

**Modlin Property Wetland Mitigation Project
Martin County, NC**

**2008 Annual Monitoring Report
Year 2**



**NCEEP Project Number D050241
Roanoke River Basin**

Submitted to
NCDENR/Ecosystem Enhancement Program
2728 Capital Blvd.
Raleigh, NC 27604

Date: December, 2008

Monitoring:
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Fairfield, NC 27826



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Executive Summary

The Modlin Property Wetland Mitigation Site is a riverine wetland project located on Poplar Chapel Road near Jamesville, in Martin County, North Carolina. It was constructed by Albemarle Restorations, LLC, under contract with EEP to provide compensatory wetland mitigation credits in the Roanoke River Basin. Construction activities, in accordance with the approved restoration plan, began October 13, 2006, and were completed on March 12, 2007. Tree and shrub planting on the project site occurred between April 1st and 4th, 2007. An emergent wetland seed mixture was sown at the end of April, 2007. The planting plan produced three distinct plant communities. The lowest, wettest zone which surrounds the drainage course is an emergent wetland community dominated by hydrophytic herbaceous species. The next step up in the flood plain is a shrub/scrub zone planted with woody shrubs and trees. The highest and largest community is a forested wetland ecosystem consisting of both trees and woody shrubs. All planting was done in accordance with the approved restoration plan.

Four water level monitoring gauges were installed on April 23, 2007 at varying elevations throughout the site to measure subsurface water elevations. Three additional backup gauges were installed in September of 2007, two onsite and one offsite. The three backup gauges were installed upon recommendations of EEP personnel in case of failure of one of the primary gauges. This year, two of the six onsite gauges met the hydrologic success criterion of maintained groundwater levels within 12 inches of the soil surface for 21 consecutive days during the growing season. Of the gauges that were not successful, gauges 3 and 6 experienced hydroperiods of 27 and 37 days respectively, but each was interrupted by short periods where the water level briefly fell below the -12" required level for success. Gauge 4 experienced a 16-day hydroperiod in April. The average number of days when groundwater was at -12" or higher across the site increased from 10 days in 2007 to 79 days in 2008, evidence that the soils are regaining wetland functions. Though there were few occasions of heavy rainfall, groundwater levels responded rapidly to precipitation but due to infrequency, the levels were not sustained long enough to give complete hydrology success. Evidence of active water and debris movement in and around the drainage course was observed during a site inspection in September of 2008.

Four vegetative monitoring plots were installed and permanently monumented, one coincident with each of the original monitoring gauges, such that both forested and shrub/scrub vegetative communities are represented. Each plot is a 10m X 10m square, as recommended by the CVS-EEP Protocol for recording vegetation sampling. After poor survival in 2007, the site received both replacement and supplemental planting in the winter of 2008. All four plots met the year 3 success criterion of 320 living planted stems per acre, a success rate of 100%.

Table ES-1 shows the levels of success attained by each of the water level monitoring gauges and the vegetation plots since monitoring began. Success criterion for the vegetation plots is the year 3 level of survival.

Table ES-1. Project Success Summary												
	Gauge						Percent Success	Vegetation Plot				Percent Success
	1	2	3	4	5	6		1	2	3	4	
Year 1 (2007) Success	N	N	N	N	N	N	0%	Y	N	N	N	25%
Year 2 (2008) Success	N	Y	N	N	Y	N	33%	Y	Y	Y	Y	100%

I. Project Background

1.0 Project Objectives

The goal of the Modlin Property Mitigation Project was to create a riverine wetland system typically found in the middle to upper reaches of first or zero order tributary systems. The project is to serve as compensation for wetland loss in the Roanoke River Basin. The mitigation plan was developed and implemented to eliminate pattern drainage and restore topography and hydrology that more closely resembled that of similar undisturbed land. Construction resulted in the development of a broad, frequently flooded swamp run following the historical path as evidenced by aerial photographs and signature topography. Subsequent planting was designed to restore a wetland forest ecosystem that is typically found in the immediate area characteristic of similar soils, topography and hydrology.

The specific project goals and objectives include:

- 1) Provide floodflow attenuation.
- 2) Water quality improvement through sediment, toxicant, and nutrient retention and reduction .
- 3) Slow over bank flow rates and provide storage and desynchronization of flood waters.
- 4) Alleviate downstream flooding issues by lessening the effect of pulse or flashy flows.
- 5) Provide shading through forest cover to reduce algae growth and associated low dissolved oxygen levels in surface water moving through the site.
- 6) The production and export of food sources.
- 7) The creation of wildlife habitat and recreational opportunities.

2.0 Project Structure, Restoration Type, and Approach

Table I lists the estimated wetland acreage to be restored on the Modlin Property. The mitigation plan provides for the restoration of 40.0 acres of riverine wetlands. Prior to construction, the 40.0 acre easement area was used entirely for row crop agriculture, primarily soy beans and cotton. A drainage ditch, built in the 1970's, divided the project area and provided drainage of the seasonally high water table to allow the agricultural uses. Construction activities, in accordance with the approved restoration plan, began in October, 2006 with the removal of existing hedgerows from within the project area. Some of the whole trees found in the hedgerows were placed along the length of the restored swamp run to facilitate water retention

and to provide wildlife habitat. Also included as part of the water retention strategy is a low berm, approximately three quarters of the way down the swamp run that functions like a natural ridge within a swamp by creating a “pinch-point”, which helps create back-flooding across the restored floodplain. In its entirety, the project functions as a broad hardwood flat that is subject to seasonal periodic flooding. The lower end of the swamp run retains water for longer periods which contributes to the vegetation diversity, as does the increase in site elevation moving laterally away from the run. Other topographical features include vernal pools that remain flooded or wet for most of the year.

Table I. Project Restoration Components				
Modlin Property Wetland Mitigation Site/EEP #D050241				
Restoration Type	Pre-Existing Acreage	Post Construction Acreage	Credit Ratio WMU	Wetland Mitigation Units
Riverine Wetland	0.0	40.0	1:1	40.0
			Total	40.0

3.0 Location and Setting

The Modlin Property Mitigation Site is located in Martin County, approximately 4.5 miles southeast of Jamesville, NC on Poplar Chapel Road. The easement area is situated in the middle of the Modlin property, also known locally as the Cooper Swamp Farm and lies along the mid and upper reaches of an unnamed tributary to Cooper Swamp. Downstream from this site, the tributary flows almost exclusively through wooded areas containing extensive wetland communities before emptying into the main run of Cooper Swamp. The surrounding area is primarily forest and agricultural land with residential properties as a minor component.

