

Dula Thoroughfare Stream and Wetland Restoration

EEP Project No. 65
USACE Action ID# 200531348
Closeout Report
Stream & Wetland Project

Construction Completed: February 2007
Submission Date: April 2012



Overall Project Activities and Timeline

Milestone	Month-Year
Restoration Plan	Sept 2004
Final Design	June 2005
Construction & Plantings completed	Feb 2007
As-built survey	May 2007
Monitoring Year-1	Oct 2007
Veg Monitoring Year 2	Sept 2008
Monitoring Year 2	Oct 2008
Veg Monitoring Year 3	July 2009
Monitoring Year 3	Jan 2010
Veg Monitoring Year 4	June 2010
Monitoring Year 4	Feb 2011
Veg Monitoring Year 5	Aug 2011
Monitoring Year 5	April 2012
Closeout Submission	April 2012

Project Setting & Classifications

County	Anson
General Location	Ansonville
Basin:	Yadkin
Physiographic Region:	Piedmont
Ecoregion:	Triassic Basin
USGS Hydro Unit:	03040104
NCDWQ Sub-basin:	03-07-14
Wetland Classification	C
Thermal Regime:	Warm
Trout Water:	No
Project Performers	
Source Agency:	NC DOT
Designer:	EcoScience Corporation
Monitoring Firm	Jordan, Jones, Goulding
Channel Remediation	\NA
Plant remediation	NA
Property Interest Holder	NC DOT & EEP



PROJECT DESCRIPTION

Project Setting and Background Summary

The Dula Thoroughfare Stream and Wetland Restoration Project (Site) is located in Anson County, North Carolina, north of the Town of Wadesboro within the Piedmont eco-region and in the Yadkin River Basin (USGS Subbasin HUC 03040104). The Site includes one of the two Ecosystem Enhancement Program project sites located on the 200-acre Bishop Site: Dula Thoroughfare EEP Project #65 and Camp Branch EEP Project #92350. The Dula Thoroughfare Stream and Wetland Restoration Project includes Dula Thoroughfare and its tributary (DT) and Unnamed Tributary (UT) to Dula Thoroughfare. The Site is contained by NC DOT and EEP conservation easements. The stream preservation/enhancement/restoration plan was designed by EcoScience Corporation and was constructed by Vaughn Construction, Inc. Construction and planting activities were completed in February 2007. As-built surveys for the Site were performed in May 2007. The first annual monitoring activities were conducted in October 2007.

The project channels have exhibited limited bank erosion and no degradation of the profile and have generally maintained the dimension of the cross-section (see cross section data). The site is characterized by small, low energy channels that were subject to intense drought conditions during the first year, which like many other small streams in the piedmont during this time resulted in vegetation growth in the channel in some areas. Beaver colonized Dula Thoroughfare and were removed from Dula Thoroughfare in February 2012. The substrate along this reach was dominated by silt deposition which is likely due to watershed contributions coupled with the beaver dam impoundment. However, this has not resulted in widespread bar formation capable of deflecting flows into neighboring banks. Assuming any potential upstream sediment sources moderate with time, future storm events will likely evacuate this finer. Except for localized low-growth areas which represent less than 5% of the total planted bank length, riparian zones were vegetating as expected and providing adequate soil stabilization and protection. The current project average planted stem density is 592 stems/acre. Three vegetation plots (12, 14, 15) failed to meet success criteria in 2005; plot 12 was likely affected by the beaver impoundment directly downstream and plots 14 and 15 are likely affected by competition with surrounding *Rubus* sp. All groundwater gauges installed met the established 12.5 % success criteria in monitoring years 1, 2, 3, and 5. In year four, gauges two and three met success criteria and gauge one was saturated for 19 days or 8% of the growing season.

Goals and Objectives

Prior to restoration, the Site was predominantly utilized for row cropping and recreational activities, such as hunting and wildlife viewing. Historically, drainage features and wetland areas were dredged, straightened, and filled in to provide land for agricultural purposes. These activities are thought to have inhibited stream channel stability and water quality; therefore, producing an incised, eroded stream.



The primary goal for the Site included:

- Restore functionality to impacted on-site stream reaches and adjacent riverine wetlands

Secondary Site restoration goals included:

- Stream channel and adjacent wetland enhancement and preservation

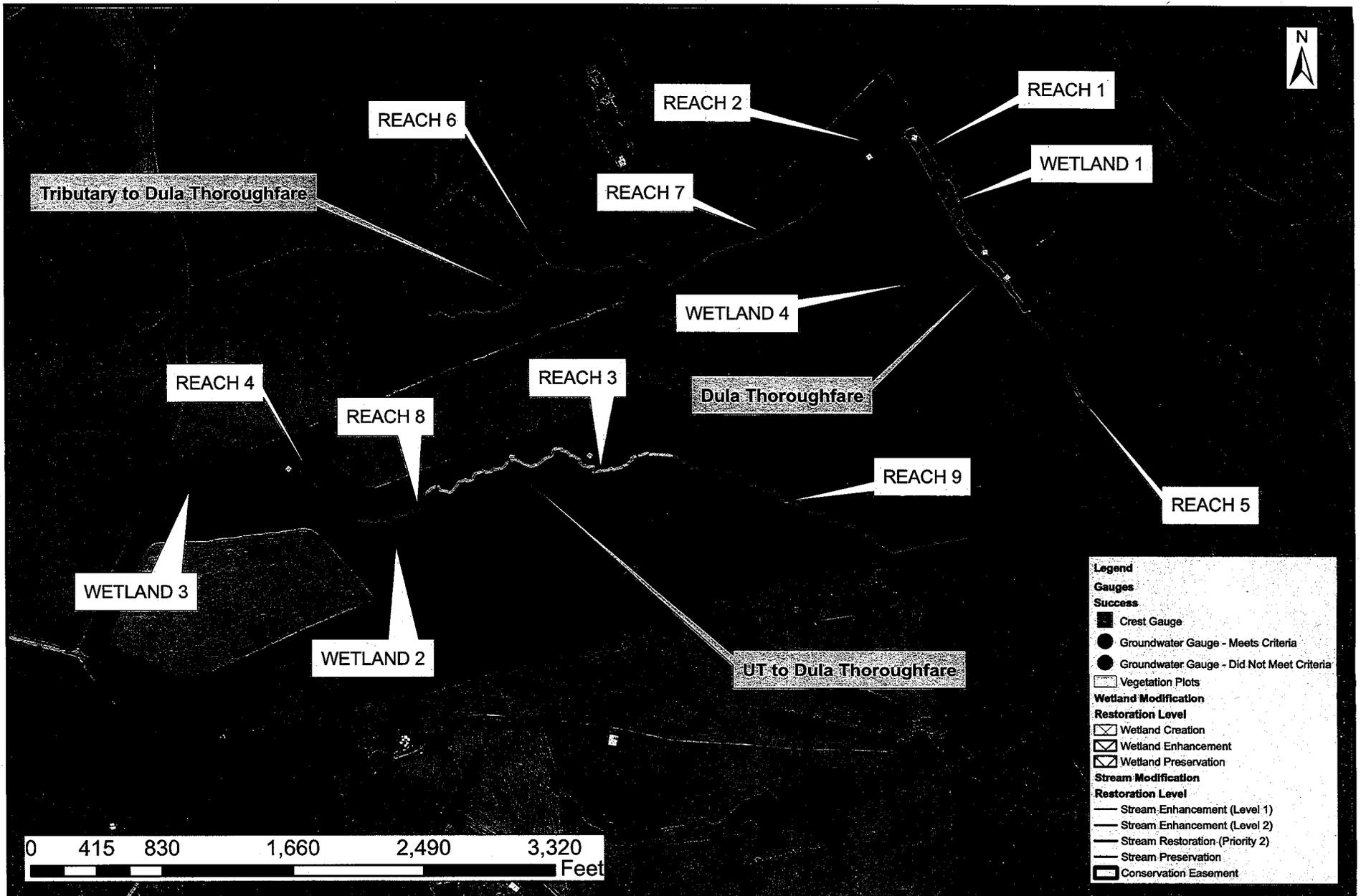
The project goals were achieved by incorporating the following objectives:

- Aquatic habitat creation via excavation of vernal pools within floodplain cut areas at Dula Thoroughfare
- Re-establishment of the characteristic, pre-disturbance Piedmont Bottomland Forest (Schafale and Weakley 1990) community adjacent to restoration reaches using at Dula Thoroughfare
- Re-establishment of the characteristic, pre-disturbance Piedmont Bottomland Forest (Schafale and Weakley 1990) community adjacent to restoration reaches using bare at UT to Dula Thoroughfare
- Priority II stream restoration via excavation of approximately 2,730 linear feet of a designed E-type stream of DT (Reach 1), including an associated tributary (Reach 2), including adjacent floodplain excavation to achieve and entrenchment ratio characteristic of E-type streams
- Creation of approximately 3.1 acres of riverine wetlands (Wetlands 1 and 5) adjacent to DT and UT to DT via floodplain excavation in previously identified hydric soil areas, thereby re-establishing jurisdictional wetland hydrology
- Preservation of 2.3 acres of riverine wetlands adjacent to DT (Wetland 2)
- Level I enhancement of approximately 1,871 linear feet of stream (Reach 4) via backfill of straightened and ditched portions of the existing watercourse, thereby re-establishing characteristic stream dimension and pattern by reintroducing flow into adjacent relic channel areas
- Level II enhancement of approximately 480 linear feet of stream (Reach 3) via riparian plantings adjacent to the UT to DT streambanks
- Re-vegetation of open areas adjacent to the UT to DT via plantings of characteristic, pre-disturbance community types described by Schafale and Weakley (1990) using bare root seedling plantings
- Enhancement of 0.9 acre of riparian wetland adjacent to UT to DT (Wetlands 3 and 4)



Success Criteria

Characteristic	Standard
Dimension	Insignificant change in dimension from as-built measurements or the previous year's monitoring measurements. Minor changes in channel dimension are allowed; however, dimension changes should not represent a trend towards instability (e.g. increased width to depth ratio or decreased width to depth ratio with decreased entrenchment ratio)
Profile	Little change in longitudinal profile
Pattern and Profile	Pool/riffle spacing should remain fairly constant
Substrate	Pools should not be aggrading and riffles should not scour
Substrate	Pebble count should trend toward a desired bed material
Wetland Hydrology	Wetland hydrology success criteria of 12.5% for lower elevation wetland areas and between 5-12% for upper landscape wetlands
Vegetation	Vegetative Plots success criteria of 260 stems/acre



Legend

Gauges

Success

- Crest Gauge
- Groundwater Gauge - Meets Criteria
- Groundwater Gauge - Did Not Meet Criteria
- Vegetation Plots

Wetland Modification

Restoration Level

- ▨ Wetland Creation
- ▨ Wetland Enhancement
- ▨ Wetland Preservation

Stream Modification

Restoration Level

- Stream Enhancement (Level 1)
- Stream Enhancement (Level 2)
- Stream Restoration (Priority 2)
- Stream Preservation
- ▭ Conservation Easement

