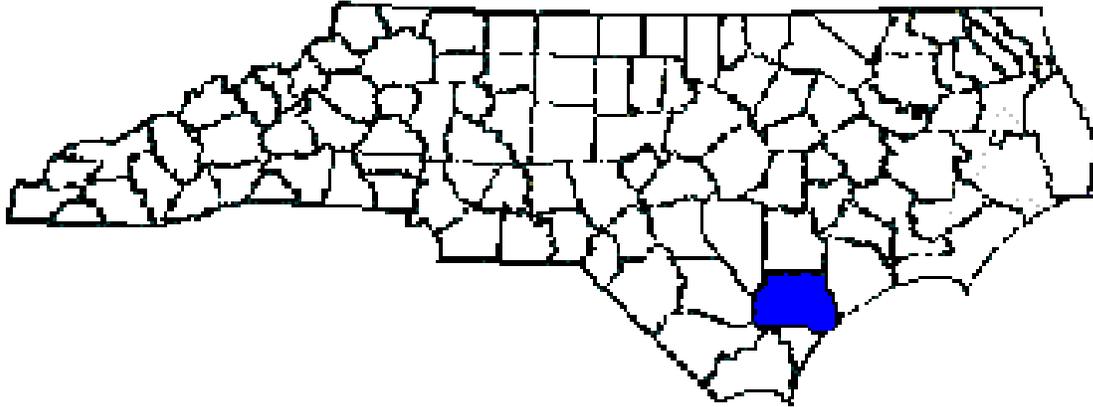


# ANNUAL REPORT FOR 2013



**Northeast Cape Fear River Wetland Mitigation Site**  
**Pender County**  
**TIP No. B- 4223**  
**COE Action ID: 200101172**  
**DWQ Project #: 060364**  
**CAMA Permit #: 123-06**



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July 2013

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## **SUMMARY**

The Northeast Cape Fear River Wetland Mitigation Site is located in Pender County. The site was planted in March 2010 and was designed as wetland mitigation for impacts associated with bridge project B-4223.

The mitigation encompasses approximately 0.95 acre total of riverine swamp wetland by removing an abandoned causeway and connecting the road back to wetland elevations of the existing adjacent wetlands. Proposed impacts due to the replacement of Bridge No. 21 are 0.52 acre. Therefore, the surplus of 0.43 acre of restoration will be available for future projects in the Cape Fear River Basin (HUC 03030007). The restored area will be planted with species commonly found in riverine swamp communities. The restoration effort involved re-vegetating the area that was restored. The area that was restored is being monitored by visual observation and photo points for survival of planted seedlings. No hydrologic monitoring is required for this project; however, vegetation monitoring is required for five years.

There were two vegetation monitoring plots established throughout the 0.95 acre site. The mowed area noted during the 2010 evaluation was replanted in January 2011. After the fourth year of monitoring, the 2013 vegetation monitoring of the site revealed an average tree density of 515 trees per acre.

NCDOT proposes to continue vegetation monitoring at the Northeast Cape Fear River Wetland Mitigation Site.

## 1.0 INTRODUCTION

### 1.1 Project Description

The Northeast Cape Fear River Wetland Mitigation Site is located at Bridge No. 21 on NC 210 over the Northeast Cape Fear River (Figure 1). The site consists of approximately 0.95 acres of riverine wetland mitigation for wetland impacts associated with bridge project B-4223.

### 1.2 Purpose

In order for a mitigation site to be considered successful, the site must meet vegetation success criteria. This report details the vegetation monitoring in 2013 at the Northeast Cape Fear River Wetland Mitigation Site. Hydrologic monitoring was not required for the site.

### 1.3 Project History

March 2010	Site planted
June 2010	Vegetation Monitoring (1 year)
September 2010	Installed signs identifying site
January 2011	Replanted mowed area
July 2011	Vegetation Monitoring (2 year)
July 2012	Vegetation Monitoring (3 year)
July 2013	Vegetation Monitoring (4 year)

#### 1.4 Debit Ledger

Site name	Site TIP	HUC	River Basin	Division	County	Mitigation Type	Notes	As Built Quantity	Available	Debit
Bridge 21 on NC 210 over N.E. Cape Fear	B-4223	3030007	Cape Fear	3	Pender					B-4223
						Riverine Wetland Restoration		0.95	0.43	0.52

**Note: Debit ledger information up to date as of September 12, 2013.**

## 2.0 VEGETATION: NORTHEAST CAPE FEAR RIVER WETLAND MITIGATION SITE (YEAR 4 MONITORING)

### 2.1 Success Criteria

NCDOT shall monitor the restoration site by visual observation and photo points for survival of planted seedlings. NCDOT shall monitor the site for a minimum of five years. Monitoring will be initiated upon completion of the site planting.

No specific hydrological monitoring is proposed for this restoration site. The target elevation will be based on the adjacent wetland elevation and verified during construction. Constructing the site at the adjacent wetland elevation will ensure that the hydrology in the restored area is similar to the hydrology in the reference area.