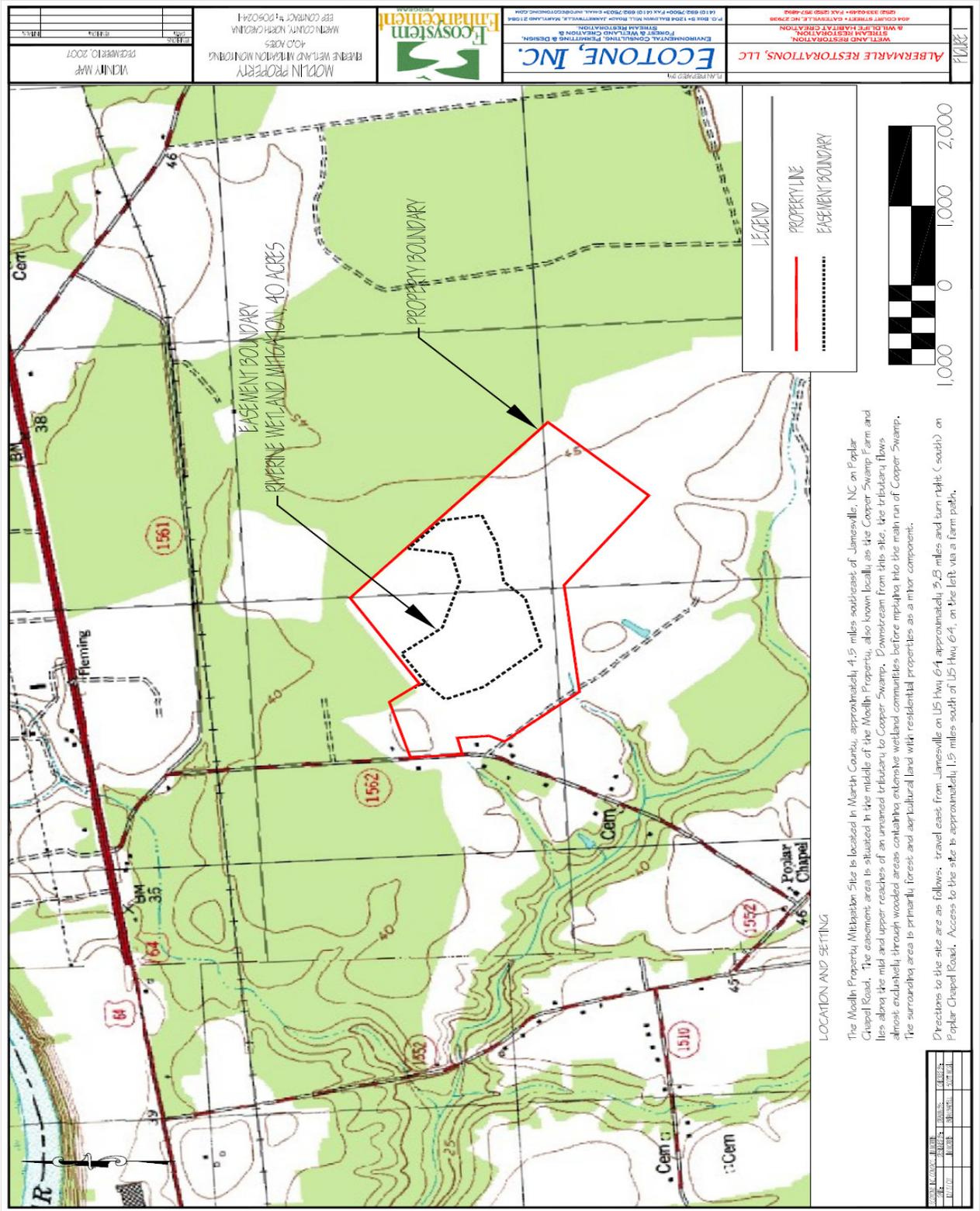
Figure 1 is a location map for the project site. Directions to the site are as follows: travel east from Jamesville on US Hwy 64 approximately 3.8 miles and turn right (south) on Poplar Chapel Rd. Access to the site is approximately 1.5 miles south of US Hwy 64, on the left via a farm path.

4.0 Project History and Background

Table II provides the history of data collection and actual completion of various milestones of the Modlin Property Wetland Mitigation Site.

**Table II. Project Activity and Reporting History
Modlin Property Wetland Mitigation Project/EEP D050241**

Activity or Report	Data Collection Complete	Actual Completion or Delivery
Restoration Plan	Feb. 2006	June 2006
Final Design -90%	Feb. 2006	June 2006
Construction	N/A	March 2007
Temporary S & E mix applied to entire project area	N/A	April 2007
Permanent seed mix applied to entire project area	N/A	April 2007
Containerized and Bare Root Planting	N/A	April 2007
Mitigation Plan/As-built (Year 1 monitoring - baseline)	Oct. 2007	December 2007
Year 2 monitoring	September 2007	December 2007
Year 3 monitoring		
Year 4 monitoring		
Year 5 monitoring		



Points of contact for the various phases of the MPWMS are provided in Table III.

Table III. Project Contacts Modlin Property Wetland Mitigation Site/EEP #D050241	
Designer Primary Project design POC	Ecotone, Inc. 1204 Baldwin Mill Road Jarrettsville, MD 21804 Scott McGill (410-692-7500)
Construction Contractor Construction contractor POC	Armstrong, Inc. P. O. Box 96 25852 US Hwy 64 Pantego, NC 27860 Tink Armstrong (252-943-2082)
Planting Contractor Planting contractor POC	Williams Forestry Service, Inc. P. O. Box 189 Millville, PA 17846 Christian Duffy (570-458-0766)
Seeding Contractor Seed planting contractor POC	Carolina Silvics, Inc. 908 Indian Trail Road Edenton, NC 27932 Mary-Margaret McKinney (252-482-8491)
Seed mix sources	Earnst Conservation Seeds, LLP, Meadville, PA
Nursery stock suppliers	Williams Forestry Service, Inc., International Paper, Inc.
Monitoring Consultants Wetland and Vegetation POC	Woods, Water and Wildlife, Inc. P. O. Box 176 Fairfield, NC 27826 Ashby Brown (800-509-0190)

Project background information for the MPWMS is provided in Table IV.

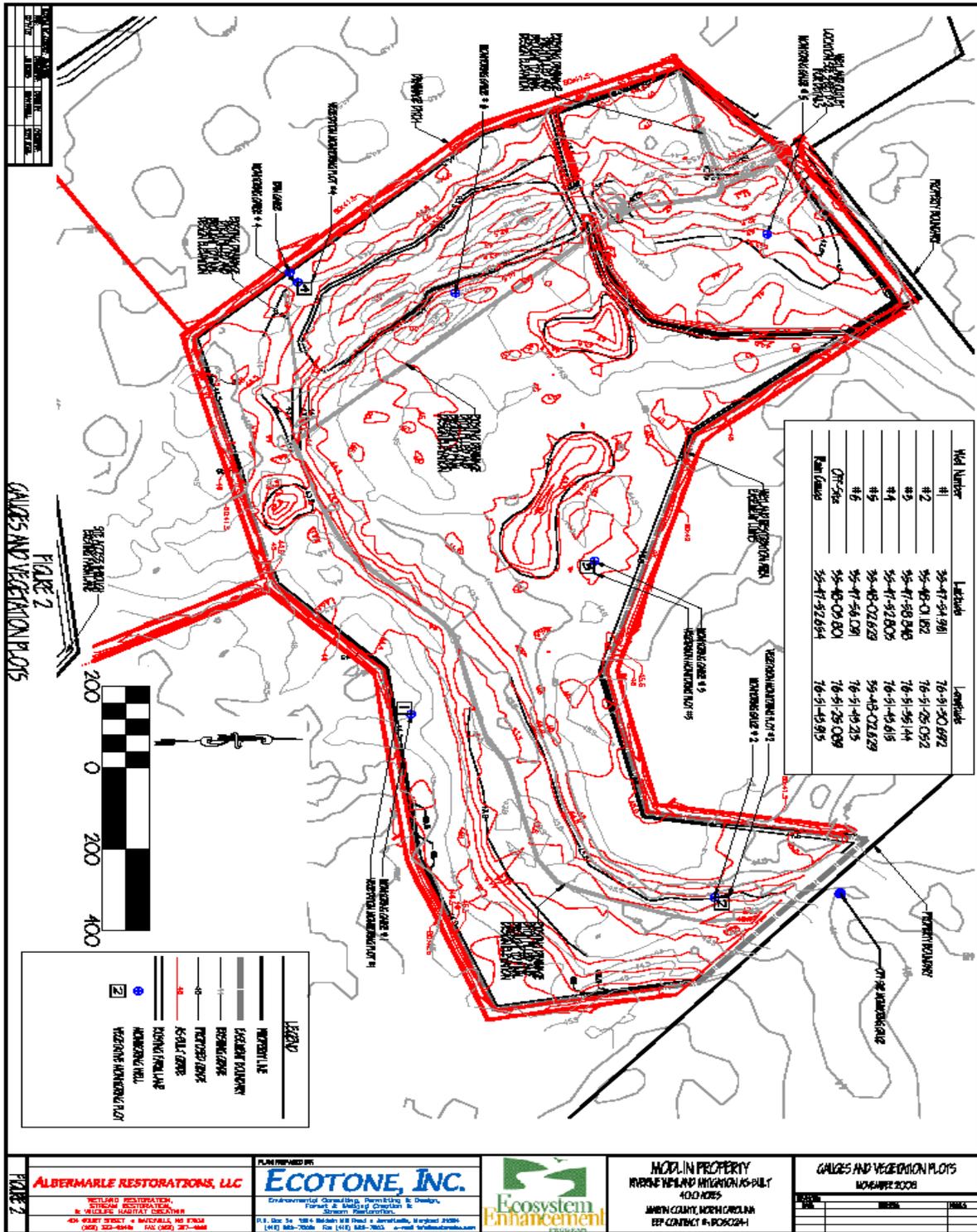
Table IV. Project Background Modlin Property Wetland Mitigation Site/EEP #D050241	
Project County	Martin County
Drainage Area	40.0 acres within easement boundary.
Drainage impervious cover estimate (%)	0
Physiographic Region	Coastal Plain
Ecoregion	8.5.1 Middle Atlantic Coastal Plain
Rosgen Classification of As-built	N/A
Cowardin Classification	PEM, PSS, PFO
Dominant Soil Types	Bethera loam, Lenoir loam
Reference site ID	Cooper Swamp, Martin County, NC
USGS HUC for Project and Reference	03010107
NCDWQ Sub-basin for Project and Reference	03-02-09
NCDWQ classification for Project and Reference	C
Any portion of any project segment 303d listed?	No
Any portion of any project segment upstream of a 303d listed segment?	No
Reasons for 303d listing or stressor?	N/A
% of project easement fenced	Gate at access path

5.0 Monitoring Plan View

There are six water level monitors installed at key locations across the property. These loggers are suspended in two-inch pvc pipe that is set approximately four feet vertically into the ground. The loggers have been located to assess the groundwater levels throughout the year at various elevations and topographies within the site. In addition, there is a rain gauge on site to capture and record onsite precipitation.