0 415 830 1,660 2,490 3,320 Feet

Figure 1: Aerial Map
 Dula Thoroughfare Stream & Wetland Restoration
 EEP Project No. 65
 Anson County, NC
 Closeout Report



Aerial Source: National Agricultural Imagery Program, 2010
 Scale 1:10,000

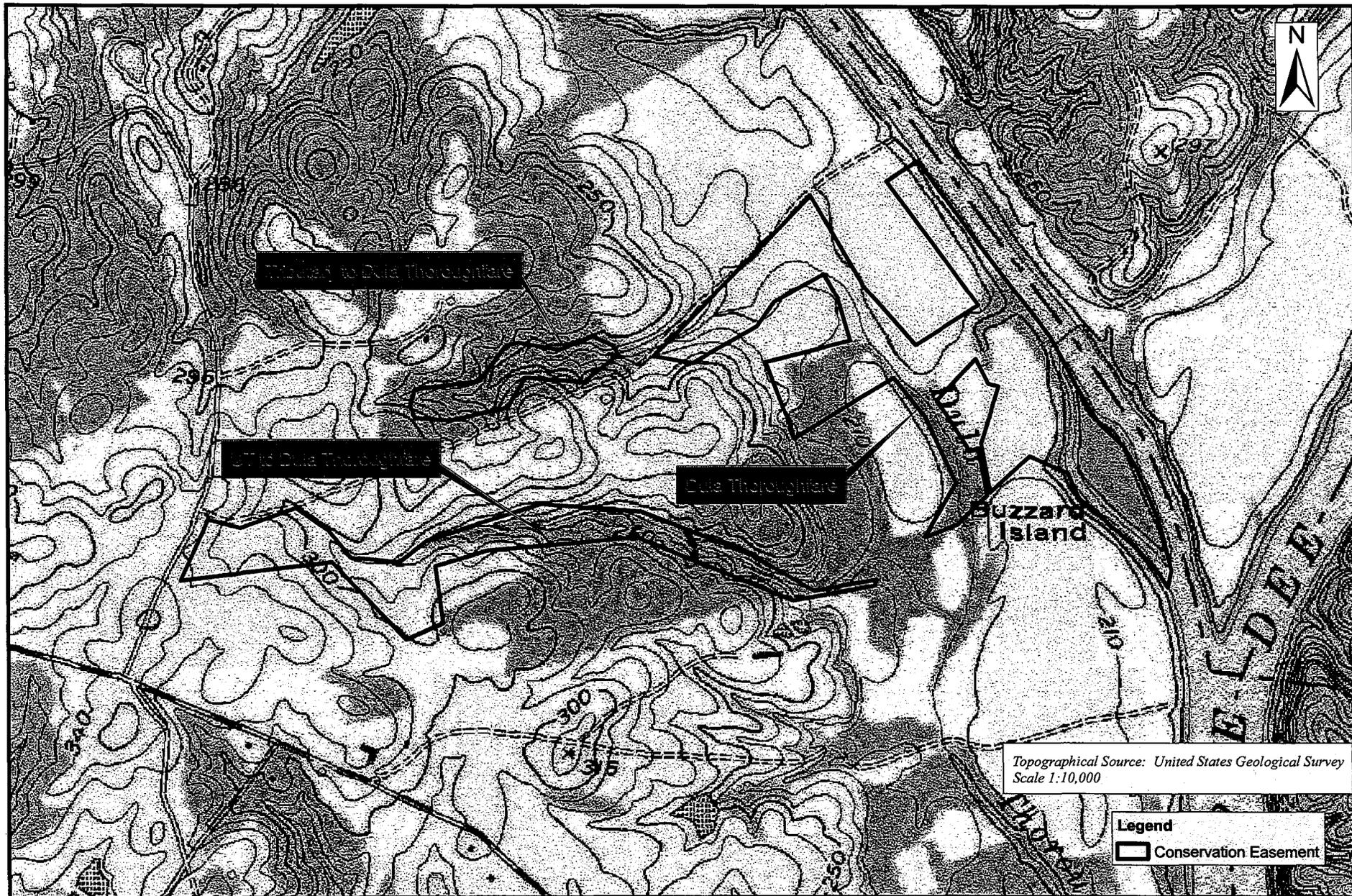


Figure 2: USGS Topography and Hydrologic Features Map
 Dula Thoroughfare Stream & Wetland Restoration
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 Closeout Report



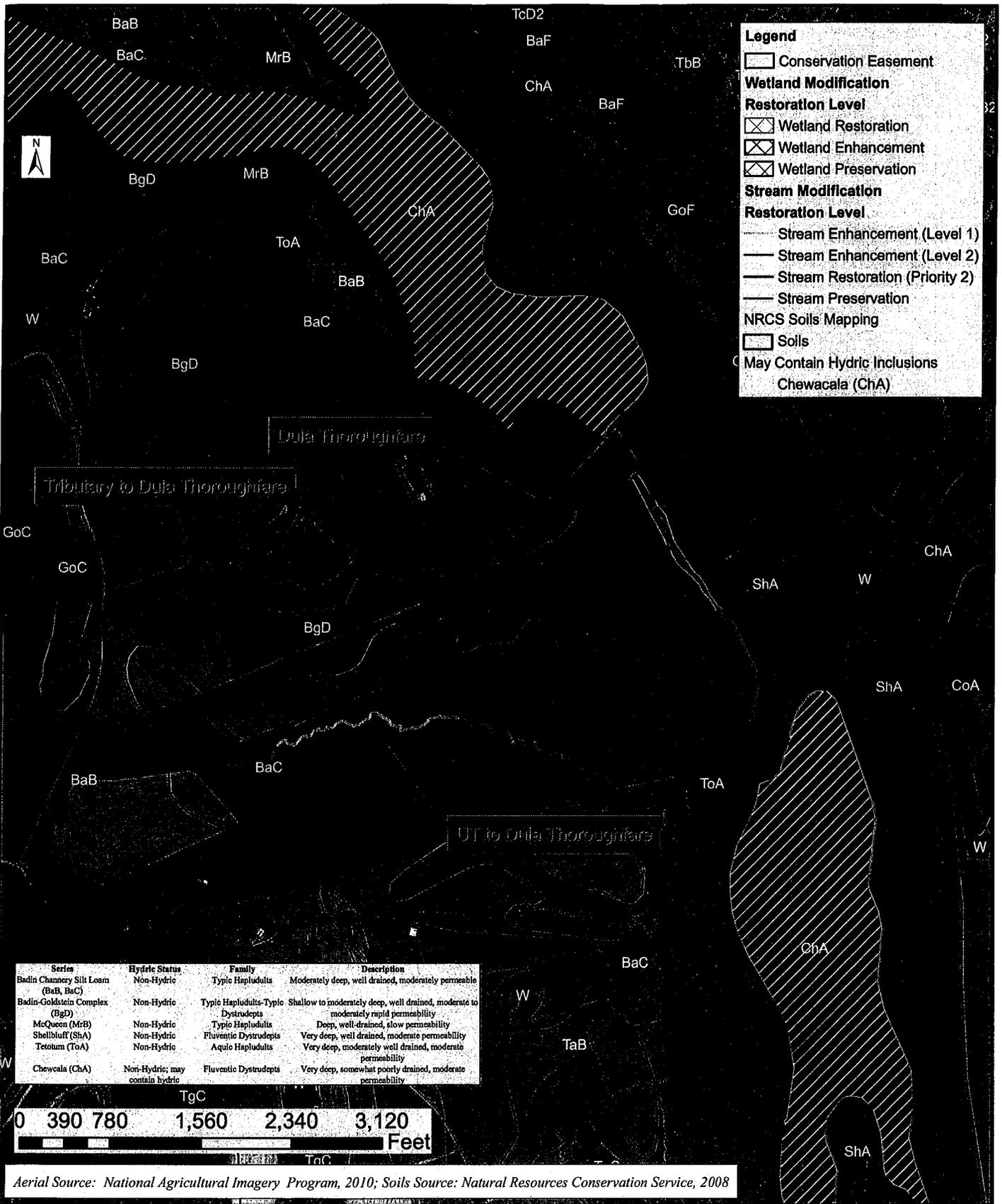


Figure 3: Soils Map
 Dula Thoroughfare Stream & Wetland Restoration
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Table 1. Dula Thoroughfare # 65 Project Components

Restoration Segment/Reach	Pre-Construction (acreage/linear feet)	Mitigation Approach	As-Built Linear Footage/Acreage	Mitigation Ratio	Mitigation Units (SMU/WMU)
Reach 1	1,861	R (P2)	2,025	1:1	2,025
Reach 5	1,029	P	NA	7:1	147
Reach 2	692	R (P2)	705	1:1	705
Reach 6	1,868	P	NA	5:1	374
Reach 7	971	P	NA	5:1	194
Reach 3	1,912	E (I)	1,871	1.5:1	1,247
Reach 4	480	E(II)	480	2.5:1	192
Reach 8	536	P	NA	5:1	107
Reach 9	2,331	P	NA	5:1	466
Wetland 1 (DT)		C	3.1	3:1	1.03
Wetland 2 (Ut DT)	.37	E	NA	2:1	.19
Wetland 3 (Ut DT)	.48	E	NA	2:1	.24
Wetland 4 ((DT)	2.3	P	NA	5:1	.46

Legend

Table 2 Closeout Report - Stream Areas Requiring Observation Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65	
Dula Thoroughfare Stations: 4+35 - 5+05	Poor vegetative cover - Lack of vegetation growth; poor soils - left bank facing downstream
Dula Thoroughfare Stations: 7+30 - 8+27	Poor vegetative cover - Lack of vegetation growth, poor soils - both banks
Dula Thoroughfare Stations: 0+45 - 4+22	Vegetation growing in middle of channel
Dula Thoroughfare Stations: 4+35 - 5+24	
Dula Thoroughfare Stations: 6+05 - 6+18	
Dula Thoroughfare Stations: 8+70 - 9+27	
Dula Thoroughfare Stations: 11+40 - 13+10	
Dula Thoroughfare Stations: 20+24	Beaver Dam (Removal in February 2012)
Dula Tributary Stations: 0+51 - 0+87	Poor vegetation cover - Lack of vegetation growth; left bank facing downstream
Dula Tributary Stations: 1+19 - 1+46	
Dula Tributary Stations: 1+69 - 1+81	
Dula Tributary Stations: 2+72 - 3+08	
Dula Tributary Stations: 4+26 - 4+37	Lack of vegetative cover - Both banks
Dula Tributary Stations: 5+93 - 7+00	Vegetation growing in middle of channel

