WETLAND MITIGATION SITE MONITORING REPORT-2003
FAP 310 (US 67) Mercer County

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Introduction

This report details the sixth monitoring of the wetland mitigation site created to compensate for impact to wetlands by construction on FAP 310 (US 67) in Mercer County. Details of the first five years of monitoring can be found in the five previously submitted reports (Feist et al. 1999, Feist et al. 2000, Feist et al. 2001, Feist et al. 2002, Feist et al. 2003). The site is divided into two parts, a wetland creation (Site 1) approximately 0.69 ha (1.7 ac) in size and a wetland restoration (Site 2) approximately 0.28 ha (0.7 ac) in size. Monitoring of Site 2 was completed in 2003, however, monitoring of Site 1 will continue for at least two more years. The wetland creation (Site 1) is located in the southeast quarter of the intersection of U S Route 67 and the Edwards River. The legal location is NE 1/4, SW 1/4, Section 35, T. 15 N., R. 2 W. The Illinois Department of Transportation (IDOT) completed construction of the site on 12 August 1997. Trees were planted during the fall of 1998 (T. Brooks, IDOT Wetlands Unit, memo to Allen Plocher, 10 February 1999). The sixth year of onsite monitoring was conducted on 22 September and 28 October 2004.

This report discusses the goals, objectives, and performance criteria for the mitigation project, the methods used for monitoring the site, monitoring results, and a discussion and recommendations based on the results. Methods and results are discussed by performance criteria for each goal.

Goals, Objectives, and Performance Standards

Goals, objectives, and performance standards follow those specified in the monitoring plan (T. Brooks, IDOT Wetlands Unit, 1999) and the wetland compensation plan (C. Perino, IDOT Wetlands Unit, 1996) developed for this site. Performance criteria are based on those specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and in *Guidelines for Developing Mitigation Proposals* (USACE 1993). Each goal should be attained by the end of the 5-year monitoring period. Goals, objectives, and performance criteria are listed below.

Project goal 1: The created wetland community should be a jurisdictional wetland as defined by current federal standards.

Objective: The created wetland should compensate for the loss of 0.31 ha (0.76 ac) of floodplain forest and 0.09 ha (0.23 ac) of emergent wetland at a 1.5:1 ratio.

Performance criteria:

a. Predominance of hydrophytic vegetation: More than 50% of the dominant plant species must be hydrophytic.

b. Presence of wetland hydrology: The area must be either permanently or periodically inundated at average depths less than 2 m (6.6 ft) or have soils that are saturated to the surface for at least 12.5% of the growing season.

c. Occurrence of hydric soils: Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist at the site.

Project goal 2: The created wetland plant community should meet standards for floristic composition and vegetation cover.

Objectives: A floodplain forest will be created by planting native woody species. Herbaceous vegetation will be allowed to colonize the site naturally.

Performance criteria:

a. Establishment of tree seedlings: Planted or volunteer tree seedlings should be established at each site.

b. Floristic Quality Assessment: The floristic quality index (FQI) and mean coefficient of conservatism ($\bar{c}$) for both sites should meet or exceed the FQI and $\bar{c}$ values of the filled wetlands, 7.0 and 2.0, respectively.

c. Dominance of vegetation: None of the three most dominant plant species in either site may be non-native species, cattails (*Typha* spp.), or reed canary grass (*Phalaris arundinacea*).

Project goal 3: The created wetland should function to remove sediments from the floodwaters of the Edwards River,

Objectives: The wetland creation site should retain floodwater and allow sediments to settle out of suspension.

Performance criteria:

a. Sediment removal: Sediments in the wetland should accumulate at a rate of 0.3 to 1.1 in/yr.

Methods

Project goal 1

a. Predominance of hydrophytic vegetation

The method for determining dominant vegetation at a wetland site is described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989). It is based on aerial coverage estimates for individual plant species. Each of the dominant plant species is assigned its wetland indicator status rating (Reed 1988). Any plant rated facultative or wetter, *i.e.*, FAC, FAC+, FACW, and OBL, is considered a hydrophyte. A predominance of vegetation in the wetland plant community exists if more than 50% of the dominant species present are hydrophytic.

b. Presence of wetland hydrology

Illinois State Geological Survey (ISGS) personnel installed seven ground water monitoring wells and one stage gauge at the created wetland site (Site 1) in 1999. In 2001, one RDS surface-water data logger, one stage gauge, and three very shallow (VS) soil zone wells were added. In April 2002 three soil-zone monitoring wells were added along the base of the US 67 embankment. A figure showing the locations of these sites can be found in Appendix A. Water-level data was collected monthly throughout the year and biweekly during April and May. Methods are further described in the ISGS document *Annual report for active IDOT wetland compensation and hydrologic monitoring sites: September 1, 2003 to September 1, 2004* (Fucciolo et al. 2004).

c. Occurrence of hydric soils

The soil was sampled in order to monitor hydric soil development. Soil profile morphology including horizon color, texture, and structure was described at various points throughout the site. Additionally, the presence, type, size, and abundance of redoximorphic features were noted.