Vegetation monitoring is accomplished by resurveying the four permanent sampling plots. Each plot is referenced by a monitoring gauge which serves as the plot origin and as a photo station for that plot. The plots are ten meters square and are situated to give an accurate sample of the planted and natural woody vegetation. For each site, the data recorded matches that required of the *CVS-EEP Protocol for Recording Vegetation, v 4.0, 2006*, level 1-2.

Figures 2 and 3 provide plan views of the site showing all monitoring features including gauges, sampling plots and the rain gauge.



II. Project Condition and Monitoring Results

1.0 Vegetation Assessment

The vegetation success criterion was developed in accordance with the CVS-EEP protocol. The Modlin project was planned to include various plant communities. The Palustrine emergent (PEM) wetland zone immediately adjacent to the drainage course and other isolated depressions are populated by vegetation consisting primarily of herbaceous material, grasses, sedges and other hydrophytic plants. The photos in Appendix A show both the colonization of this area by appropriate vegetation and the frequent, almost constant ponding of surface water over much of the zone. Beyond the emergent zone is the Palustrine shrub/scrub (PSS) community consisting of a mixture of woody shrubs interspersed with trees. The emphasis in this zone is on the shorter, scrubby vegetation typical of lower areas of native branch bottoms and poorly drained, broad hardwood flats. The outer, largest Palustrine forested (PFO) zone was planted to a mixture of trees and shrubs, but with the emphasis on trees. The species mix was based on the vegetation noted at the two reference sites and all species are classified from FAC to OBL (Table V). The site was planted at a rate of 350 stems per acre in the spring of 2007. Due to poor survival attributed to the drought conditions experienced during the first growing season, replacement planting and supplemental planting took place in the winter of 2008. The species used were chosen from Table V.

Table V. Species by Community Type		
Modlin Property Wetland Mitigation Project/EEP #D050241		
Forested Wetland 18.5 Acres		
Common Name	Scientific Name	Wetland Indicator Status
Bald Cypress	Taxodium distichum	OBL
Red Maple	Acer rubrum	FACW-
Water tupelo	Nyssa aquatica	OBL
Swamp Black Gum	Nyssa biflora	FAC
Willow Oak	Quercus phellos	FACW-
Swamp White Oak	Quercus bicolor	FACW+
Water Oak	Quercus nigra	FAC
Highbush Blueberry	Vaccinium corymbosum	FACW
Swamp Cyrilla	Cyrilla racemiflora	FACW
Sweet Pepperbush	Clethra alnifolia	FACW
Virginia Sweetspire	Itea virginica	FACW+
Button Bush	Cephalanthus occidentalis	OBL
Shrub/Scrub 11.85 Acres		
Common Name	Scientific Name	Wetland Indicator Status
Button Bush	Cephalanthus occidentalis	OBL
Tag Alder	Alnus serrulata	FACW
Wax Myrtle	Myrica cerifera	FAC+
Black Willow	Salix nigra	OBL
Gallberry	Ilex glabra	FACW
Swamp Cyrilla	Cyrilla racemiflora	FACW
Highbush Blueberry	Vaccinium corymbosum	FACW
Sweetbay	Magnolia virginiana	FACW+

1.1 Vegetation Discussion and Problem Areas

All four plots met the Year 3 success criteria of a minimum of 320 stems per acre after the second growing season. Over the entire project, the survival rate averaged 607 live stems per acre. A total of 11 different species were tallied in September of 2008. Willow oak (*Q. phellos*) and Bald Cypress (*T. distichum*) showed the best survival rates.

Rainfall data for the area show the rainfall drought continues. For the period from March 1, 2008 through November 30, 2008, there was a cumulative rainfall deficit of 9.34 inches. This deficit occurred during the time of year when evapotranspiration rates were at their annual peak. The lack of rainfall continued to have a severe effect on seedling development as the stock planted in 2008 exhibited generally poor health overall. As can be seen in general site photos in Appendix A, the project area continues to support a complete and heavy ground cover of herbaceous material that may contribute to the poor survival of planted woody material through competition for scarce soil moisture in the root zone of the very upper soil horizon.

There are no obvious micro scale problem areas. Although the problem of seedling survival appears to be under control, the droughty conditions affected both the shrub/scrub and the forested communities in a broad way. The emergent zone fared the best as it was able to retain moisture for longer periods after rainfall due to drainage patterns and its lower elevation. While walking the site, some volunteer tree species were observed such as sweetgum (*L. styraciflua*), FAC+ and red maple (*A. rubrum*), FAC. There is a sufficient seed wall on two sides of the project site that should continue to supply volunteer seed.

1.2 Vegetation Monitoring Plan View (Integrated)

Figure 4 in Appendix D illustrates the dryer areas of the site where the observed herbaceous cover was much lighter. Seedling survival in these areas was good, though growth was minimal even on two-year-old stock. There was better growth on two-year-old stock, in the lower wetter areas even where the herbaceous cover is extremely dense and tall.

2.0 Wetland Assessment

The hydrologic success criterion is to achieve a minimum of 21 consecutive days where the groundwater level is within 12 inches of the soil surface during the growing season. The growing season for this site is from March 10 to November 20, a period of 255 days (WETS Table for Williamston, Martin County, NC). Success for any particular monitoring location is to show soil saturation to within 12 inches of the surface for 21 consecutive days during that period.

There are six continuous water level monitoring devices deployed across the site (Gauges 1-6) to monitor fluctuations in the water table within the project area. A rain gauge is also kept onsite and its data are compared to that collected at the NOAA cooperator site in Williamston, NC. To further gauge the affect of seasonal and annual variations in precipitation in restored wetlands, hydrologic success of the site was assessed in relation to the reference wetland site (Gauge 7).

2.1 Wetland Discussion and Problem Areas

Combined rainfall in March and April was above normal due to a single rain event in April that totaled 2.76". This one prolonged event recharged the water table, but subsequent rainfall was insufficient in both duration and frequency to maintain it. Beginning in May rainfall fell into a deficit that increased as the growing season progressed, finally totaling 9.34" for the period between March 1, and November 30, 2008. June was a particularly dry month with only 1" of onsite rainfall as opposed to the expected normal 4.55".

The wetland problem areas are generally the floodplains out beyond the drainage course. The lower areas of the emergent zone were able to retain water for longer periods, but the upper reaches of the floodplain were not due to lack of rainfall. The hydrographs in Appendix C show the how the soil moisture levels recharged quickly after rainfall but a high water table was not maintained due to insufficient frequency and duration of rainfall. Gauges 2 and 5, both of which are within the boundaries of the drainage course, achieved hydrologic success with a hydroperiod in excess of the minimum 21 consecutive days. Gauge 6 measured a hydroperiod of 18 consecutive days. The longest hydroperiods measured by gauges 3 and 4 were 15 and 16 days respectively. These hydroperiods all occurred from March to May before rainfall events became sporadic and light.

2.2 Wetland Monitoring Plan View (Integrated)

Figure 4 in Appendix D provides an overview of the site. The area shaded in yellow on the plan view indicates the driest areas during the growing season which was mostly the forest plant community. Much of the emergent zone was inundated for some time during the growing season as evidenced by the site photos in Appendix A. There was evidence of debris movement at the internal berm toward the outfall end of the project. This berm slows the movement of water offsite and appears to be functioning properly as evidenced by the deposition of woody debris at its lowest spot in the berm. In contrast, those areas higher in the flood plain remained somewhat droughty for most of the summer and fall.