### 2.2 Description of Species

The following tree species were planted in the Wetland Reforestation area:

*Nyssa sylvatica* var. *biflora*, Swamp Blackgum

*Taxodium distichum*, Baldcypress

*Fraxinus pennsylvanica*, Green Ash

### 2.3 Results of Vegetation Monitoring

Plot #	Swamp Blackgum	Baldcypress	Green Ash	Total (4 year)	Total (at planting)	Density (Trees/Acre)
1	4	28	3	35	54	441
2	6	29	10	45	52	588
Average Density (Trees/Acre)						515

**Site Notes:** The restoration area is re-attaining wetland jurisdictional status and the planted species are surviving but the planted vegetation is small for the fourth year of monitoring. There was approximately 4 to 6 inches of standing water across the entire site at the time of monitoring. Other species noted onsite included *Juncus* sp., black willow, woolgrass, cattail, vines, *Scirpus* sp., stinkweed, phragmites, alder, wax myrtle, and various grasses. There was no current ATV activity noted during the monitoring evaluation.

## **2.4 Conclusions**

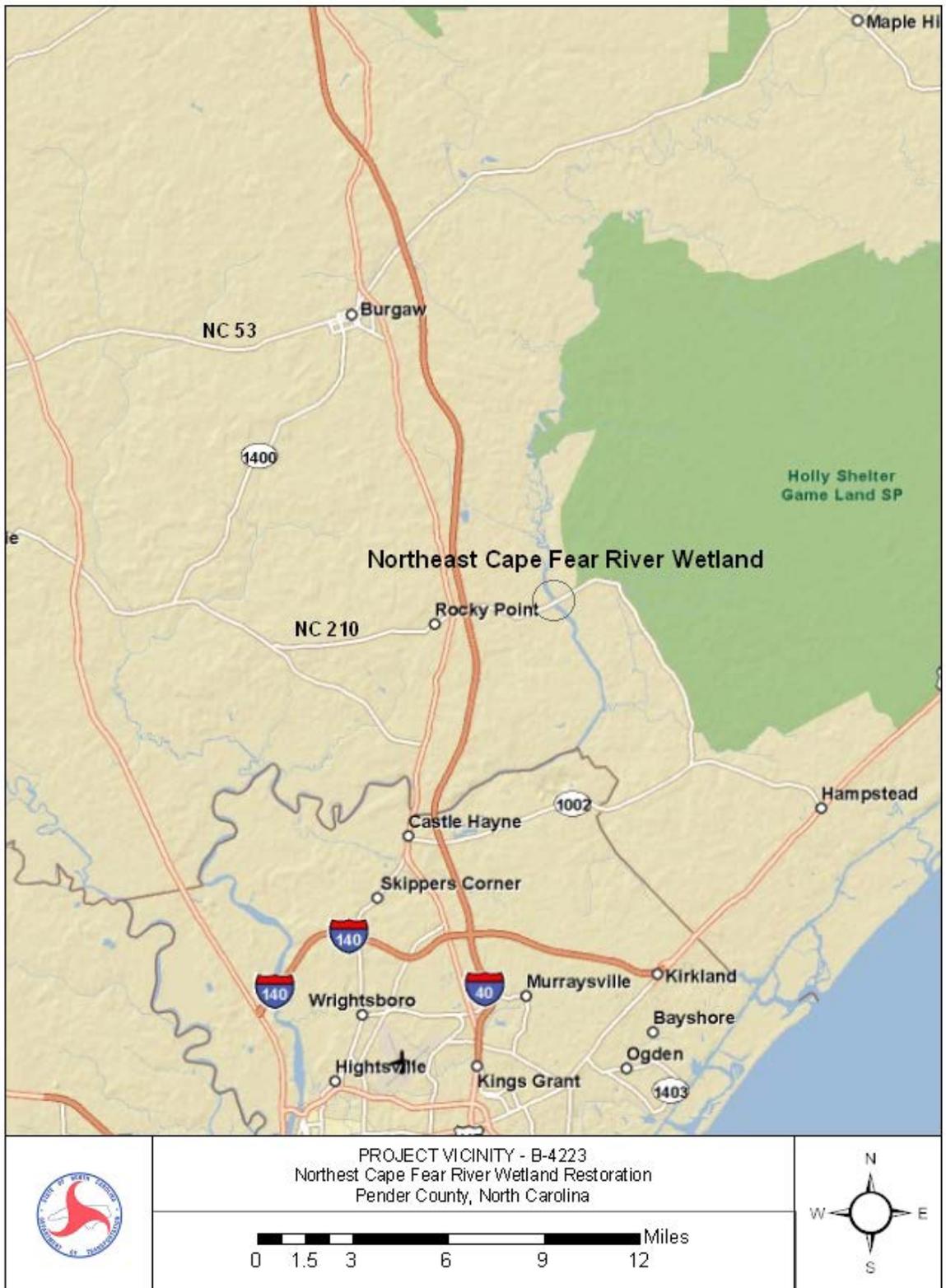
There were 2 vegetation monitoring plots established throughout the 0.95 acre site. The 2013 vegetation monitoring of the site revealed an average density of 515 trees per acre for the fourth year of monitoring.