Hydric soils typically develop slowly, and characteristics may not be apparent during the first several years after project construction. In the absence of hydric soil indicators at the end of the five-year monitoring period, hydrologic data could be used as corroborative evidence that conditions favorable for hydric soil formation persist at the site.

Project goal 2

a. Establishment of trees (five-foot whips)

In order to help create and restore floodplain forest, five-foot whips were planted at the mitigation site. According to the tasking order for this project (T. Brooks, IDOT Wetlands Unit, memo to Allen Plocher, 10 February 1999), the following number of trees was planted at Site 1 in the fall of 1998:

Table 1. Species planted in the wetland creation (Site 1).

Species	Common Name	Number
Acer rubrum	red maple	60
Betula nigra	river birch	60
Quercus bicolor	swamp white oak	60
Quercus palustris	pin oak	60

Survivorship and density of planted trees was determined by censusing. All live planted trees were counted. Volunteer seedlings were designated as occasional or abundant by species.

Density of live planted trees is given as the number of live planted trees/ha for each site. Survival was calculated as a percentage of the number of expected live individuals: (Total number of live planted trees/the number of known planted trees) x 100.

b. Floristic Quality Assessment

The Floristic Quality Assessment (Taft et al. 1997) was applied to the plant community at the site to evaluate floristic quality and nativity. The assessment methodology is used to identify natural areas and facilitate floristic comparisons among sites. This technique is part of the procedure for the long-term monitoring of natural areas and the monitoring of restored or created wetlands (Swink and Wilhelm 1994). The premise of the method is that each native plant species is assigned a conservatism coefficient (C) ranging from 0 to 10. Individual conservatism coefficients are ranks of species behavior and reflect the committee's (Taft et al. 1997) confidence level for a taxon's correspondence to anthropogenic disturbances. Coefficient values range from 0 to 10. Plant species assigned 0 have low affinities for natural areas, whereas those assigned 10 have very high affinities. When a complete species list is assembled for a wetland site, the overall average conservatism coefficient ($\bar{c}$) and a site floristic quality index (FQI) can be calculated. These values provide a measure of site floristic quality. Floristic quality index values (FQI values) less than 5 indicate that the area is extremely weedy or in an early successional stage (Swink and Wilhelm 1994). FQI values between 20 and 35 ($\bar{c} = 3.0$) indicate that the area has evidence of native character and can be considered a botanical asset. FQI values between 35 and 50 ($\bar{c} = 3.5$) indicate that the area has significant native character.

c. Dominance of vegetation

Plant species dominance was determined as in Project Goal 1, a. Predominance of hydrophytic vegetation. The method for determining dominant vegetation at a wetland site is described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989).

In addition, three permanent photography stations were established so that photographs could be used to document changes in plant community size and composition. The locations of the photo stations are indicated on the enclosed aerial photograph. Arrows indicate the direction in which the photos were taken.

Project goal 3

a. Sediment removal

ISGS personnel installed 12 sediment traps in the wetland creation site (Site 1) in fall 1999. Trap locations are shown in the figure in Appendix A.

Results

Project goal 1

a. Predominance of hydrophytic vegetation

Dominant plant species for the mitigation site in 2004 are shown in Table 2. At Site 1, 100% of the dominant species are rated OBL, FACW+, FAC+, or FAC and are hydrophytic.

Table 2. Dominant plant species by stratum and wetland indicator status for the wetland creation (Site 1).