Gauge	Hydrology Success Met	Hydrology Mean	Vegetation Plot	Vegetation Success Met	Vegetation Mean
1	N	33%	1	Y	100%
2	Y		2	Y	
3	N		3	Y	
4	N		4	Y	
5	Y		N/A	N/A	
6	N		N/A	N/A	
7 (Ref)	Y*		N/A	N/A	

*Gauge 7 is on the reference site

3.0 Project Success Discussion

In the time since the Modlin site was restored, the Jamesville area has been almost continuously classified as being in a moderate to severe rainfall drought according to the United States Drought Monitor. Because of the drought conditions, the groundwater table has been below normal, thereby hindering normal wetland hydrology from becoming established on the site. But the data suggest likely success in the event of normal precipitation. The success criterion for hydrology is based on 8% of the growing season (21 out of 255 days). Two of the groundwater monitoring gauges (#2 and #5) did meet the success criterion and three others met the USACE minimum wetland hydroperiod of 5%. Gauge 3 measured a 15-day hydroperiod in April, 2008 (5.9%), Gauge 4 measured a 16-day hydroperiod in April, 2008 (6.3%), and Gauge 6 measured an 18-day hydroperiod (7.0%). Table C-1 in Appendix C illustrates the dramatic increase from the previous year in the number of days that groundwater levels held at -12" or greater, despite the rainfall drought that only moderated by 3.9" during the growing season (compared to the 2007 growing season). Despite not meeting the 8% success criterion (21 out of 255 days), technical hydrologic success of 5% (13 out of 255 days) was met in all but one gauge (Gauge 1). The site is regaining wetland functions, showing rapid recharge of groundwater, and longer hydroperiods.

Vegetation criteria have been met for monitoring year 2, with 100% of surveyed plant material being FAC or wetter. The survival of the planted species, colonization of the site by wetland pioneer species, and the presence of herbaceous hydrophytes indicates that although wetland hydrology parameters have not been met for the year for three of the gauges, the data suggests wetland hydrology will be met in a year of normal precipitation.

III. Methodology Section

Year 2 monitoring for the Modlin project occurred in 2008. Monitoring and vegetation sampling procedures were established in the mitigation plan for this project and no deviations were made.

Appendix A

Vegetation Data Tables

Vegetation Photos

1. Vegetation Data Tables

Table 1. Vegetation Metadata

Report Prepared By	Ashby B. Brown
Date Prepared	10/6/2008 12:23
DESCRIPTION OF WORKSHEETS IN THIS DOCUMENT-----	
Metadata	This worksheet, which is a summary of the project and the project data.
Proj, planted	Each project is listed with its PLANTED stems, for each year. This excludes live stakes and lists stems per acre.
Proj, total stems	Each project is listed with its TOTAL stems, for each year. This includes live stakes, all planted stems, and all natural/volunteer stems. Listed in stems per acre.
Plots	List of plots surveyed.
Vigor	Frequency distribution of vigor classes.
Vigor by Spp	Frequency distribution of vigor classes listed by species.
Damage	List of most frequent damage classes with number of occurrences and percent of total stems impacted by each.
Damage by Spp	Damage values tallied by type for each species.
Damage by Plot	Damage values tallied by type for each plot.
ALL Stems by Plot and spp	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	D050241
project Name	Modlin Riverine
Description	Modlin property Riverine Wetland mitigation project, Martin county, NC
River Basin	Roanoke
Sampled Plots	4

	Species	4	3	2	1	0	Missing
	Alnus serrulata			1			
	Cyrilla racemiflora			1			
	Ilex glabra			3			
	Nyssa biflora			1			
	Quercus bicolor			5		1	1
	Quercus phellos		12	9			
	Salix nigra					1	
	Taxodium distichum		12				
	Vaccinium corymbosum		4	2			
	Magnolia virginiana		4	1			
	Acer rubrum			3			
	Unknown					1	1
	Myrica cerifera	1	1				
TOTAL:	13	1	33	26		3	2

	Species	All Damage Categories	(no damage)
	Acer rubrum	3	3
	Alnus serrulata	1	1
	Cyrilla racemiflora	1	1
	Ilex glabra	3	3
	Magnolia virginiana	5	5
	Myrica cerifera	2	2
	Nyssa biflora	1	1
	Quercus bicolor	7	7
	Quercus phellos	21	21
	Salix nigra	1	1
	Taxodium distichum	12	12
	Unknown	2	2
	Vaccinium corymbosum	6	6
TOT:	13	65	65

	plot	All Damage Categories	(no damage)
	D050241-ABET-0001-year:1	15	15
	D050241-ABET-0002-year:1	18	18
	D050241-ABET-0003-year:1	17	17
	D050241-ABET-0004-year:1	15	15
TOT:	4	65	65

Table 5. Stem Count by Plot and Species								
	Species	Total Planted Stems	# plots	avg# stems	plot D050241-ABET-0001-year:2	plot D050241-ABET-0002-year:2	plot D050241-ABET-0003-year:2	plot D050241-ABET-0004-year:2
	Acer rubrum	3	1	3	3			
	Alnus serrulata	1	1	1				1
	Cyrilla racemiflora	1	1	1				1
	Ilex glabra	3	2	1.5	2	1		
	Magnolia virginiana	5	2	2.5		3	2	
	Myrica cerifera	2	1	2				2
	Nyssa biflora	1	1	1	1			
	Quercus bicolor	5	2	2.5	4	1		
	Quercus phellos	21	4	5.25	3	2	9	7
	Taxodium distichum	12	3	4	2	7	3	
	Vaccinium corymbosum	6	3	2		1	1	4
TOT:	11	60	11		15	15	15	15
	Stems per acre				607	607	607	607

Table 6. Vegetation Problem Areas			
Feature/Issue	Plot	Probable Cause	Photo #
Herbaceous competition/Poor to moderate growth	All	Dense herbaceous cover, insufficient rainfall	VPA 1, 2 and 3

2. Vegetation Problem Area Photos

VPA 1

Indicative of lower elevations on site (Sept. 08)



VPA 2

Indicative of lower elevations on site (Sept. 08)



VPA 3
Indicative of upper, dryer elevations on site (Sept. 08)



3. Vegetation Monitoring Plot Photos

Plot 1



Plot 2



Plot 3



Plot 4



Woody debris deposited at pinch point after high water event



Early Season Flooding (April2008)



Early Season Flooding (April 2008)



Early Season Flooding (April 2008)



Early Summer (July 2008)



Early Summer July (2008)



Late Summer September (2008)