Table 3: Cross Section and Longitudinal Profile Graphics

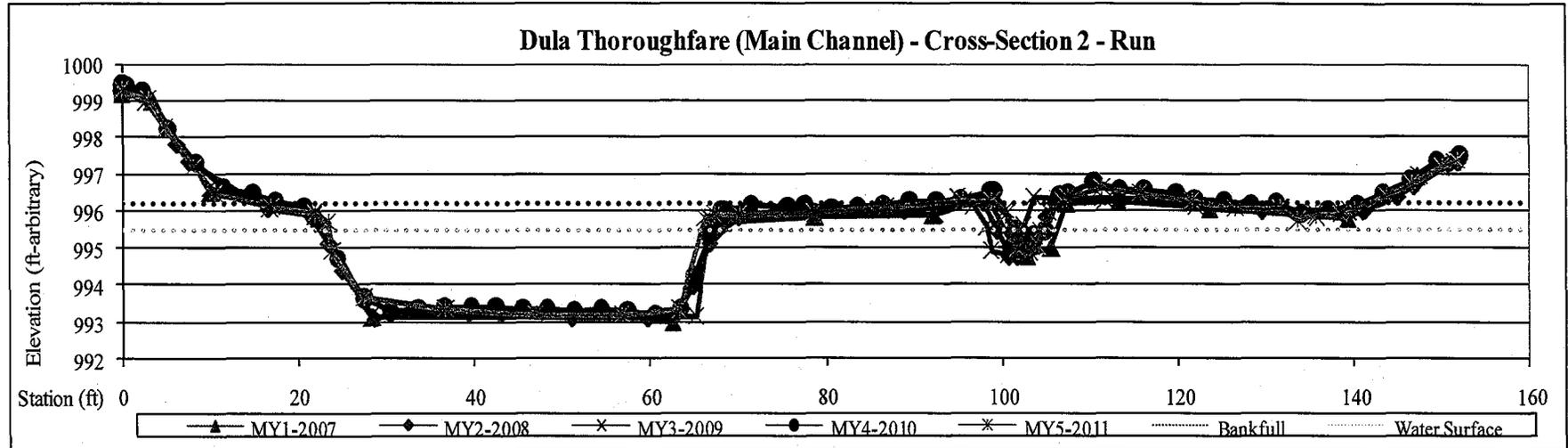
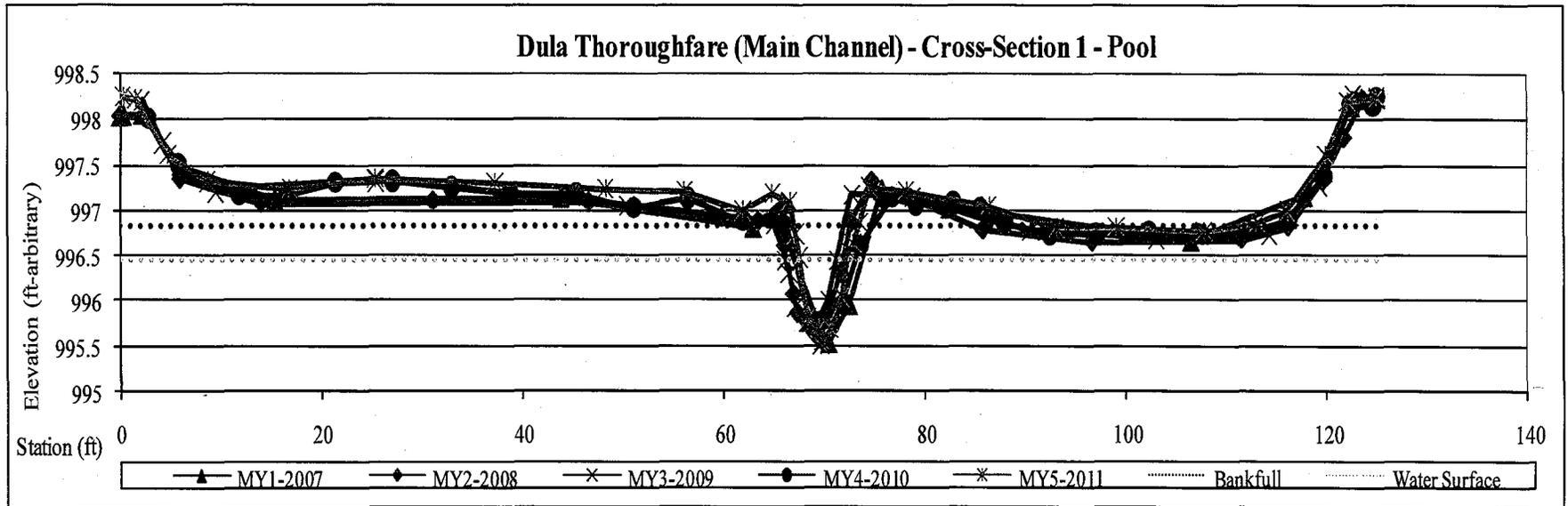


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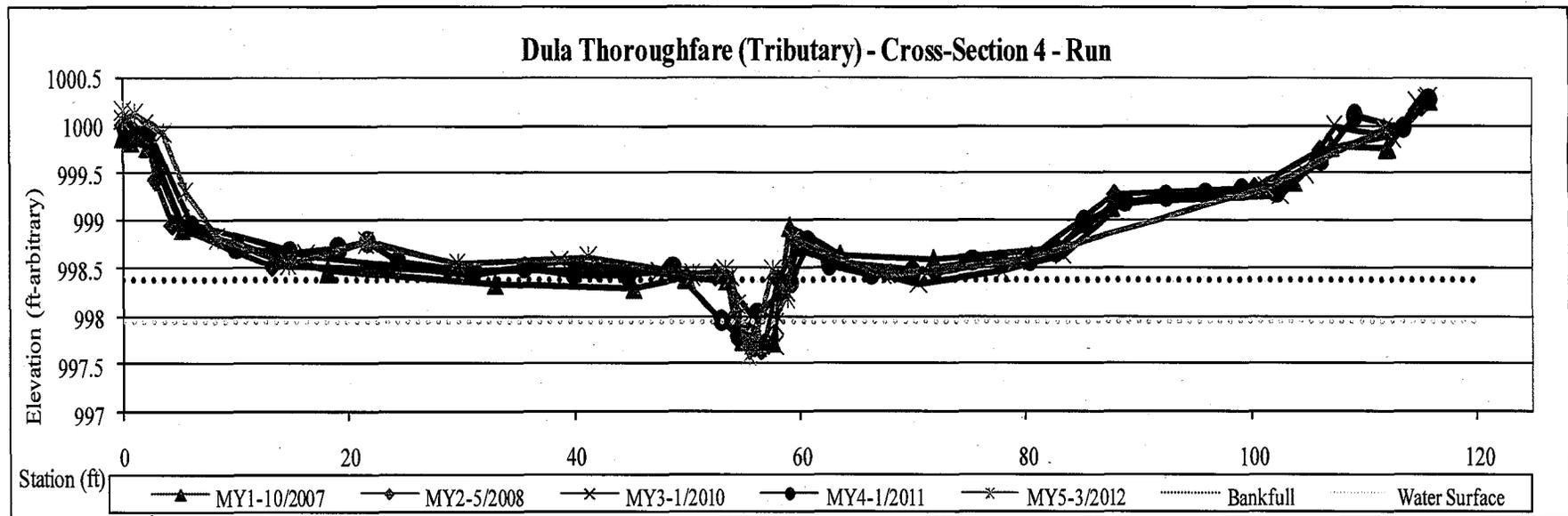
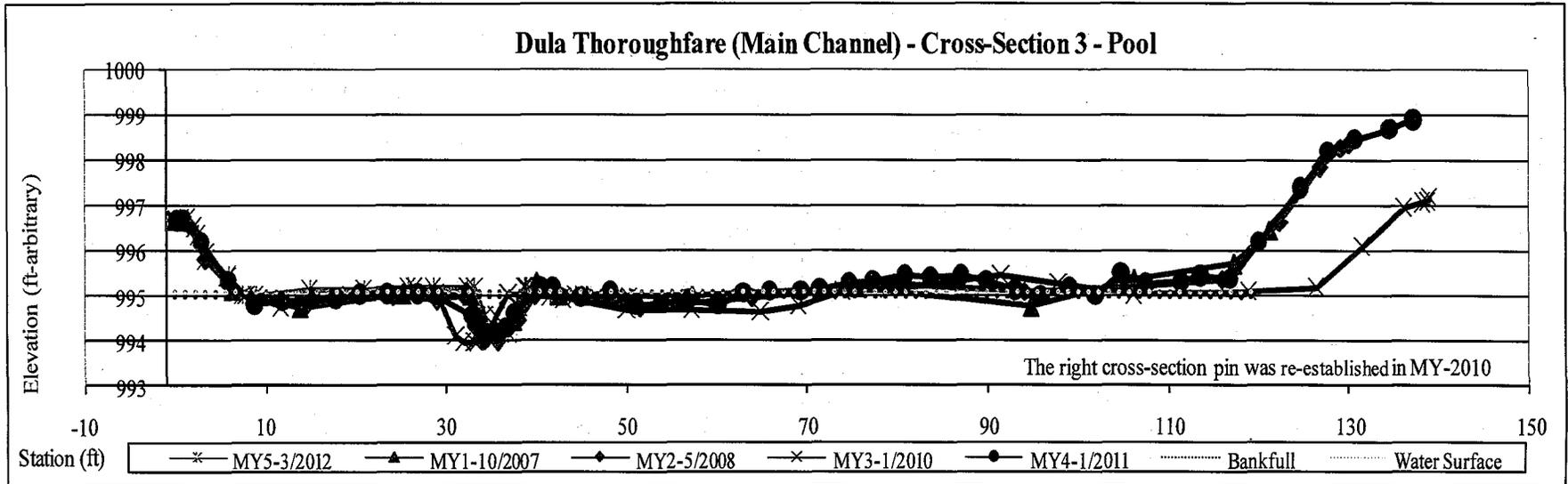