Dominant Plant Species	Indicator Status	Stratum
1. *Populus deltoides*	FAC+	shrub
2. *Aster simplex*	FACW	herb
3. *Phalaris arundinacea*	FACW+	herb

b. Presence of wetland hydrology

The figure in Appendix A shows the areal extent of wetland hydrology at Site 1 in 2004. Weaver and Carr (2004) found that the total area that satisfied wetland criteria for greater than 12.5% of the growing season was 0.36 ha (0.88 ac) in 2004. Water levels measured in wells 3S, 3VS, 8VS, 9S, and 11S conclusively satisfied the wetland hydrology criteria for 12.5% of the growing season (Weaver and Carr 2004). Three separate surface-water inundation events were recorded in the wetland basin in 2004, with a total duration of approximately five days. This period of time was insufficient to satisfy the wetland hydrology criteria (Weaver and Carr 2004). For a more detailed account of the hydrology of this site, see *Edwards River/Mercer County Wetland Compensation Site, I.S.G.S. #50* (Weaver and Carr 2004).

c. Occurrence of hydric soils

Recent precipitation events allowed deeper probing of the site during this year's visit than in previous years. A soil description of a typical pedon for the majority of the site is given in Table 3. Hydric soil indicators are present at Site 1. Evidence of disturbance at the site was not as obvious this year as in years past.

Table 3. Description of the soils at the created wetland (Site 1).

Depth	Matrix Color	Concre-tions	Iron Masses	Pore linings	Iron Deplet.	Clay Deplet.	Tex-ture	Structure
1-24 inches	10YR 3/1	none	10YR 3/4	None	None	None	SiCL	Sub-Blocky

Project goal 2

a. Establishment of tree seedlings

Table 4 shows the results of the censusing of trees at Site 1 in 2004. No *Acer rubrum* were ever found at the created wetland site. Most likely, the reported number of *Acer rubrum* was never planted at the site. Therefore, I have calculated percent survival both with and without *Acer rubrum* included. Numbers in parentheses in Table 4 and the text below were calculated without *Acer rubrum* included.

Both planted tree seedlings and volunteers are becoming established the site. A total of 118 live planted trees are present for a survival rate of approximately 49.2% (65.5%) and a mean density of 171 live planted trees/ha (70 live planted trees/ac). Volunteer silver maple and cottonwood shrubs are now dominant at this site. Volunteer sandbar willow and black willow shrubs are present in thick patches along the borders of the site.

Table 4. Tree establishment at the wetland creation (Site 1) for 2004.

Species	Number planted	Number live trees	Percent survival
Acer rubrum	60	0	0.0%
Betula nigra	60	52	86.7%
Quercus bicolor	60	43	71.7%
Quercus palustris	60	23	38.3%
Total	240 (180)	118 (118)	49.2% (65.5%)

b. Floristic Quality Assessment

Two FQI values were calculated from the species lists included in Appendix B. The first FQI value is calculated from only species that became established on the site naturally; the second FQI value includes the planted tree species. The created wetland (Site 1) has an FQI value of 14.7 and a $\bar{c}$ of 2.0 when only natural vegetation is included. When the planted tree species are added, the FQI value is raised to 16.3 with a $\bar{c}$ value of 2.2. In both cases, the FQI values exceed the requirement of 7.0, and the $\bar{c}$ values are slightly higher than the required 2.0. FQI and $\bar{c}$ values have increased steadily over the past six years of monitoring.

c. Dominance of vegetation

Site 1 no longer meets the performance criterion for dominance of vegetation. As reported previously (Feist et al. 2001, Feist et al. 2002, Feist et al. 2003), the amount of *Phalaris arundinacea* (reed canary grass) at the site has steadily increased over the past five years. It is now a dominant (Table 2). As a result, the performance criterion that none of the three most dominant plant species at either site may be non-native species, cattails (*Typha* sp.), or reed canary grass (*Phalaris arundinacea*), is violated.

Photographs were taken from the permanent photography stations and are included in Appendix C of this report.

Project goal 3

a. Sediment removal

Sediment traps at Site 1 were examined by ISGS personnel in April 2004. They reported that the traps on the site accumulated between 1.1 and 3.5 cm of sediment (Weaver and Carr 2004).

Discussion

After the sixth year of monitoring, the created wetland site (Site 1) does not comply with all of the project goals, objectives, and performance standards. Although the planted trees and other hydrophytic vegetation are becoming established and hydric soil indicators were found, an exotic species (reed canary grass) has become established as a dominant and the wetland hydrology criteria have not been met in most years. The criteria for wetland hydrology were met for the entire excavated basin in 2001 (Weaver and Carr 2001) and for a portion of the basin in 2002 (26%) and 2004 (52%) (Weaver and Carr 2002). However, in 2000 and 2003 only a small area around one well (1S and 3S respectively) met the criteria (Carr and Weaver 2000, Weaver and Carr 2003), and in 1999 no portion of the site did (Miner 1999).