Appendix B

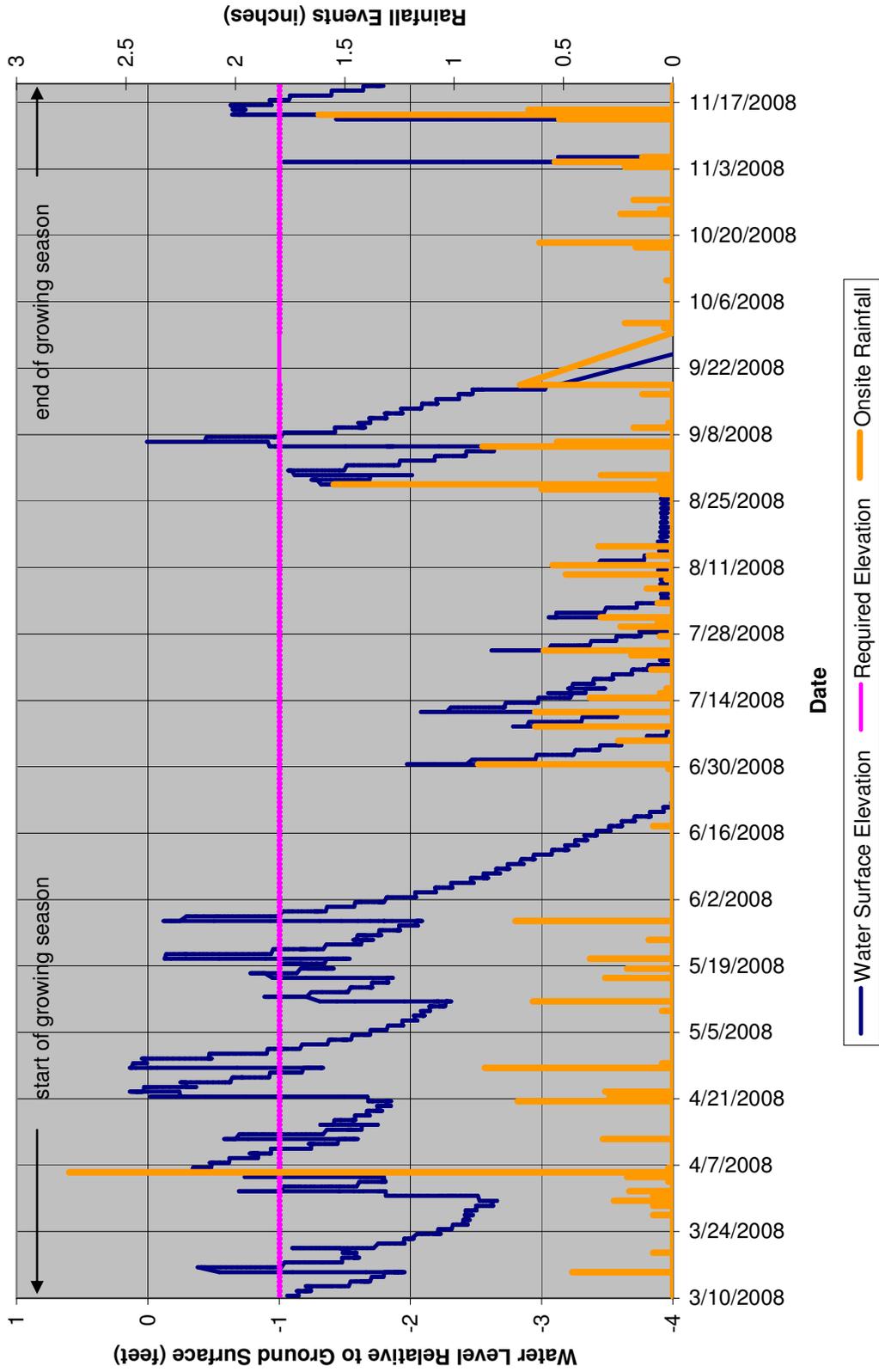
Geomorphologic Raw Data

Not used in this report

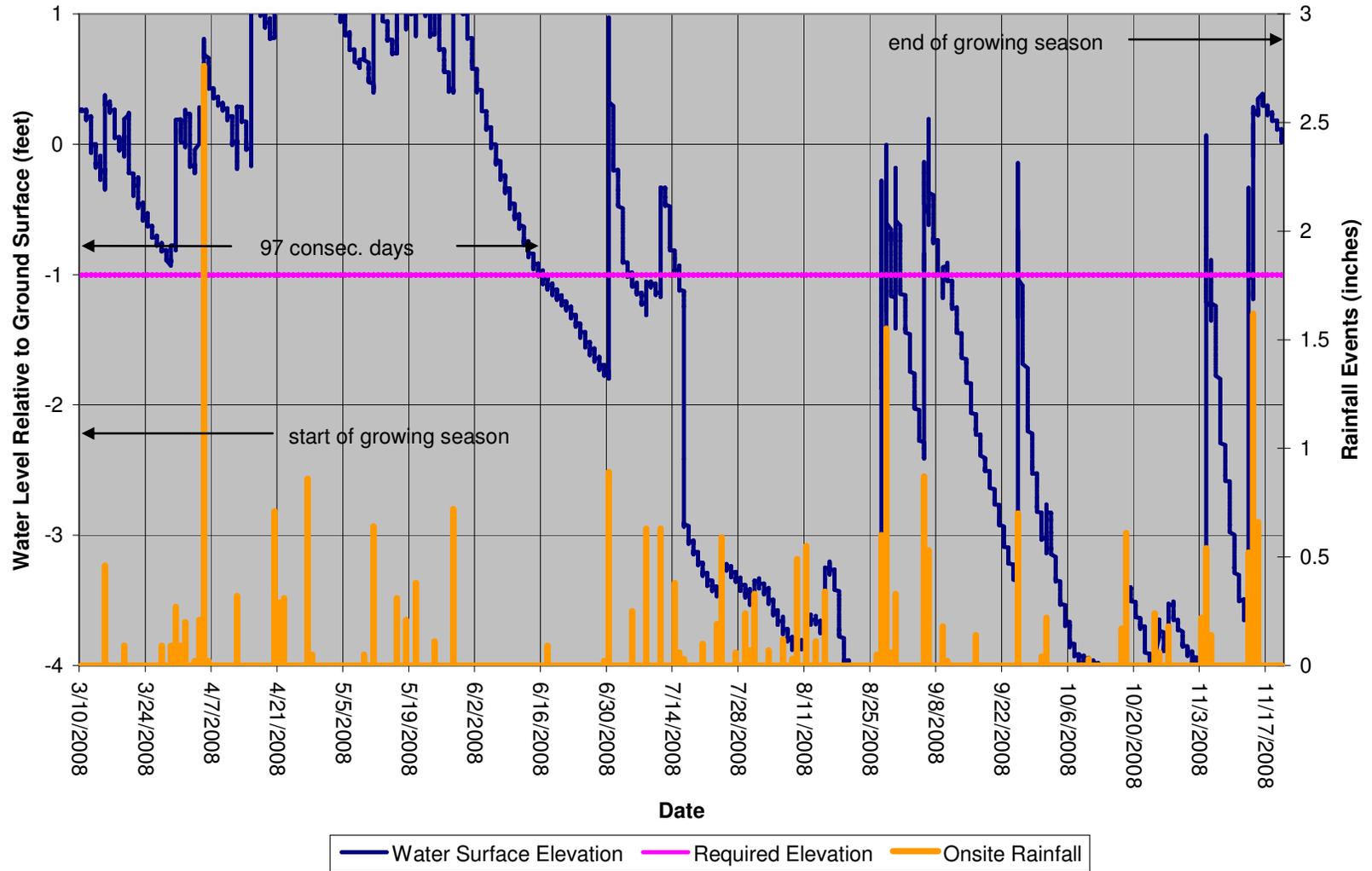
Appendix C

Hydrologic Data Tables

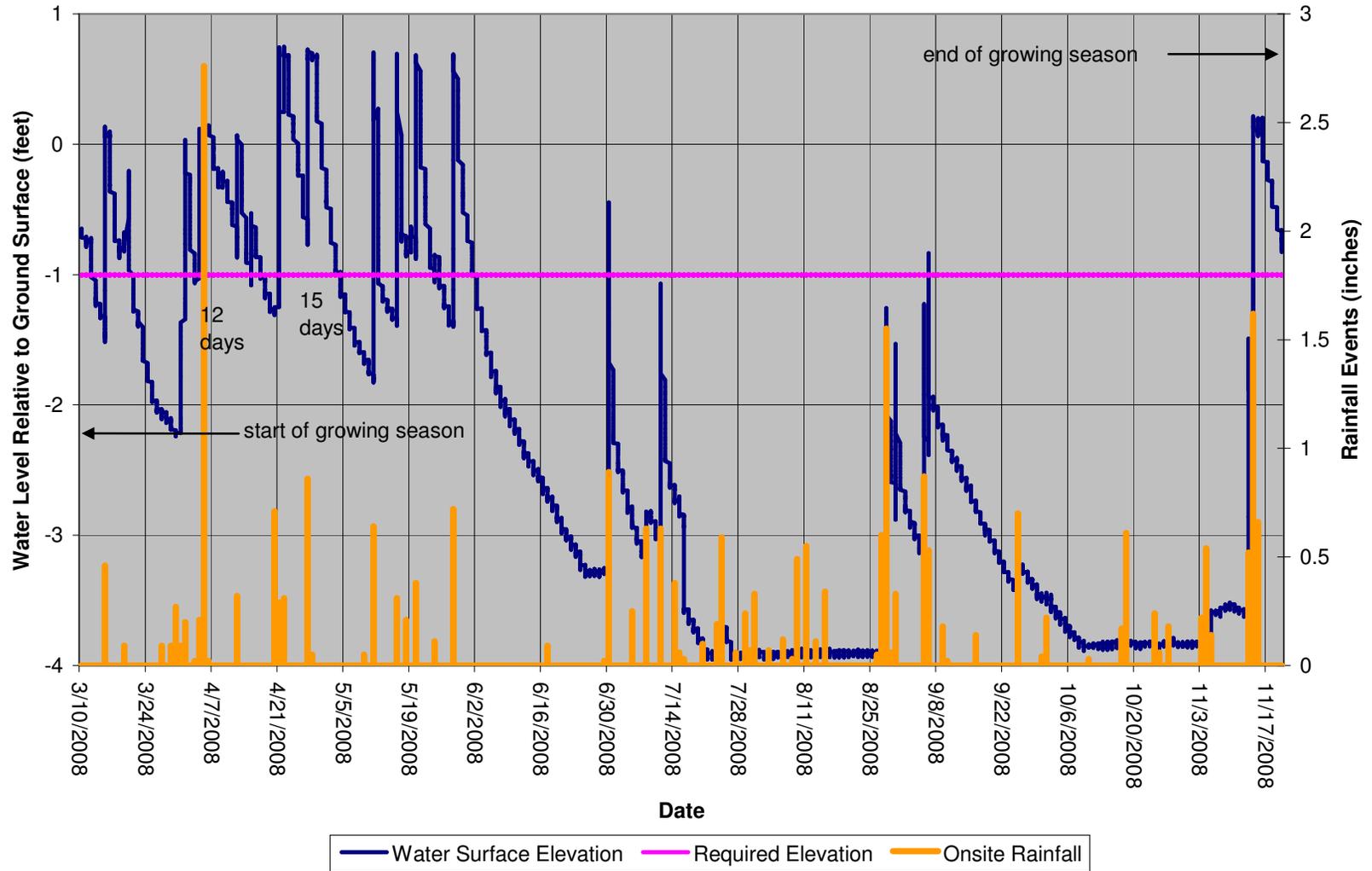
Modlin Monitoring Gauge #1 (1126654)