## **3.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

The 2013 year represents the fourth year of monitoring activities that have occurred at the Northeast Cape Fear River Wetland Mitigation Site. The site must demonstrate vegetation success for a minimum of five years or until the site is deemed successful.

There were two vegetation monitoring plots established throughout the 0.95 acre site. The 2013 vegetation monitoring of the site revealed an average density of 515 trees per acre.

NCDOT will continue vegetation monitoring at the Northeast Cape Fear River Wetland Mitigation Site in 2014.



**Figure 1. Site Location Map**

**APPENDIX A**

**SITE PHOTOS**

# Northeast Cape Fear River Wetland Site



Photo 1



Photo 2



Photo 3

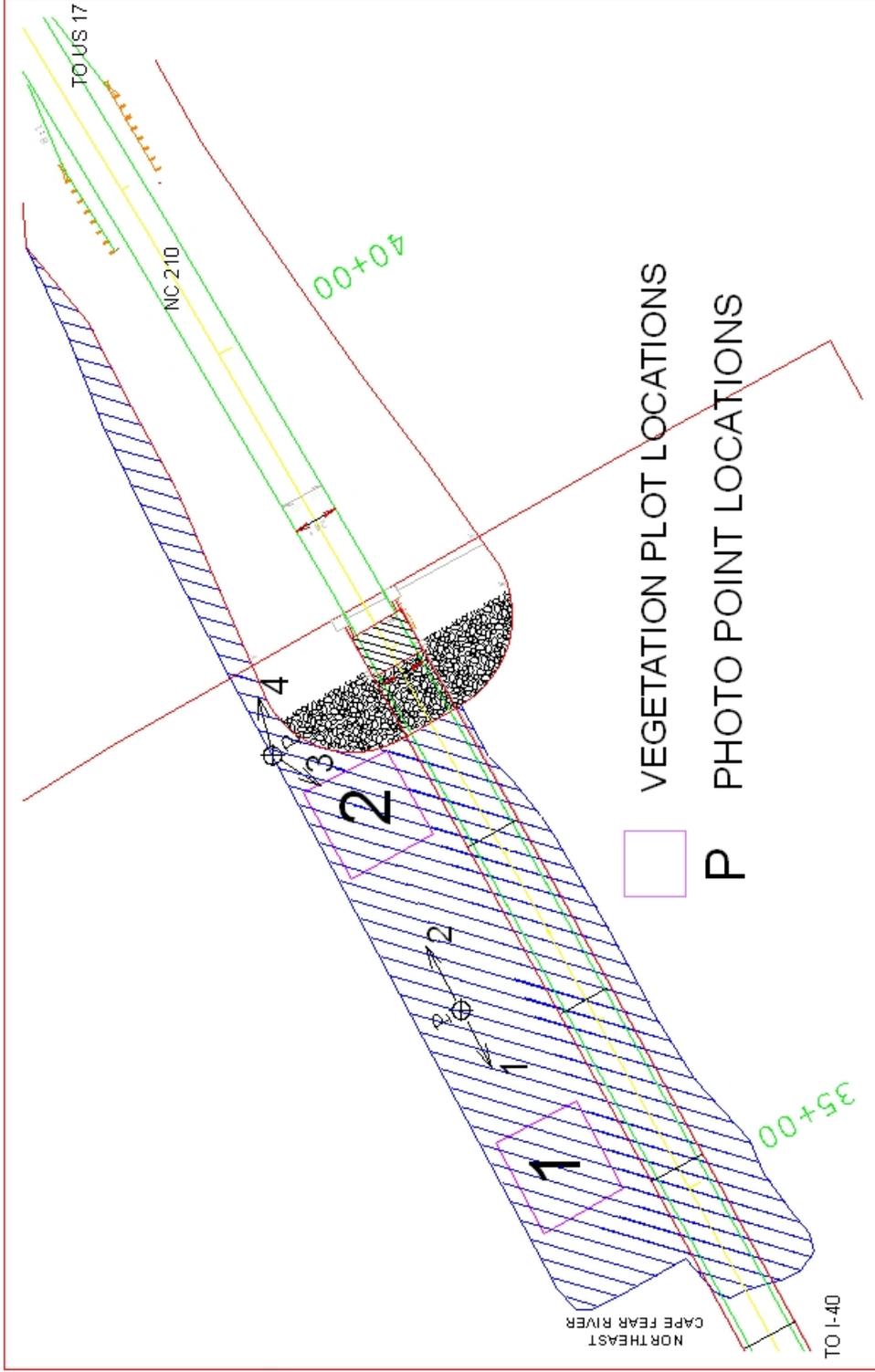


Photo 4



Overview photo of the site

July 2013



VEGETATION PLOT AND PHOTO POINT LOCATIONS  
 B-4223 Northeast Cape Fear River Wetland Restoration  
 Pender County, North Carolina