The problem with wetland hydrology at this site continues to be the inlet/outlet located at the northwest corner of the site. The elevation of this inlet/outlet allows the site to drain too quickly after flooding events. We concur with the recommendation of Weaver and Carr (2004) that the elevation of this inlet/outlet be raised to approximately 194.0 m (636.5 ft) so that water will be retained for a longer period in the excavated basin.

Volunteer and planted tree seedlings are becoming well established at Site 1. The survival rate for the planted trees was 65.5% and numerous cottonwoods and silver maples have colonized the site. The dominant vegetation is hydrophytic and the FQI and $\bar{c}$ values are above the required level. However, a non-native invasive, reed canary grass, is among the top three dominants. This invasive grass has the potential to take over the site and exclude other species. It may not be a problem in the future because once a dense forest canopy is established it should be shaded out, however, its progress should be monitored.

Soils have been seriously disturbed. Even so, the soils at the created wetland (Site 1) contain hydric soil indicators, and therefore can be characterized as hydric.

Literature Cited

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Appendix A

Hydrologic Information

Edwards River, Mercer County Wetland Compensation Site

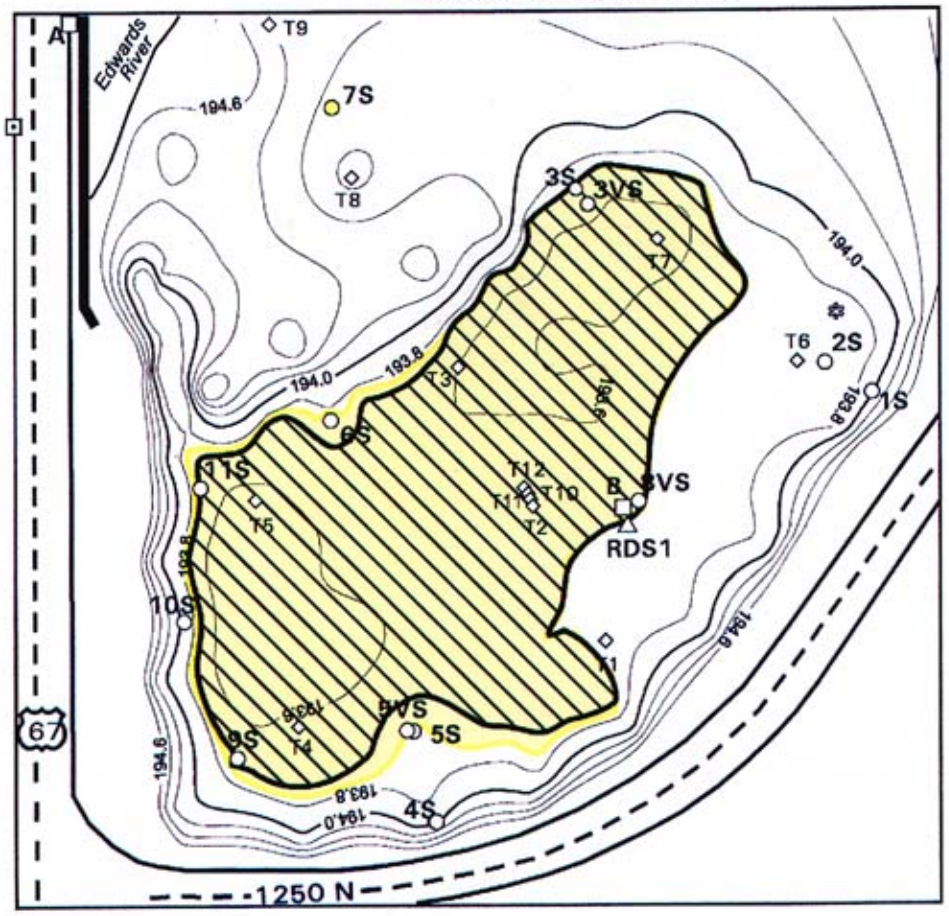
(FAP 310)

Estimated Areal Extent of 2004 Wetland Hydrology

based on data collected between September 1, 2003 and September 1, 2004

map based on 2002 ISGS elevation survey referenced to NGVD, 1929

contour interval is 0.2 meters



2004 Wetland Hydrology

> 12.5% of the growing season

> 5% of the growing season

- other soil-zone wells
- Infinities sonic data logger
- stage gauge
- RDS data logger
- rain gauge
- T6 sediment trap

0 20 m
0 60 ft

N

Appendix B

Wetland Determination Forms

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 1 of 5)

Field Investigators: Feist, Kurylo, Larimore, and Grigg
Date: 22 September and 28 October 2004 **Project Name:** FAP 310 (US 67)
Section No.: 104RS-2, (104)BR, (104-1)BR, 105RS-2
State: Illinois **County:** Mercer **Applicant:** IDOT District 4
Site Name: Wetland creation
Legal Description: NE 1/4, SW 1/4, Sec. 35, T. 15 N., R. 2 W
Location: This wetland creation site is located 38.1 m (125 ft) south of the Edwards River and 15.2 m (50 ft) east of US 67.