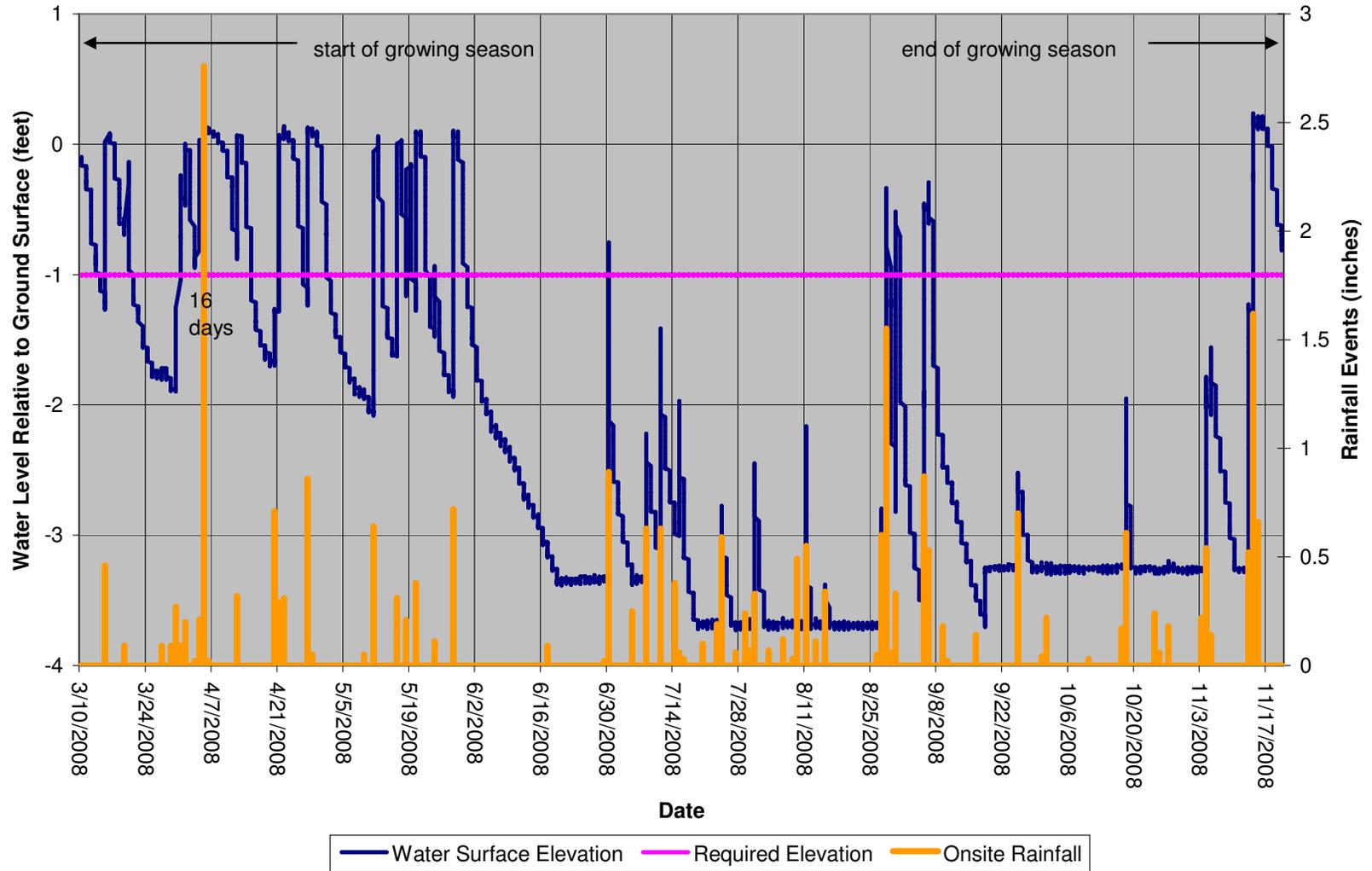
Modlin Monitoring Gauge #2 (1126653)



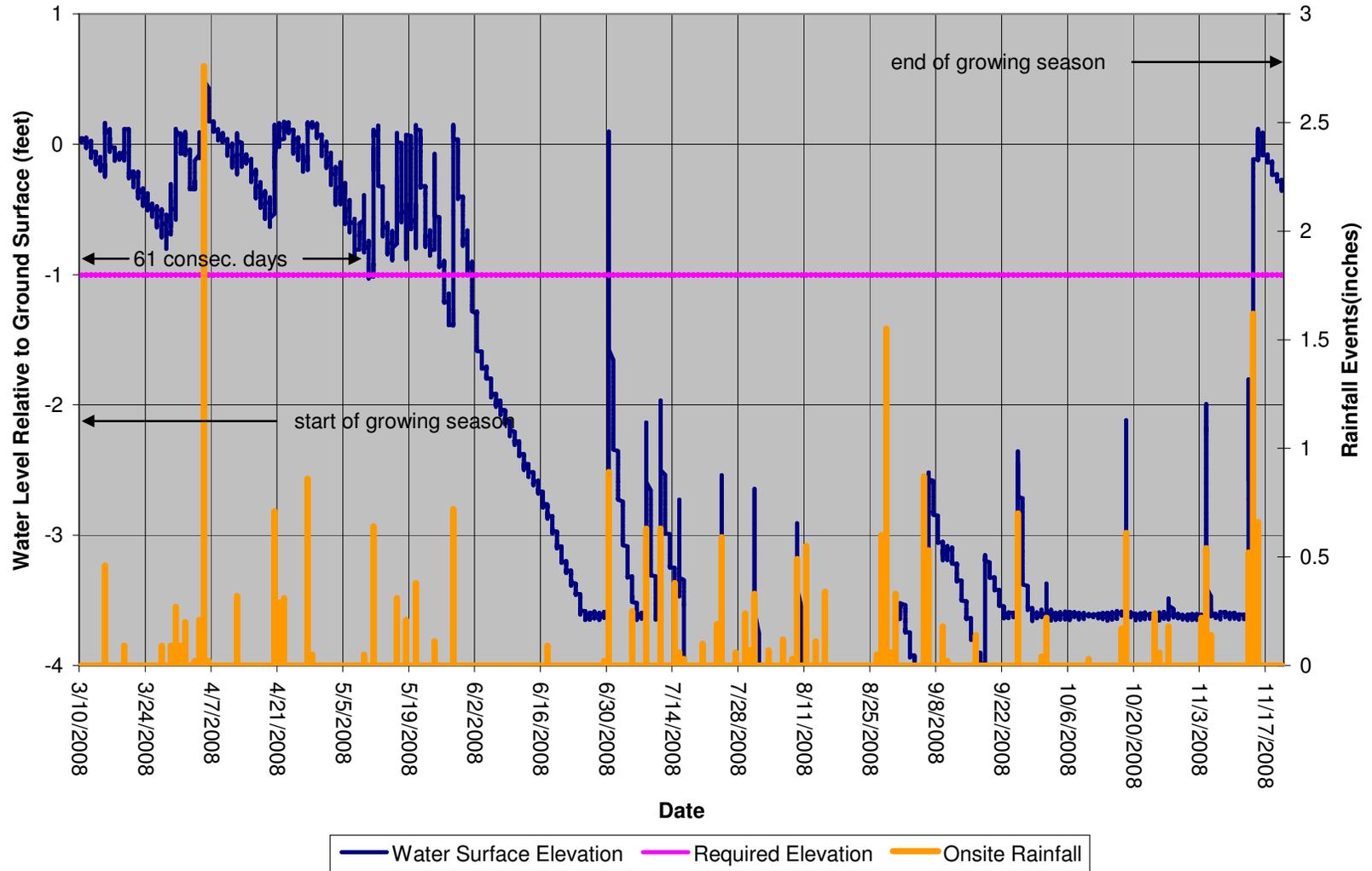
Modlin Monitoring Gauge #3 (1126651)