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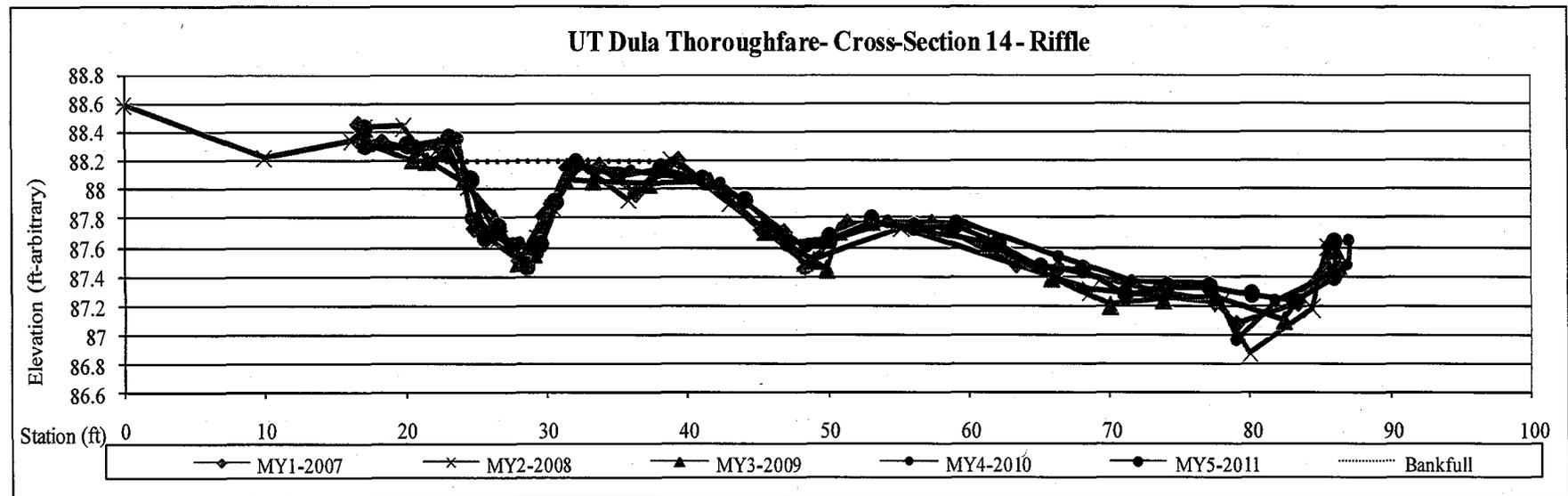
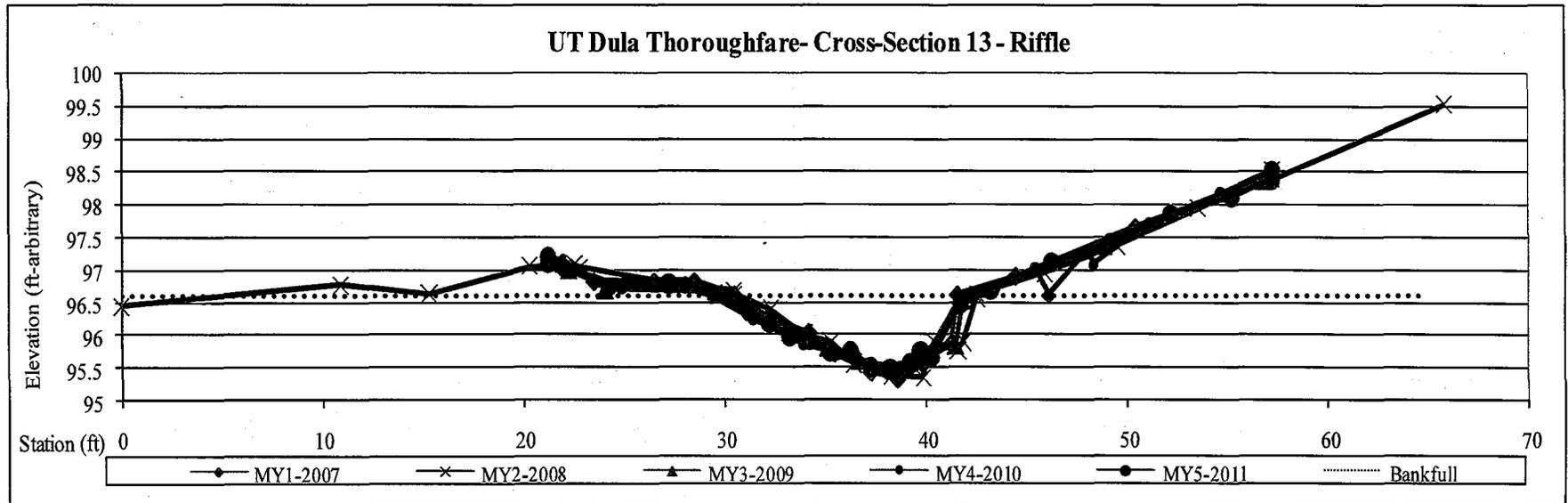


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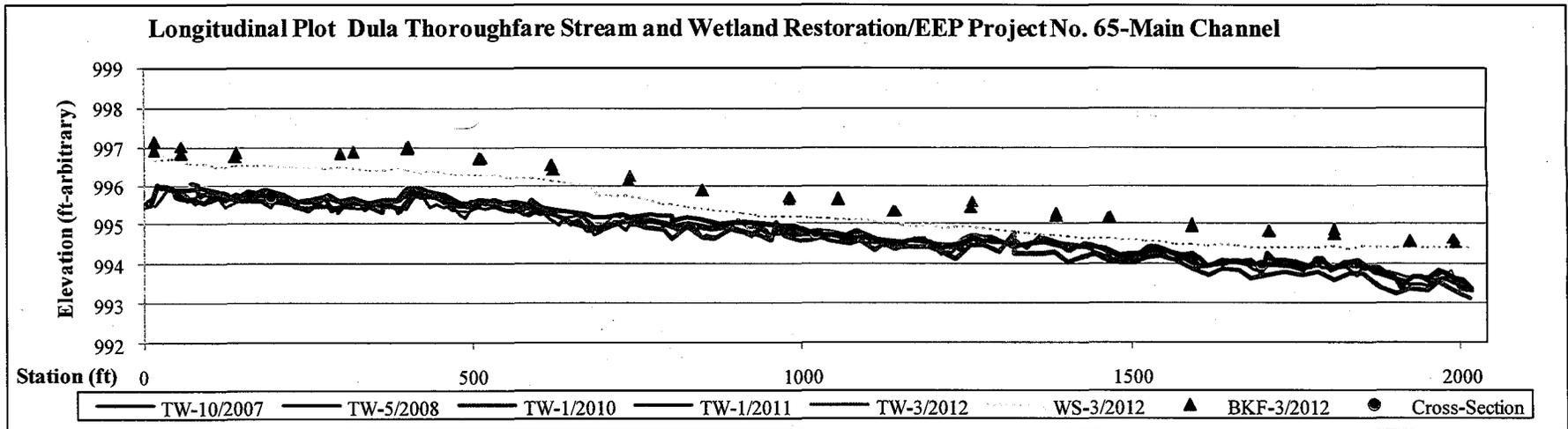
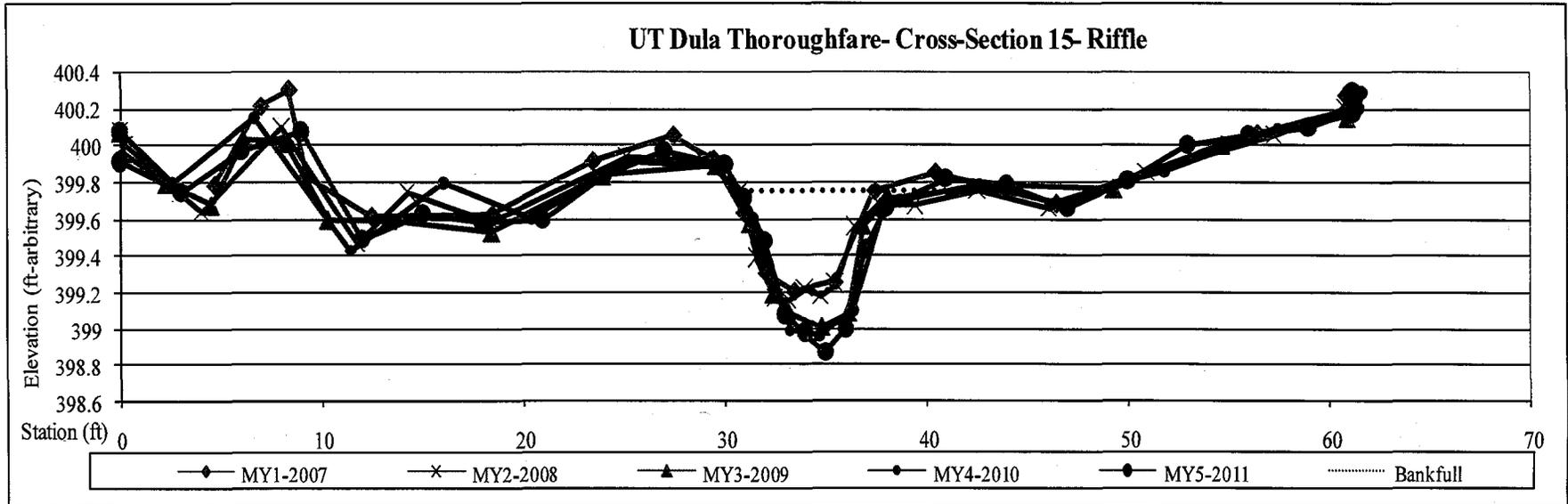


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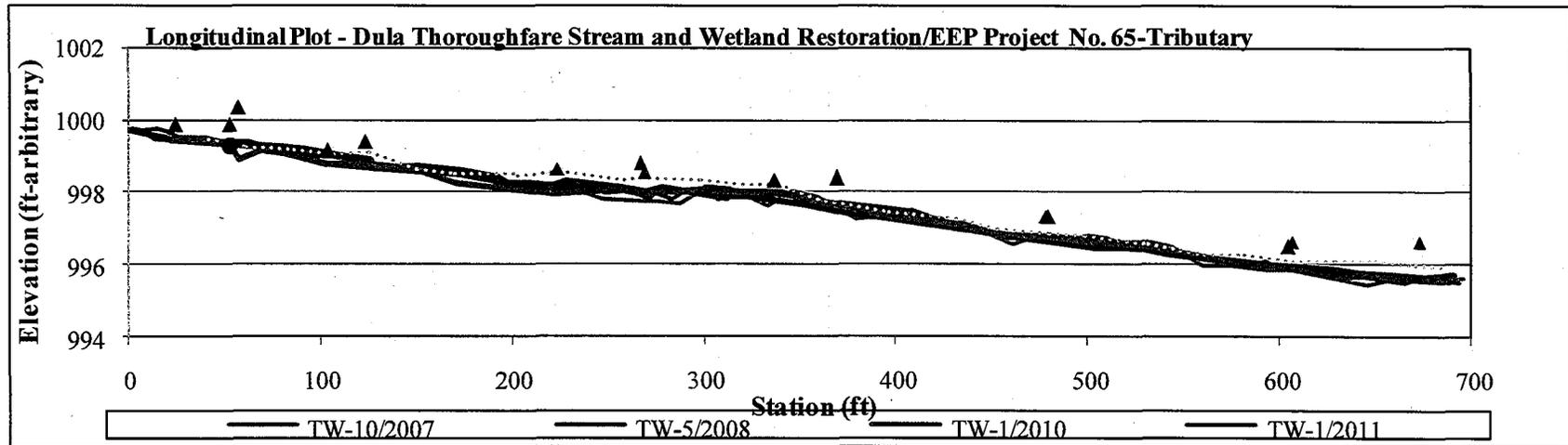


Table 4**Closeout Report - Verification of Bankful Events****Dilla Throughfare Stream and Wetland Restoration EEP Project No. 65**

Date of Collection	Method	Gauge Measurement
12/2007	Crest Gauge	N/A
	(Main Channel and Tributary)	
9/2007	Crest Gauge	N/A
	(Main Channel and Tributary)	
6/2009	Crest Gauge	N/A
	(Main Channel and Tributary)	
1/2011	Visual Observation	N/A
	(Main Channel and Tributary)	
4/19/2011	Crest Gauge	N/A
	(Main Channel and Tributary)	
5/19/2011	Crest Gauge	N/A
	(Main Channel and Tributary)	
7/22/2011	Crest Gauge	N/A
	(Main Channel and Tributary)	
7/22/2011	Visual Observation	N/A
	(Main Channel and Tributary)	
3/22/2012	Crest Gauge	N/A
	(Main Channel and Tributary)	
3/22/2012	Visual Observation	N/A
	(Main Channel and Tributary)	