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Populus deltoides*	FAC+	shrub
2. *Aster simplex*	FACW	herb
3. *Phalaris arundinacea*	FACW+	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: Undetermined.

On county hydric soils list?	Yes:	No:	Undetermined: X
Is the soil a histosol?	Yes:	No: X	
Histic epipedon present?	Yes:	No: X	
Redox concentrations:	Yes: X	No:	Color: 10YR 3/4
Redox depletions:	Yes:	No: X	

Matrix color: 10YR 3/1
Other indicators: Within the floodplain of the Edwards River.

Hydric soils: Yes: X No:
Rationale: This soil has a low chroma matrix and redox concentrations. Therefore, this is a hydric soil. This soil does not have any of the current NRCS hydric soil indicators.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 2 of 5)

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Location: This wetland creation site is located 38.1 m (125 ft) south of the Edwards River and 15.2 m (50 ft) east of US 67.

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: > 0.46 m (18 in)
Overview of hydrological flow through the system: This site is hydrologically influenced by overflow from the Edwards River, by precipitation, and by runoff from surrounding higher ground. Water leaves the site primarily through an inlet/outlet at the northwest corner of the site leading into the nearby Edwards River and also via evapotranspiration and soil infiltration.
Size of Watershed: 699 km^2 (270 mi^2)
Other field evidence observed: This site is a low area in the floodplain of a fairly large river.

Wetland hydrology: Yes: No: X
Rationale: Over six years of monitoring, no well or portion of this site met the wetland hydrology criteria for more than three out of six years. The criteria for wetland hydrology were met for the entire excavated basin in 2001 (Weaver and Carr 2001) and for a portion of the basin in 2002 (26%) and 2004 (52%) (Weaver and Carr 2002). However, in 2000 and 2003 only a small area around one well (1S and 3S respectively) met the criteria (Carr and Weaver 2000, Weaver and Carr 2003), and in 1999 no portion of the site did (Miner 1999).

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: No: X
Rationale: Although dominant hydrophytic vegetation and hydric soils are present throughout this site, wetland hydrology is not. The NWI did not code this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 3 of 5)

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SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
Abutilon theophrasti	velvet-leaf	herb	FACU-	*
Acalypha rhomboidea	three-seeded mercury	herb	FACU	0
Acer negundo	box elder	shrub, seedling	FACW-	1
Acer saccharinum	silver maple	sapling, shrub, seedling	FACW	1
Agropyron repens	quack grass	herb	FACU	*
Ambrosia artemisiifolia	common ragweed	herb	FACU	0
Ambrosia trifida	giant ragweed	herb	FAC+	0
Apocynum cannabinum	dogbane	herb	FAC	2
Asclepias incarnata	swamp milkweed	herb	OBL	4
Asclepias syriaca	common milkweed	herb	UPL	0
Aster pilosus	hairy aster	herb	FACU+	0
Aster praealtus	willow-leaved aster	herb	FACW	4
Aster simplex	panicled aster	herb	FACW	3
Bidens aristosa	swamp marigold	herb	FACW	1
Bidens cernua	nodding beggar-ticks	herb	OBL	2
Bidens connata	purplestem beggar-ticks	herb	OBL	2
Bidens frondosa	common beggar-ticks	herb	FACW	1
Calystegia sepium	American bindweed	herb	FAC	1
Carex annectens	large yellow fox sedge	herb	FACW	3
Carex frankii	sedge	herb	OBL	4
Carex vulpinoidea	fox sedge	herb	OBL	3
Cirsium vulgare	bull thistle	herb	FACU-	*
Cyperus esculentus	yellow nut-sedge	herb	FACW	0
Cyperus strigosus	straw colored flatsedge	herb	FACW	0
Echinochloa muricata	barnyard grass	herb	OBL	0
Eleocharis erythropoda	spike rush	herb	OBL	3
Elymus virginicus	Virginia wild rye	herb	FACW-	4
Eupatorium serotinum	late boneset	herb	FAC+	1
Gaura biennis	biennial gaura	herb	FACU-	2
Helianthus tuberosus	Jerusalem artichoke	herb	FAC	3
Ipomoea hederacea	ivy-leaved morning glory	herb	FAC	*
Leersia oryzoides	rice cutgrass	herb	OBL	3

