

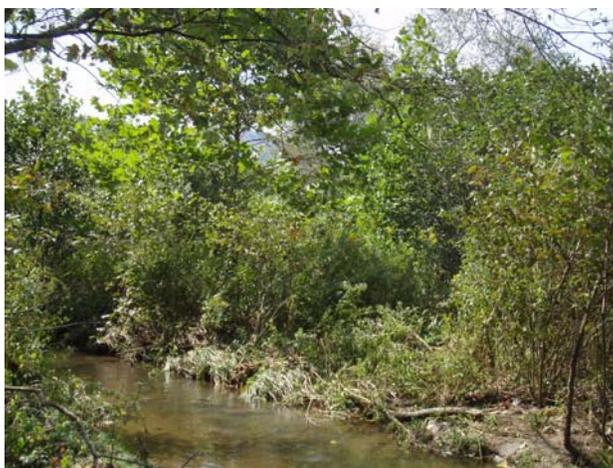
**MAINTENANCE MONITORING REPORT**  
**for the**  
**BARE MITIGATION SITE ON AN UNNAMED TRIBUTARY TO**  
**PEAK CREEK**

Ashe County, North Carolina

EEP Project Number: 92704  
Contract Number: D06082; Task Order: 07M0N01-03

Period Covered: April 2008 – September 2009

Submitted: 8 December 2009



Prepared by the North Carolina Wildlife Resources Commission  
in Partnership with the  
North Carolina Ecosystem Enhancement Program  
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This report summarizes the 2008 maintenance work subsequent vegetation monitoring completed at the Bare stream mitigation site located on an unnamed tributary (UT) to Peak Creek in Ashe County. The Ecosystem Enhancement Program (EEP) requested that the North Carolina Wildlife Resources Commission (NCWRC) plant three riparian areas within the easement with native trees and shrubs and spot spray fescue *Festuca spp.* (Figure 1). This work was deemed necessary in order to meet mitigation requirements for the site.

### **Pre-Existing Conditions**

The 2006 vegetation survey revealed a total of 1,126 stems (373 stems per acre) present on the site (NCWRC 2007), which exceeded the 260 stems per acre required for woody species planted at mitigation sites through monitoring year five (USACE 2003). However, three areas within the easement, totaling approximately 0.19 acres, were sparsely vegetated with woody plants. Additionally, one of the areas is under a power-line right-of-way and the woody vegetation is cleared on a regular basis. Fescue is found through out the project site due to the abundant seed source from the adjacent pastures (NCWRC 2007).

### **Site Improvements**

The three areas were planted with a total of 47 shrubs and large bare root trees on 11 Mar 2008 (NCWRC 2008). Tall trees were placed outside of the power-line right-of-way to avoid being cut by the power company. Vegetation was surveyed on 11 Sep 2008 and 28 Sep 2009 to determine planting success. During the 2008 survey, 29 stems of the previously planted material was found and only 24 stems were found during the 2009 survey (Table 1, Figure 2). As of the 2009 survey, there is a 48% reduction in the number of woody stems planted in 2008. The low survivorship could be a result of the drought in the summer of 2008. Tag alder from the edge of the stream reseeded into all three areas, making it hard to find some of the planted trees in Area 3. However, the supplemental vegetation has met the goal of increased plant densities in these once sparsely vegetated areas.

On 8 Apr 2008, 6 Mar 2008, and 4 May 2008 fescue and multiflora rose *Rosa multiflora* was treated with an herbicide foliar application of Glyphosate (1% solution) around the base of the newly planted vegetation and spot treated within the three areas. The herbicide treatment significantly reduced fescue and multiflora rose in these areas. This reduction in competition allowed native woody and herbaceous plants to become established.

### **Acknowledgements**

M. Fowlkes and J. Wasseen of the NCWRC planted the site and treated the invasive species; M. Fowlkes prepared this report. T. Ewing provided comments.

### **References**

NCWRC (North Carolina Wildlife Resources Commission). 2007. Bare mitigation site on an unnamed tributary to Peak Creek, Ashe County, Year 5 monitoring report. Raleigh.

NCWRC (North Carolina Wildlife Resources Commission). 2008. Bare mitigation site on an unnamed tributary to Peak Creek, Ashe County, 2008 maintenance report. Raleigh.

USACE (U.S. Army Corps of Engineers, Wilmington District, U. S. Environmental Protection Agency, North Carolina Wildlife Resources Commission, and the North Carolina Division of Water Quality). 2003. Stream Mitigation guidelines. Wilmington, North Carolina.

Table 1.—Woody vegetation monitoring at the Bare mitigation site.