Table 5.**Closeout Report - Gauge Data****Dula Throughfare Stream and Wetland Restoration EEP Project No. 65****Summary of Groundwater Gauge Results for MY 1 through MY 5**

Gauge	Success Criteria Achieved/Max Consecutive Days During Growing Season (Percentage)				
	MY 1 (2007)	MY 2 (2008)	MY 3 (2009)	MY 4 (2010)	MY 5 (2011)
GW1	N/A*	Yes/81 Days (33%)	Yes/117 Days (47%)^	No/19 Days (8%)	Yes/163 Days (65%)
GW2	Yes/41 Days (16%)**	Yes/69 Days (28%)	Yes/99 Days (40%)	Yes/54 Days (22%)^^	Yes/149 Days (60%)
GW3	Yes/42 Days (17%)**	Yes/80 Days (32%)	Yes/96 Days (39%)	Yes/53 Days (21%)	Yes/87 Days (35%)

*Gauge was not installed until 7/11/2007

**Percentages based off of number reported in EcoScience report, raw data was unavailable

^Groundwater data is only reported through 9/28/2009

^^Groundwater data is only reported through 7/27/2010

Table 6: Morphologic and Hydraulic Monitoring Summary
Closeout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65
Dula Thoroughfare Main Channel

PARAMETER	Cross-Section 1 Pool						
	Pre-Construction**	As-Built***	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Mean Bankfull Width (ft)	14.07	9.60	9.60	7.56	7.57	8.95	6.49
Mean Bankfull Depth (ft)	0.83	0.90	0.90	0.36	0.40	0.62	0.76
Mean Bankfull Cross-sectional Area (ft ²)	6.60	8.90	8.90	9.66	8.71	5.52	4.94
Bankfull Discharge (cfs)	30.00	42.67	42.67	42.67	42.67	42.67	42.67
Channel Slope	0.0019	*	*	0.0014	0.0013	0.0012	0.0014
Channel Sinosity	1.01	1.20	1.20	1.20	1.20	1.20	1.20

PARAMETER	Cross-Section 2 Run						
	Pre-Construction**	As-Built***	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Mean Bankfull Width (ft)	14.07	8.70	8.70	8.00	7.29	6.35	7.44
Mean Bankfull Depth (ft)	0.83	0.90	0.90	0.86	0.81	0.64	0.65
Mean Bankfull Cross-sectional Area (ft ²)	6.60	8.20	8.20	6.88	5.90	4.08	4.81
Bankfull Discharge (cfs)	30.00	42.67	42.67	42.67	42.67	42.67	42.67
Channel Slope	0.0019	*	*	0.0014	0.0013	0.0012	0.0014
Channel Sinosity	1.01	1.20	1.20	1.20	1.20	1.20	1.20

* Data was not provided

**Pre-construction cross-section locations do not correspond to monitoring cross-section locations; therefore, pre-construction cross-section data was averaged along the entire reach.

***As-built data based on Monitoring Year 1 survey

Table 6: Morphologic and Hydraulic Monitoring Summary
Closeout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65
Dula Thoroughfare Main Channel

PARAMETER	Cross-Section 3 Pool						
	Pre-Construction	As-Built	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Mean Bankfull Width (ft)	6.50	7.37	6.50	7.37	7.84	10.87	4.92
Mean Bankfull Depth (ft)	0.60	0.63	0.60	0.63	0.71	0.45	0.61
Mean Bankfull Cross-sectional Area (ft ²)	3.80	4.64	3.80	4.64	5.54	4.94	3.02
Bankfull Discharge (cfs)	42.67	42.67	42.67	42.67	42.67	42.67	42.67
Channel Slope	0.0019	0.0001	*	0.0014	0.0013	0.0012	0.0014
Channel Sinuosity	1.01	1.20	1.20	1.20	1.20	1.20	1.20

PARAMETER	Cross-Section 4 Run						
	Pre-Construction	As-Built	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Mean Bankfull Width (ft)	5.61	9.66	4.90	4.58	5.61	9.66	4.47
Mean Bankfull Depth (ft)	0.37	0.30	0.50	0.48	0.37	0.30	0.33
Mean Bankfull Cross-sectional Area (ft ²)	2.06	2.92	2.40	2.21	2.06	2.92	1.50
Bankfull Discharge (cfs)	42.67	42.67	42.67	42.67	42.67	42.67	42.67
Channel Slope	0.0019	0.0001	*	0.0014	0.0013	0.0012	0.0014
Channel Sinuosity	1.01	1.20	1.20	1.20	1.20	1.20	1.20

* Data was not provided

Table 6: Morphologic and Hydraulic Monitoring Summary
Closeout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65
UT to Dula Thoroughfare

PARAMETER	Cross-Section 13						
DIMENSION	Pre-Construction	As-Built*	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Mean Bankfull Width (ft)	3.70	11.10	11.10	12.10	12.02	13.08	12.48
Mean Bankfull Depth (ft)	1.30	0.80	0.80	0.73	0.69	0.64	0.66
Mean Bankfull Cross-sectional Area (ft ²)	4.80	8.60	8.60	8.83	8.33	8.41	8.22
Bankfull Discharge (cfs)	20.00	30.91	30.91	30.91	30.91	30.91	30.91
Channel Slope	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Channel Sinosity	1.17	1.17	1.17	1.17	1.17	1.17	1.17

PARAMETER	Cross-Section 14						
DIMENSION	Pre-Construction	As-Built*	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Mean Bankfull Width (ft)	4.40	16.20	16.20	17.37	15.56	14.90	8.13
Mean Bankfull Depth (ft)	1.20	0.30	0.30	0.26	0.27	0.26	0.42
Mean Bankfull Cross-sectional Area (ft ²)	5.10	4.30	4.30	4.49	4.17	3.85	3.39
Bankfull Discharge (cfs)	20.00	30.91	30.91	30.91	30.91	30.91	30.91
Channel Slope	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Channel Sinosity	1.17	1.17	1.17	1.17	1.17	1.17	1.17

PARAMETER	Cross-Section 15						
DIMENSION	Pre-Construction	As-Built*	MY1-2007	MY2-2008	MY3-2009	MY4-2010	MY5-2011
Drainage Area (sq mi)	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Mean Bankfull Width (ft)	6.20	7.10	7.10	11.74	7.62	11.26	8.07
Mean Bankfull Depth (ft)	0.70	0.40	0.40	0.26	0.43	0.37	0.48
Mean Bankfull Cross-sectional Area (ft ²)	4.40	2.60	2.60	3.04	3.24	4.12	3.84
Bankfull Discharge (cfs)	20.00	30.91	30.91	30.91	30.91	30.91	30.91
Channel Slope	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Channel Sinosity	1.17	1.17	1.17	1.17	1.17	1.17	1.17

N/A - Not Applicable (no longitudinal profile was required) *As-built data based on Monitoring Year 1 survey

Table 7
Stem Count Total and Planted by Plot and Species
Closout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65

Species	Common Name	Type	MY5-2011										Annual Means							
			Plot 8		Plot 9		Plot 10		Plot 11		Plot 12		Current Mean		MY1 - 2007		MY2 - 2008			
			P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T		
<i>Acer negundo</i>	box-elder	T		3										N/A	1	N/A	N/A	N/A	N/A	1
<i>Acer rubrum</i>	red maple	T												N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Baccharis hamifolia</i>	groundsel tree	S												N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Betula nigra</i>	river birch	T	1	1	17	17	14	14	2	79	2	2	7	23	7	7	7	7	9	
<i>Carya glabra</i>	pignut hickory	T												N/A	N/A	N/A	N/A	N/A	N/A	
<i>Carya ovata</i>	shagbark hickory	T												N/A	N/A	1	1	1	1	
<i>Celtis laevigata</i>	sugarberry	T					1	1						1	1	1	1	1	1	
<i>Cephalanthus occidentalis</i>	common buttonbush	T	1	1	5	5	3	3			3	3	2	2	3	3	3	3	3	
<i>Cornus amomum</i>	silky dogwood	T	3	3	9	14	3	3					3	4	4	4	4	4	5	
<i>Cornus florida</i>	flowering dogwood	S												N/A	N/A	1	1	1	1	
<i>Diospyros virginiana</i>	common persimmon	T												N/A	N/A	N/A	N/A	N/A	N/A	
<i>Fagus grandifolia</i>	American beech	T												N/A	N/A	N/A	N/A	N/A	N/A	
<i>Fraxinus pennsylvanica</i>	green ash	T	3	5			4	4				1	1	2	3	3	4	3		
<i>Liquidambar styraciflua</i>	sweet gum	T								3				N/A	1	N/A	N/A	N/A	1	
<i>Nyssa biflora</i>	swamp tupelo	T	1	1	1	1								1	1	1	1	1	1	
<i>Pinus taeda</i>	loblolly pine	T												N/A	N/A	N/A	N/A	N/A	N/A	
<i>Platanus occidentalis</i>	American sycamore	T			1	1			5	5				1	1	3	3	3	3	
<i>Quercus michauxii</i>	swamp chestnut oak	T	2	2			1	1	1	1				1	1	1	1	1	1	
<i>Quercus pagoda</i>	cherrybark oak	T	2	4	1	3	1	1			1	1	1	2	1	1	1	1	1	
<i>Quercus phellos</i>	willow oak	T	2	4	2	2	2	2	1	1				2	2	2	2	2	2	
<i>Quercus rubra</i>	Northern red oak	T												N/A	N/A	N/A	N/A	N/A	N/A	
<i>Quercus sp.</i>	oak species	T												N/A	N/A	N/A	N/A	N/A	3	
<i>Ulmus alata</i>	winged elm	T										48		N/A	10	N/A	N/A	N/A	N/A	
<i>Ulmus americana</i>	American elm	T			3	4	1	1		1				1	1	2	2	2	3	
Plot Area (acres)			0.0247																	
Species Count			8	9	8	8	9	9	4	6	3	5	11	13	7	7	7	8		
Stem Count			15	24	39	47	30	30	9	90	6	55	22	51	21	21	20	24		
Stems per Acre			607	972	1579	1903	1215	1215	364	3644	243	2227	802	1992	842	842	802	980		

Type=Shrub or Tree
P = Planted
T = Total

Table 7
Stem Count Total and Planted by Plot and Species
Closout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65