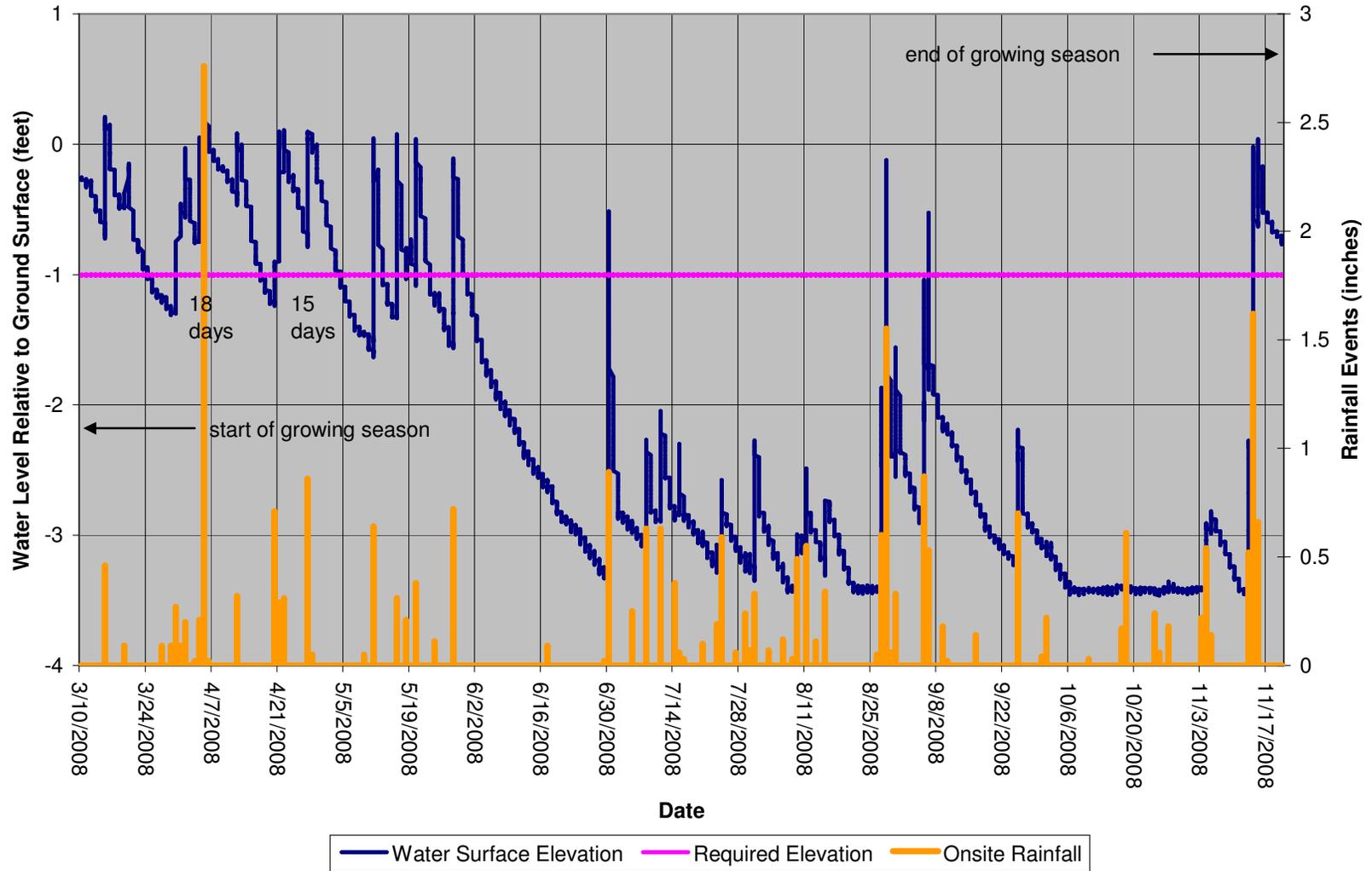
Modlin Monitoring Gauge #4 (1126650)



Modlin Monitoring Gauge #5 (1180987)



Modlin Monitoring Gauge #6 (1180994)