Scientific Name	Common Name	Number Planted 2008	September 2008 Stem Count	September 2009 Stem Count	Percent change in numbers <sup>a</sup>
<b>Shrubs</b>					
<i>Cornus amomum</i>	Silky dogwood	20	11	10	-50.0%
<b>Large Trees</b>					
<i>Acer rubrum</i>	Red maple	4	4	3	-25.0%
<i>Acer saccharinum</i>	Sugar maple	4	4	3	-25.0%
<i>Betula lenta</i>	Sweet birch	3	1	0	-100.0%
<i>Betula lutea</i>	Yellow birch	3	1	1	-66.7%
<i>Betula nigra</i>	River birch	3	1	1	-66.7%
<i>Fagus grandifolia</i>	American beech	4	3	2	-50.0%
<i>Platanus occidentalis</i>	Sycamore	3	2	2	-33.3%
<i>Fraxinus pennsylvanica</i>	Green ashe	3	2	2	-33.3%
<b>Total</b>		47	29	24	-48.9%

<sup>a</sup>Calculated using 2009 total stem count and number planted

Figure 1.—Location of areas planted with additional woody vegetation at the Bare mitigation site.

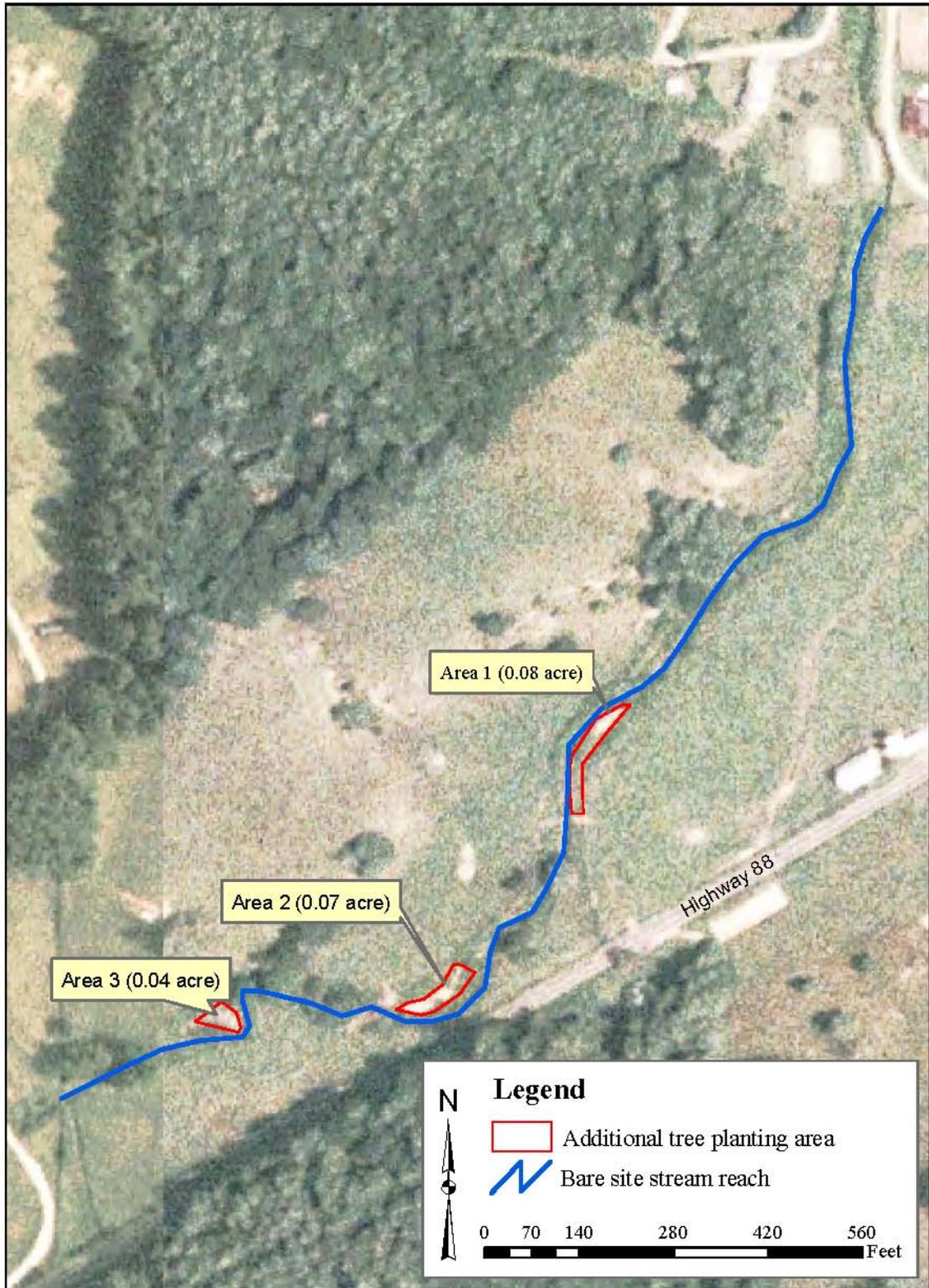


Figure 2. Bare mitigation site monitoring photographs.



Area 1, 11 Sep 2008.



Area 1, 28 Sep 2009.



Area 2, 11 Sep 2008.



Area 2, 28 Sep 2009.



Area 3, 11 Sept 2008.



Area 3, 28 Sept 2009.