Species	Common Name	Type	MYS-2011										Annual Means						
			Plot 8		Plot 9		Plot 10		Plot 11		Plot 12		Current Mean		MY3 - 2009		MY4 - 2010		
			P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	
<i>Acer negundo</i>	box-elder	T		3										N/A	1	N/A	N/A	N/A	1
<i>Acer rubrum</i>	red maple	T												N/A	N/A	N/A	N/A	N/A	0
<i>Baccharis hamilifolia</i>	groundsel tree	S												N/A	N/A	N/A	N/A	N/A	1
<i>Betula nigra</i>	river birch	T	1	1	17	17	14	14	2	79	2	2	7	23	7	7	7	7	
<i>Carya glabra</i>	pignut hickory	T												N/A	N/A	N/A	N/A	N/A	N/A
<i>Carya ovata</i>	shagbark hickory	T												N/A	N/A	1	1	1	1
<i>Celtis laevigata</i>	sugarberry	T					1	1					1	1	1	1	1	1	
<i>Cephalanthus occidentalis</i>	common buttonbush	T	1	1	5	5	3	3					3	2	2	3	3	3	4
<i>Cornus amomum</i>	silky dogwood	T	3	3	9	14	3	3						3	4	4	4	4	5
<i>Cornus florida</i>	flowering dogwood	S												N/A	N/A	1	1	N/A	N/A
<i>Diospyros virginiana</i>	common persimmon	T												N/A	N/A	N/A	N/A	N/A	N/A
<i>Fagus grandifolia</i>	American beech	T												N/A	N/A	N/A	N/A	N/A	N/A
<i>Fraxinus pennsylvanica</i>	green ash	T	3	5			4	4				1	1	2	4	4	4	4	
<i>Liquidambar styraciflua</i>	sweet gum	T								3				N/A	1	N/A	N/A	N/A	3
<i>Nyssa biflora</i>	swamp tupelo	T	1	1	1	1								1	1	1	1	1	1
<i>Pinus taeda</i>	loblolly pine	T												N/A	N/A	N/A	N/A	N/A	1
<i>Platanus occidentalis</i>	American sycamore	T			1	1			5	5				1	1	3	3	3	3
<i>Quercus michauxii</i>	swamp chestnut oak	T	2	2			1	1	1	1				1	1	1	1	1	1
<i>Quercus pagoda</i>	cherrybark oak	T	2	4	1	3	1	1				1	1	1	2	1	1	1	2
<i>Quercus phellos</i>	willow oak	T	2	4	2	2	2	2	1	1				2	2	2	2	2	2
<i>Quercus rubra</i>	Northern red oak	T												N/A	N/A	N/A	N/A	N/A	1
<i>Quercus sp.</i>	oak species	T												N/A	N/A	N/A	N/A	N/A	N/A
<i>Ulmus alata</i>	winged elm	T											48	N/A	10	N/A	N/A	N/A	58
<i>Ulmus americana</i>	American elm	T			3	4	1	1		1				1	1	2	2	2	8
Plot Area (acres)			0.0247																
Species Count			8	9	8	8	9	9	4	6	3	5	11	13	12	12	12	12	
Stem Count			15	24	39	47	30	30	9	90	6	55	22	51	29	29	29	29	
Stems per Acre			607	972	1579	1903	1215	1215	364	3644	243	2227	802	1992	810	818	810	818	

Type=Shrub or Tree
P = Planted
T = Total

Table 7

Stem Count Total and Planted by Plot and Species

Closout Report: Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65

Species	Common Name	Type	MY5-2011						Annual Means											
			Plot 13		Plot 14		Plot 15		Current Mean		MY1 - 2007		MY2 - 2008		MY3 - 2009		MY4 - 2010			
			P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T		
<i>Acer rubrum</i>	red maple	T						2	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17	
<i>Carya glabra</i>	pignut hickory	T							N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	
<i>Celtis laevigata</i>	sugarberry	T	2	2					1	1	4	4	2	3	3	3	2	2		
<i>Cornus amomum</i>	silky dogwood	T							N/A	N/A	N/A	N/A	N/A	2	N/A	N/A	N/A	N/A		
<i>Cornus florida</i>	flowering dogwood	S			1	1	1	1	1	1	1	1	1	1	1	1	1	1		
<i>Diospyros virginiana</i>	common persimmon	T							N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	
<i>Fagus grandifolia</i>	American beech	T	1	1	1	3	2	4	1	3	1	1	1	1	1	1	1	2		
<i>Liquidambar styraciflua</i>	sweet gum	T				1		2	N/A	1	N/A	N/A	N/A	1	N/A	N/A	N/A	5		
<i>Nyssa biflora</i>	swamp tupelo	T							N/A	N/A	1	1	1	1	1	1	N/A	N/A		
<i>Pinus taeda</i>	loblolly pine	T		22		3		11	N/A	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11		
<i>Quercus falcata</i>	southern red oak	T	4	4	2	3	1	3	2	3	2	2	1	1	2	2	2	2		
<i>Quercus phellos</i>	willow oak	T					1	1	1	1	1	1	1	2	1	1	1	1		
<i>Quercus rubra</i>	northern red oak	T	2	2					1	1	4	4	4	4	4	4	4	4		
<i>Rhus glabra</i>	smooth sumac	S		7					N/A	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3		
<i>Taxodium distichum</i>	bald cypress	T							N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1		
Plot Area (acres)			0.0247																	
Species Count			4	6	3	5	4	7	4	7	4	4	4	4	6	6	4	8		
Stem Count			9	38	4	11	5	24	6	23	8	8	6	6	9	9	7	27		
Stems per Acre			364	1538	162	445	202	972	243	985	310	310	243	256	283	283	243	1039		

Type=Shrub or Tree

P = Planted

T = Total

Table 8
Closeout Report - Comparison of Historic Rainfall to Observed Rainfall
Dula Thoroughfare Stream and Wetland Restoration EEP Project No. 65

Month	MY1	MY2	MY3	MY4	MY5	Average	30%	70%
Jan	3.86	1.63	2.04	3.07	1.05	3.74	2.55	4.92
Feb	3.31	3.35	1.93	4.34	3.01	3.63	2.59	4.67
Mar	3.43	4.25	5.37	2.65	4.36	4.50	3.42	5.57
April	14.61	4.62	2.40	0.47	1.98	3.09	2.16	4.02
May	0.24	1.85	5.24	4.89	3.46	3.21	2.29	4.12
June	4.61	0.67	2.16	4.73	6.49	4.25	3.01	5.48
July	1.97	4.48	4.66	3.74	3.91	4.31	3.42	5.20
Aug	2.79	5.84	2.64	6.18	5.09	4.29	3.04	5.53
Sept	1.14	4.43	2.09	1.06	8.60	3.84	2.61	5.07
Oct	4.10	2.17	2.15	0.00	3.75	3.54	2.50	4.57
Nov	0.28	2.29	7.00	0.36	3.75	3.14	2.47	3.81
Dec	5.48	3.34	5.68	2.24	1.93	3.02	2.35	3.69
Year	45.82	38.92	43.36	33.73	47.38	44.53	32.41	56.65

30%

70%

Month	MY1	MY2	MY3	MY4	MY5	Month	MY1	MY2	MY3	MY4	MY5
Jan	1.16	0.49	0.61	0.92	0.32	Jan	2.70	1.14	1.43	2.15	0.74
Feb	0.99	1.01	0.58	1.30	0.90	Feb	2.32	2.35	1.35	3.04	2.11
Mar	1.03	1.28	1.61	0.80	1.31	Mar	2.40	2.98	3.76	1.86	3.05
April	4.38	1.39	0.72	0.14	0.59	April	10.23	3.23	1.68	0.33	1.39
May	0.07	0.56	1.57	1.47	1.04	May	0.17	1.30	3.67	3.42	2.42
June	1.38	0.20	0.65	1.42	1.95	June	3.23	0.47	1.51	3.31	4.54
July	0.59	1.34	1.40	1.12	1.17	July	1.38	3.14	3.26	2.62	2.74
Aug	0.84	1.75	0.79	1.85	1.53	Aug	1.95	4.09	1.85	4.33	3.56
Sept	0.34	1.33	0.63	0.32	2.58	Sept	0.80	3.10	1.46	0.74	6.02
Oct	1.23	0.65	0.65	0.00	1.13	Oct	2.87	1.52	1.51	0.00	2.63
Nov	0.08	0.69	2.10	0.11	1.13	Nov	0.20	1.60	4.90	0.25	2.63
Dec	1.64	1.00	1.70	0.67	0.58	Dec	3.84	2.34	3.98	1.57	1.35

All information gathered from nearby weather station KNCTROY1, information gathered from www.wunderground.com



SUMMARY

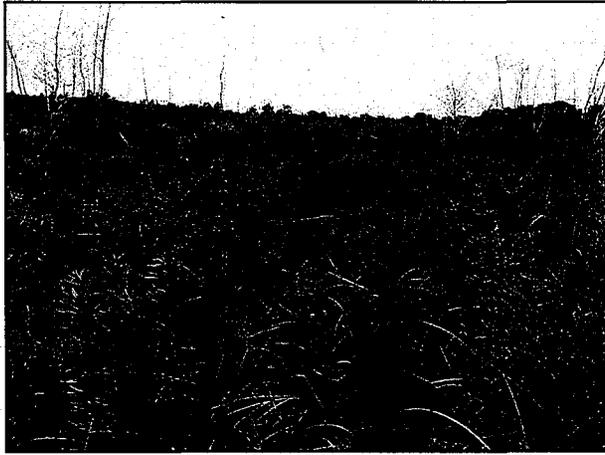
EEP Recommendations and Conclusions

Overall the Site has matured as expected and is trending towards complete stability and self-sustainability. Stream related inefficiencies discussed earlier appear to be attributed to watershed contribution and beaver activity, not design-related instability within restored reaches. Watershed contribution of sediment appears to be the primary reason for stream issues such as aggradation and in-stream vegetative growth. Regarding riparian vegetation, the Site has exhibited acceptable coverage, survivability and diversity that coincide with similar mitigation projects. Areas of vegetative inefficiencies are very minor and are expected to self correct over time.

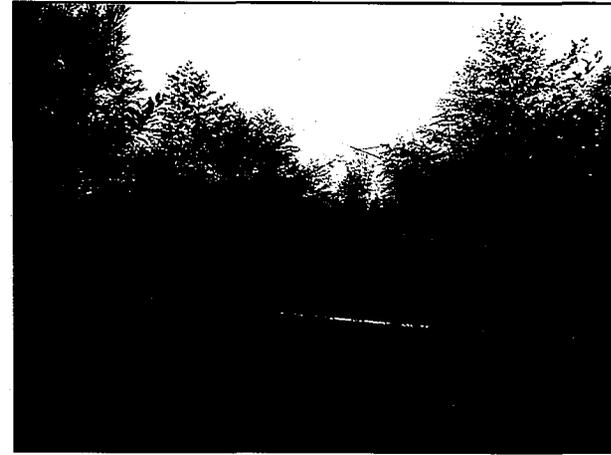
EEP recommends site closure as the site is trending towards a sustainable system.

Contingencies

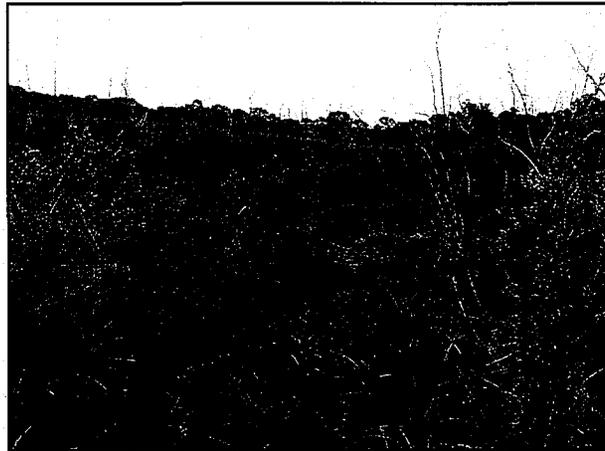
Although the Site is experiencing some unintended characteristics, they do not warrant contingency intervention. An attempt to correct inefficiencies would likely result in more disturbance than benefit.