Modlin Monitoring Gauge #7 (1180991) Reference Site Gauge

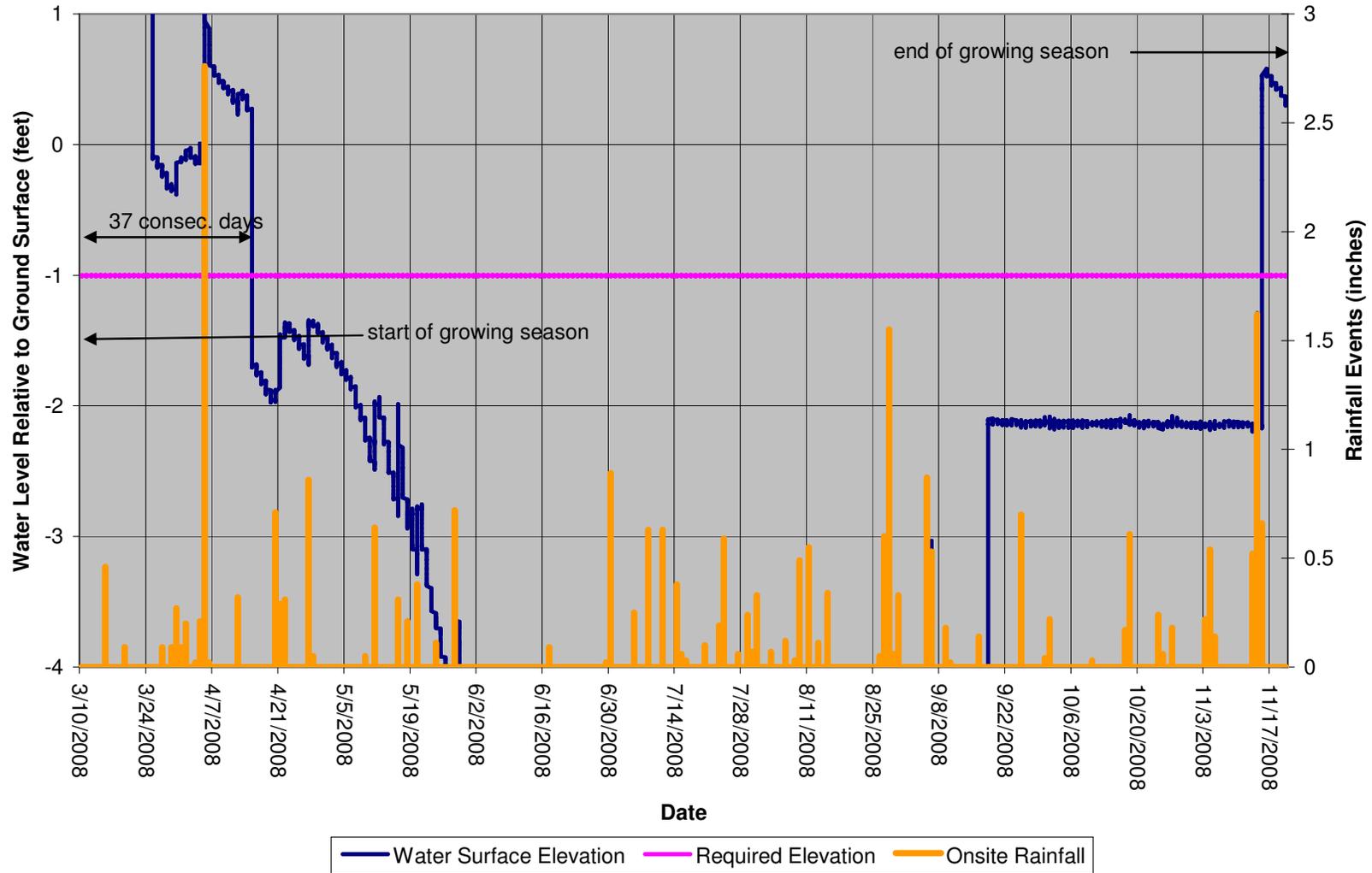
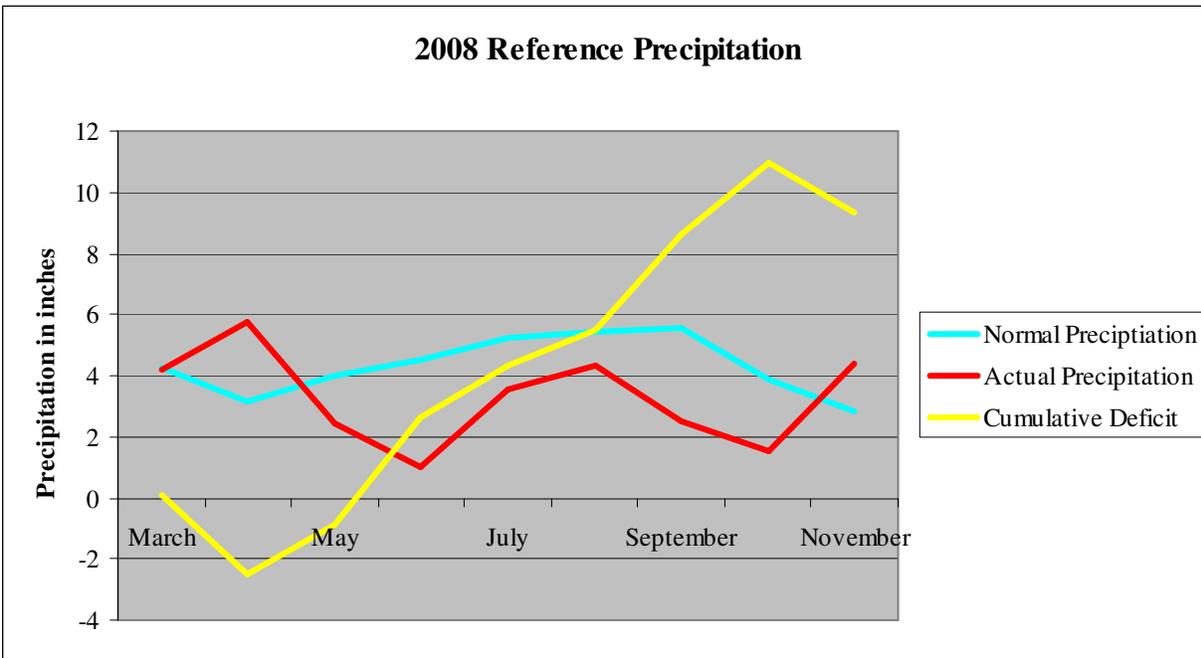
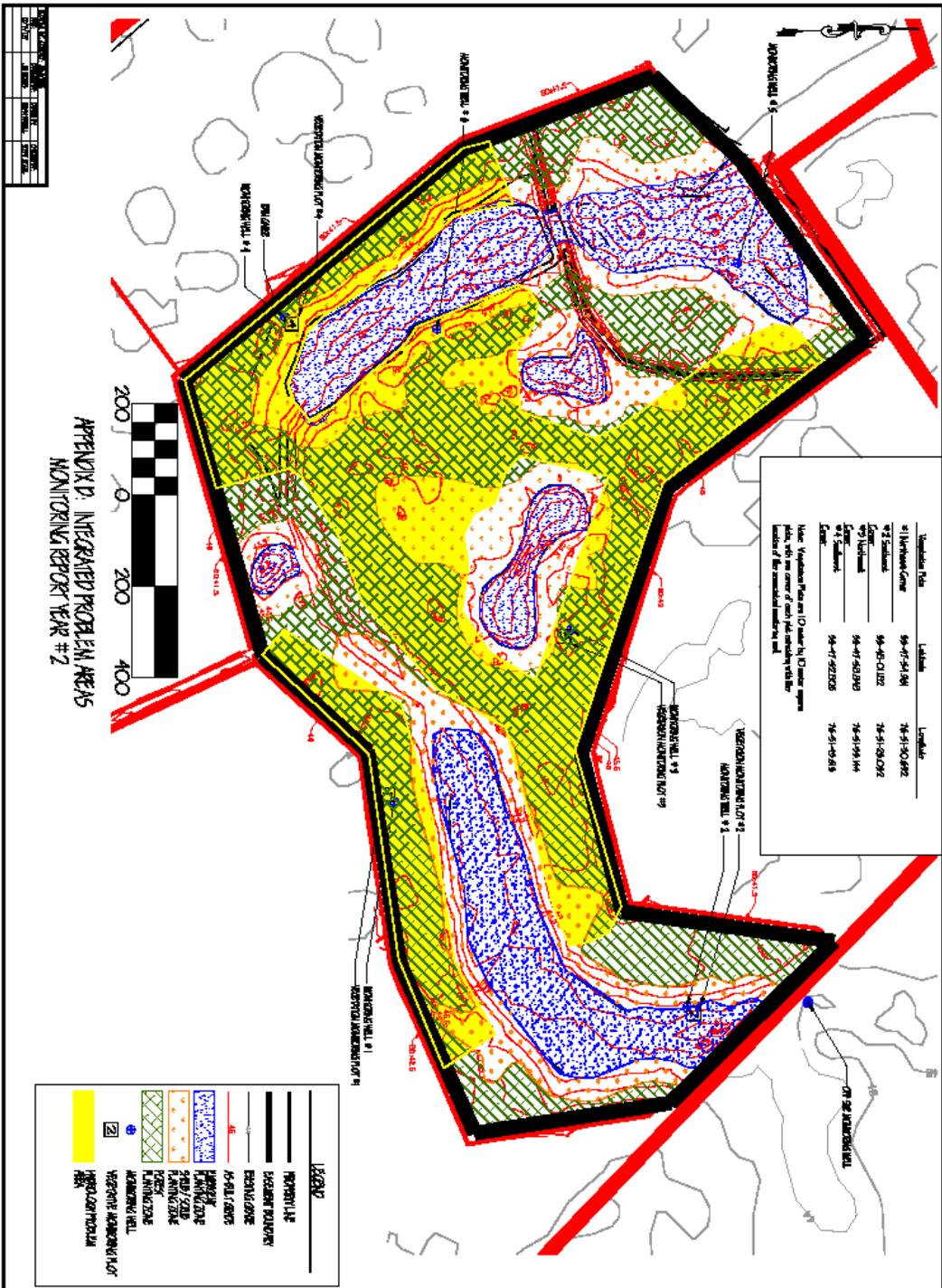


Table C-1. Hydrologic Monitoring Results				
Gauge	% of growing season water level within 12" of surface	# days during growing season water level within 12" of surface		Current Year Hydrologic Success
		Current Year	Year 1	
1	15%	37	6	No
2	52%	133	32	Yes
3	25%	65	1	No
4	26%	67	2	No
5	35%	90	n/a	Yes
6	36%	83	n/a	No
7	17%	43	n/a	Ref Gauge (Yes)
Average not incl. ref. gauge		79	10	



Appendix D

Monitoring Plan View (Integrated)



ALBERMARLE RESTORATIONS, LLC 10000 ALBERMARLE DRIVE SUITE 100 FARMINGTON, CT 06030 (860) 271-2222 FAX (860) 271-2222	ECOTONE, INC. Environmental Consulting, Remediation & Design, Project & Regulatory Compliance & Stream Rehabilitation P.O. Box 34 100 E. Main Street, Farmington, Vermont 05040 (802) 888-7000 Fax (802) 888-7005 e-mail: info@ecotone.com	MODLIN PROPERTY HYDRO-VEGETATION MONITORING 400 ACRES ANDREW COUNTY, NORTH CAROLINA REP. CONTRACT # 10080241	VEGETATION ASSESSMENT NOVEMBER 2008									
			<table border="1"> <tr> <th>DATE</th> <th>ISSUE</th> <th>STATUS</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	DATE	ISSUE	STATUS						
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