14**	**14**
	Stems per Acre		**567**	**567**	**648**	**648**	**486**	**486**	**445**	**445**	**486**	**486**	**526**	**526**	**549**	**549**

Type=Shrub or Tree
P = Planted
T = Total

Appendix 2. Vegetation Assessment
Table 8b. Planted and Total Stem Counts (Species by Plot with Annual Means)
Loflin Dairy Buffer Mitigation Site (NCEEP Project No. 95008)
Reach B1, B2 and B3
Monitoring Year 1

			Current Data (MY0-4/2012)																				Annual Means	
			Plot 7		Plot 8		Plot 9		Plot 10		Plot 11		Plot 12		Plot 13		Plot 14		Plot 15		Plot 16		Current Mean	
Species	**Common Name**	**Type**	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T
Betula nigra	River Birch	Tree	1	1		0	1	1	1	1	1	1	3	3	3	3	1	1	8	8		0	**3**	**2**
Carpinus caroliniana	Ironwood	Tree	1	1		0	1	1	5	5		0	1	1	2	2	6	6	2	2		0	**2**	**1**
Fraxinus pennsylvanica	Green Ash	Tree	4	4	8	8	5	5	1	1		0	2	2	6	6	8	8		0	3	3	**5**	**4**
Liriodendron tulipifera	Tulip Poplar	Tree	2	2		0		0	1	1		0		0		0	1	1		0		0	**2**	**1**
Platanus occidentalis	Sycamore	Tree	6	6	1	1	5	5		0	8	8	2	2		0	1	1		0	5	5	**4**	**3**
Quercus michauxii	Swamp Chestnut Oak	Tree		0	3	3	2	2	1	1	1	1		0	2	2		0		0		0	**2**	**1**
Quercus phellos	Willow Oak	Tree	1	1	2	2	1	1	4	4	5	5	2	2		0		0		0		0	**2**	**2**
Quercus rubra	Northern Red Oak	Tree		0	3	3	2	2		0	2	2		0	1	1	1	1		0		0	**2**	**1**
	Plot Area (acres)		**0.0247**																					
	Species Count		**6**	**6**	**5**	**5**	**7**	**7**	**6**	**6**	**5**	**5**	**5**	**5**	**5**	**5**	**6**	**6**	**2**	**2**	**2**	**2**	**5**	**5**
	Stem Count		**15**	**15**	**17**	**17**	**17**	**17**	**13**	**13**	**17**	**17**	**10**	**10**	**14**	**14**	**18**	**18**	**10**	**10**	**8**	**8**	**14**	**14**
	Stems per Acre		**607**	**607**	**688**	**688**	**688**	**688**	**526**	**526**	**688**	**688**	**405**	**405**	**567**	**567**	**729**	**729**	**405**	**405**	**324**	**324**	**549**	**549**

Type=Shrub or Tree
P = Planted
T = Total