Cross Section 1: View Upstream
(MY 1 - 10/2006)



Cross Section 1: View Upstream
(MY 5 - 7/2011)



Cross Section 1: View Upstream
(MY 1 - 10/2006)



Cross Section 2: View Downstream
(MY 5 - 7/2011)

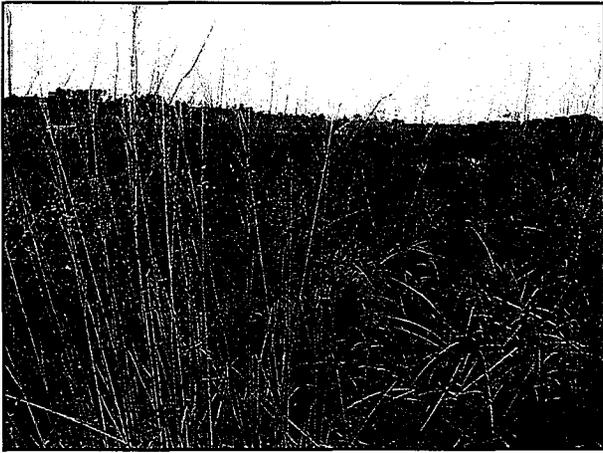
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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
EEP Project No. 65
Closeout Report
Page 1

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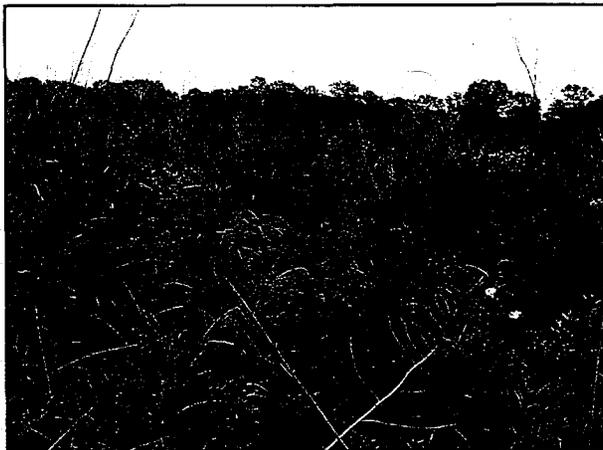




Cross Section 2: View Upstream
(MY 1 - 10/2006)



Cross Section 2: View Upstream
(MY 5 - 7/2011)



Cross Section 2: View Upstream
(MY 1 - 10/2006)



Cross Section 2: View Downstream
(MY 5 - 7/2011)

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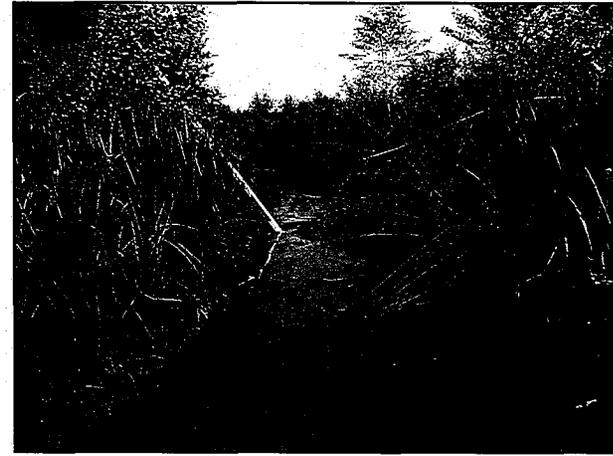
Figure 4: Photographs
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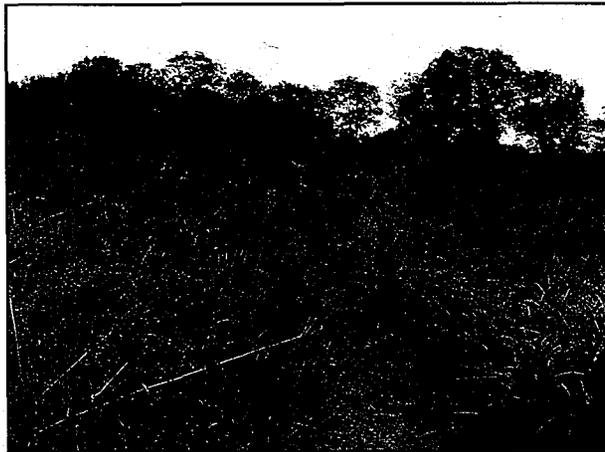




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(MY 1 - 10/2006)



Cross Section 3: View Upstream
(MY 5 - 7/2011)



Cross Section 3: View Upstream
(MY 1 - 10/2006)



Cross Section 3: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
EEP Project No. 65
Closeout Report
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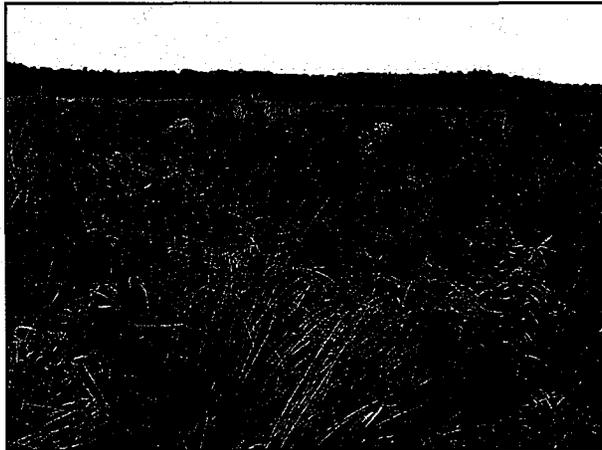




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(MY 1 - 10/2006)



Cross Section 4: View Upstream
(MY 5 - 7/2011)



Cross Section 4: View Upstream
(MY 1 - 10/2006)



Cross Section 4: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
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EEP Project No. 65
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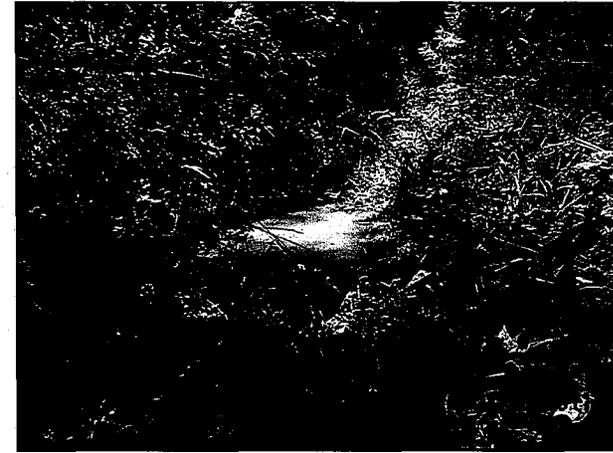
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(MY 1 - 10/2006)



Cross Section 13: View Upstream
(MY 5 - 7/2011)



Cross Section 13: View Upstream
(MY 1 - 10/2006)



Cross Section 13: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
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Cross Section 14: View Upstream
(MY 1 - 10/2006)



Cross Section 14: View Upstream
(MY 5 - 7/2011)



Cross Section 14: View Upstream
(MY 1 - 10/2006)



Cross Section 14: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
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Cross Section 15: View Upstream
(MY 1 - 10/2006)



Cross Section 15: View Upstream
(MY 5 - 7/2011)



Cross Section 15: View Upstream
(MY 1 - 10/2006)



Cross Section 15: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
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Photo Point 1: View Upstream
(MY 1 - 7/2006)

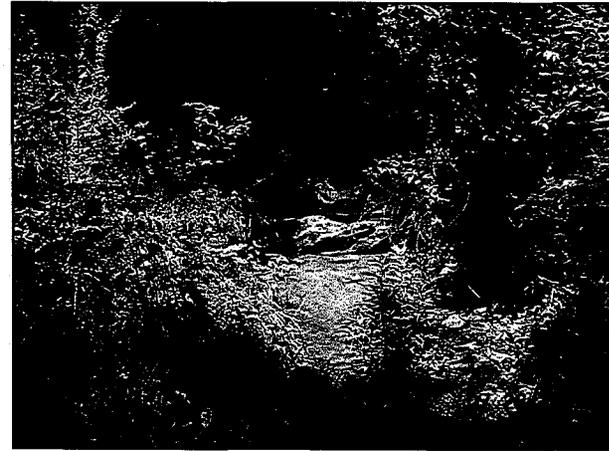


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(MY 5 - 7/2011)

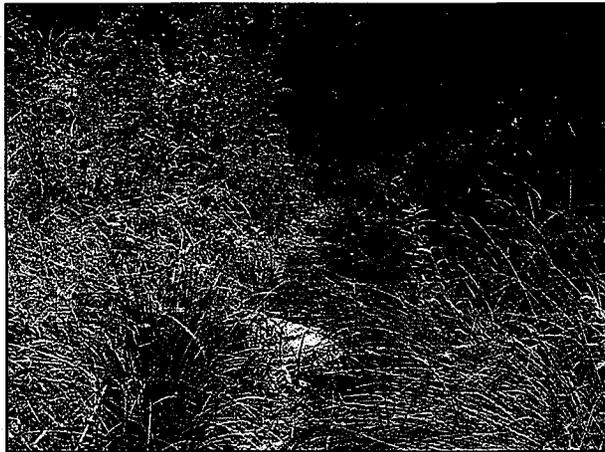


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(MY 1 - 7/2006)

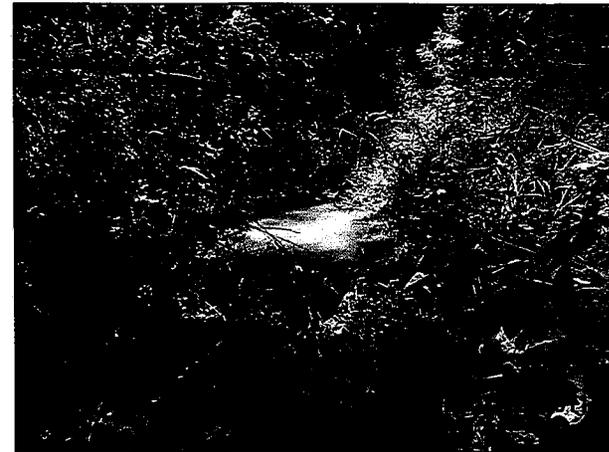


Photo Point 1: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
EEP Project No. 65
Closeout Report
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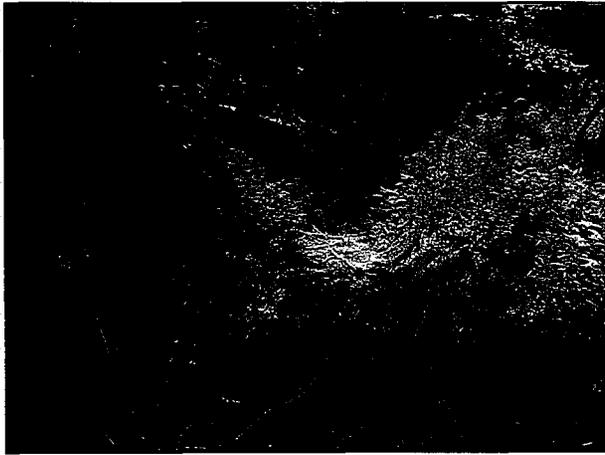


Photo Point 2: View Upstream
(MY 1 - 7/2006)



Photo Point 2: View Upstream
(MY 5 - 7/2011)

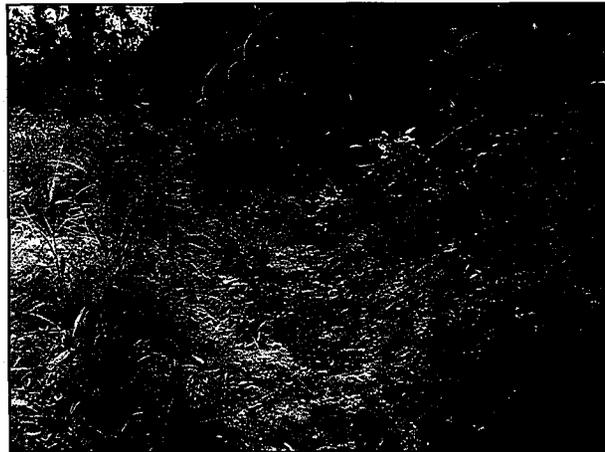


Photo Point 2: View Downstream
(MY 1 - 7/2006)



Photo Point 2: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
EEP Project No. 65
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Photo Point 3: View Upstream
(MY 1 - 7/2006)



Photo Point 3: View Upstream
(MY 5 - 7/2011)



Photo Point 3: View Downstream
(MY 1 - 7/2006)



Photo Point 3: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
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Photo Point 4: View Upstream
(MY 1 - 7/2006)



Photo Point 4: View Upstream
(MY 5 - 7/2011)



Photo Point 4: View Downstream
(MY 1 - 7/2006)



Photo Point 4: View Downstream
(MY 5 - 7/2011)

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Figure 4: Photographs
Dula Thoroughfare Stream and Wetland Restoration Project
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APPENDIX A WATERSHED PLANNING SUMMARY

There is no Local Watershed Plan associated with this project; it is not located in a Targeted Local Watershed.

APPENDIX B – Land Ownership and Protection

SITE PROTECTION INSTRUMENT

The land required for the construction, management, and stewardship of this mitigation project includes a portion of the following parcels:

Grantor/Grantee	County	Site Protection Instrument	Deed Book & Page Number	Acreage Protected
Rocky Pee Dee, LLC/ The Landtrust for Central North Carolina et al	Anson	Conservation Easement	678/128	44.22
Rocky Pee Dee, LLC/ The North Carolina DOT	Anson	Conservation Easement	722/186	63.11
Rocky Pee Dee, LLC/ State of North Carolina	Anson	Conservation Easement	816/183	3.58
Rocky Pee Dee, LLC/ State of North Carolina	Anson	Conservation Easement	859/259	9.86

http://www.nceep.net/GIS_DATA/PROPERTY/65_DulaThorofareAtBishopSite.pdf

LONG-TERM MANAGEMENT PLAN

Upon approval for close-out by the Interagency Review Team (IRT), NCDOT and EEP will determine the long-term steward for these parcels. Conservation easements that are held in the name of the State of North Carolina may be conveyed to the DENR Stewardship Program upon approval by the parties.



APPENDIX C
JURISDICTIONAL DETERMINATIONS AND PERMITS

**U.S. ARMY CORPS OF ENGINEERS
Wilmington District**

Action ID: 200430199

County: Anson

Notification of Jurisdictional Determination

**Property Owner: NCDOT
Address: Gregory J. Thorpe, Project
Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548
Telephone: 919-733-3141**

**Authorized Agent: EcoScience Corporation
Attn: W. Grant Lewis
Address: 1101 Haynes Street
Suite 101, Raleigh, NC 27604
Telephone: 919-828-3433**

**Size and Location of Property (waterbody, Highway name/number, town, etc.):
Bishop Property Stream and Wetland Mitigation Site, Approximately 930-acre parcel adjacent to
the Rocky River off Carpenter Road north of Ansonville in the Yadkin/Pee Dee River Basin**

**Basis for Determination: Delineation Maps and GPS surveys dated January 27, 2004 with
accompanying Wetland Data Forms and Stream Assessment Worksheets from August and
September 2003 identifying hydric soil, wetland hydrology, hydrophytic vegetation, stream flow, an
ordinary high waterline and surface hydrologic connections to the Yadkin/Pee Dee River System.**

Indicate Which of the Following apply:

- ◇ The wetlands and surface waters on this project have been delineated and the limits of the Corps jurisdiction have been explained to you. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

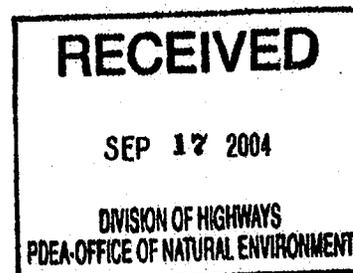
**Placement of dredged or fill material in streams and wetlands on this property without a
Department of the Army permit is in most cases a violation of Section 301 of the Clean Water Act
(33 USC 1311). A permit is not required for work on the property restricted entirely to existing
high ground. If you have any questions regarding the Corps of Engineers regulatory program,
please contact
Steven W. Lund at 828-271-7980 x 223.**

Project Manager Signature _____

Date: January 13, 2004

Expiration Date: January 13, 2009

**SURVEY PLAT OR FIELD SKETCH OF DESCRIBED PROPERTY AND THE WETLAND
DELINEATION FORM MUST BE ATTACHED TO THIS FORM.**



**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUISIT FOR APPEAL**

Applicant: NC Department of Transportation	File Number: 200430199	Date: 13 Jan 2004
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I: The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/ow/cecwo/reg/or/Corps/regulations/33CFR/Part/331>.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II: REQUEST FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

Mr. Steven W. Lund, Project Manager
US Army Corps of Engineers, Wilmington District
Asheville Regulatory Field Office, CESAW-RG-A
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006

If you only have questions regarding the appeal process you may also contact:

Mr. Arthur Middleton, Administrative Appeal Review Officer
CESAD-ET-CO-R
US Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

RECEIVED

APR 27 2005

Action ID. 200531348

County: Anson

USGS Quad: Mt. Gilead

NC ECOSYSTEM
MANAGEMENT PROGRAM

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property Owner / Authorized Agent: NC Ecosystem Enhancement Program, Attn: Mr. Jeff Jurek
Address: 1652 Mail Service Center
Raleigh, North Carolina
27699-1652

Telephone No.: 919-715-0476

Size and location of property (water body, road name/number, town, etc.): Approximate 195-acre parcel adjacent to Camp Branch, Dula Thoroughfare and Rocky River between Pinkston River Road and Carpenter Road three miles north of Ansonville.

Description of projects area and activity: Discharge dredged or fill material into wetlands and surface waters to facilitate the restoration of 5663 linear feet of stream channel, the restoration of 5.6 acres of wetland, the enhancement of 8496 linear feet of stream channel and the enhancement of 0.9 acres of wetland through the excavation of new channels and floodplain benches, excavation of backwater sloughs, installation of rock and log vanes, plugging and refilling old channels, construction of temporary stream crossings and permanent stream fords, stream bank stabilization and replanting of stream banks and floodplain buffer. **SPECIAL CONDITIONS: See attached sheet for special conditions.**

Applicable Law: Section 404 (Clean Water Act, 33 USC 1344)
 Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number: _____
Nationwide Permit Number: 27

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted plans. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all modifications. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Quality (telephone (919) 733-1786) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact Mr. Steven Lund at telephone (828) 271-7980 x 223.

Corps Regulatory Official: Steven Lund *swl*

Date: 4/20/2005

Expiration Date of Verification: 3/18/2007

SPECIAL CONDITIONS FOR NATIONWIDE PERMIT 27
NC Ecosystem Enhancement Program
Action ID 200531348
April 20, 2005

- a. The permittee shall fully implement the Bishop Property Restoration Plan, Anson County, North Carolina, prepared by EcoScience Corporation and dated September 2004 except as conditioned below.
- b. Authorization is provided for construction of the proposed stream and wetland mitigation site and does not obligate the US Army Corps of Engineers to recognize this project as a mitigation bank. The permittee will provide an As Built plan to the US Army Corps of Engineers, Asheville Regulatory Field Office within 60 days of completion of the authorized work.
- c. All temporary stream crossings and channel diversions will be constructed of non-erodable materials and will be removed in their entirety upon completion of the authorized work.
- d. All channel relocations will be constructed in a dry work area and stabilized before stream flows are diverted through them. The US Army Corps of Engineers, Asheville Regulatory Field Office shall be notified in advance by facsimile transmission or electronic mail of the intended diversion of water into new permanent channels.

Determination of Jurisdiction:

- Based on preliminary information, there appear to be waters of the US within the above described project area. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

- There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

- There are waters of the US and/or wetlands within the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

- The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued _____. Action ID _____

Basis of Jurisdictional Determination: _____

Corps Regulatory Official: Steven Lund *SLW*

Date: 3/20/2005

SURVEY PLATS, FIELD SKETCH, WETLAND DELINEATION FORMS, PROJECT PLANS, ETC., MUST BE ATTACHED TO THE FILE COPY OF THIS FORM, IF REQUIRED OR AVAILABLE.

Action ID Number: 200511348

County: Anson

Permittee: North Carolina Ecosystem Enhancement Program, Attn: Mr. Jeff Jurek

Date Permit Issued: 4/20/2005

Project Manager: Lund

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
ASHEVILLE REGULATORY FIELD OFFICE
151 PATTON AVENUE, ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Subject: [Fwd: Bishop Property Stream and Wetland Enhancement and Restoration, Anson Co., 05-0377]

From: Jeff Jurek <Jeff.Jurek@ncmail.net>

Date: Thu, 14 Apr 2005 14:02:07 -0400

To: Lin Xu <lin.xu@ncmail.net>

File email, serves as write off for certification.

----- Original Message -----

Subject: Bishop Property Stream and Wetland Enhancement and Restoration, Anson Co., 05-0377

Date: Thu, 14 Apr 2005 13:46:51 -0400

From: Cyndi Karoly <cyndi.karoly@ncmail.net>

To: Jeff Jurek <jeff.jurek@ncmail.net>

CC: ~~ken.averette@ncmail.net~~

Jeff - please file this project as Deemed Issued. The 30-day clock expired 3/26/05.

--

Jeff Jurek
Assistant Operations Manager
NC Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652
(919) 715-1157 *phone*
(919) 715-2219 *fax*
jeff.jurek@ncmail.net