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

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SPECIES LIST *continued*

Scientific name	Common name	Stratum	Wetland indicator status	C†
Lotus corniculatus	birdsfoot-trefoil	herb	FAC-	*
Lycopus virginicus	bugle weed	herb	OBL	5
Mentha arvensis villosa	field mint	herb	FACW	4
Morus alba	white mulberry	shrub, herb	FAC	*
Oxalis dillenii	yellow wood sorrel	herb	FACU	0
Phalaris arundinacea	reed canary grass	herb	FACW+	*
Physostegia virginiana	false dragonhead	herb	FACW	6
Pilea pumila	Canada clearweed	herb	FACW	3
Poa pratensis	Kentucky bluegrass	herb	FAC-	*
Polygonum amphibium	water smartweed	herb	OBL	3
Polygonum lapathifolium	curly top lady's thumb	herb	FACW+	0
Polygonum pensylvanicum	giant smartweed	herb	FACW+	1
Polygonum punctatum	dotted smartweed	herb	OBL	3
Polygonum scandens	climbing buckwheat	herb	FAC	2
Populus deltoides	eastern cottonwood	shrub, herb	FAC+	2
Potentilla norvegica	rough cinquefoil	herb	FAC	0
Robinia pseudoacacia	black locust	shrub	FACU-	*
Rorippa islandica	marsh yellow cress	herb	OBL	4
Rudbeckia laciniata	cut-leaf coneflower	herb	FACW+	3
Rumex altissimus	pale dock	herb	FACW-	2
Rumex crispus	curly dock	herb	FAC+	*
Salix exigua	sandbar willow	shrub	OBL	1
Salix nigra	black willow	tree, shrub	OBL	3
Scirpus atrovirens	dark green bulrush	herb	OBL	4
Sicyos angulatus	bur cucumber	vine	FACW-	3
Solidago canadensis	Canada goldenrod	herb	FACU	1
Solidago gigantea	late goldenrod	herb	FACW	3
Typha latifolia	cattail	herb	OBL	1
Urtica dioica	stinging nettle	herb	FAC+	2
Verbena hastata	blue vervain	herb	FACW+	3
Xanthium strumarium	cocklebur	herb	FAC	0

†Coefficient of Conservatism (Taft et al. 1997)
*Non-native species

$\bar{C} = \sum C/N = 107/53 = 2.0$
$FQI = \bar{C}\sqrt{N} = 107/\sqrt{53} = 14.7$

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 5 of 5)

Field Investigators: Feist, Kurylo, and Larimore
Date: 22 September and 28 October 2004 **Project Name:** FAP 310 (US 67)
Section No.: 104RS-2, (104)BR, (104-1)BR, 105RS-2
State: Illinois **County:** Mercer **Applicant:** IDOT District 4
Site Name: Wetland creation
Legal Description: NE 1/4, SW 1/4, Sec. 35, T. 15 N., R. 2 W
Location: This wetland creation site is located 38.1 m (125 ft) south of the Edwards River and 15.2 m (50 ft) east of US 67.

PLANTED TREES

Scientific name	Common name	Stratum	Wetland indicator status	C†
Quercus palustris	pin oak	tree	FACW	4
Quercus bicolor	swamp white oak	tree	FACW+	7
Betula nigra	red birch	tree	FACW	4

†Coefficient of Conservatism (Taft et al. 1997)
Non-native species
**These calculations include the complete species list above, as well as the planted trees.

$\bar{C} = \sum C/N = 122/56 = 2.2$**
$FQI = \bar{C}/\sqrt{N} = 122/\sqrt{56} = 16.3$**

Determined by: Mary Ann Feist and Rick Larimore
(vegetation and hydrology)
Jesse Kurylo and Tina Grigg
(soils and hydrology)
Illinois Natural History Survey
607 East Peabody Drive
Champaign, Illinois 61820
(217) 244-6858 (Feist)

Kelli Weaver and Keith Carr
(hydrology)
Illinois State Geological Survey
615 East Peabody Drive
Champaign, Illinois 61820

Appendix C

Photographs of Wetland Mitigation Sites

Photo-station 1. View of wetland creation (Site 1) facing northeast.

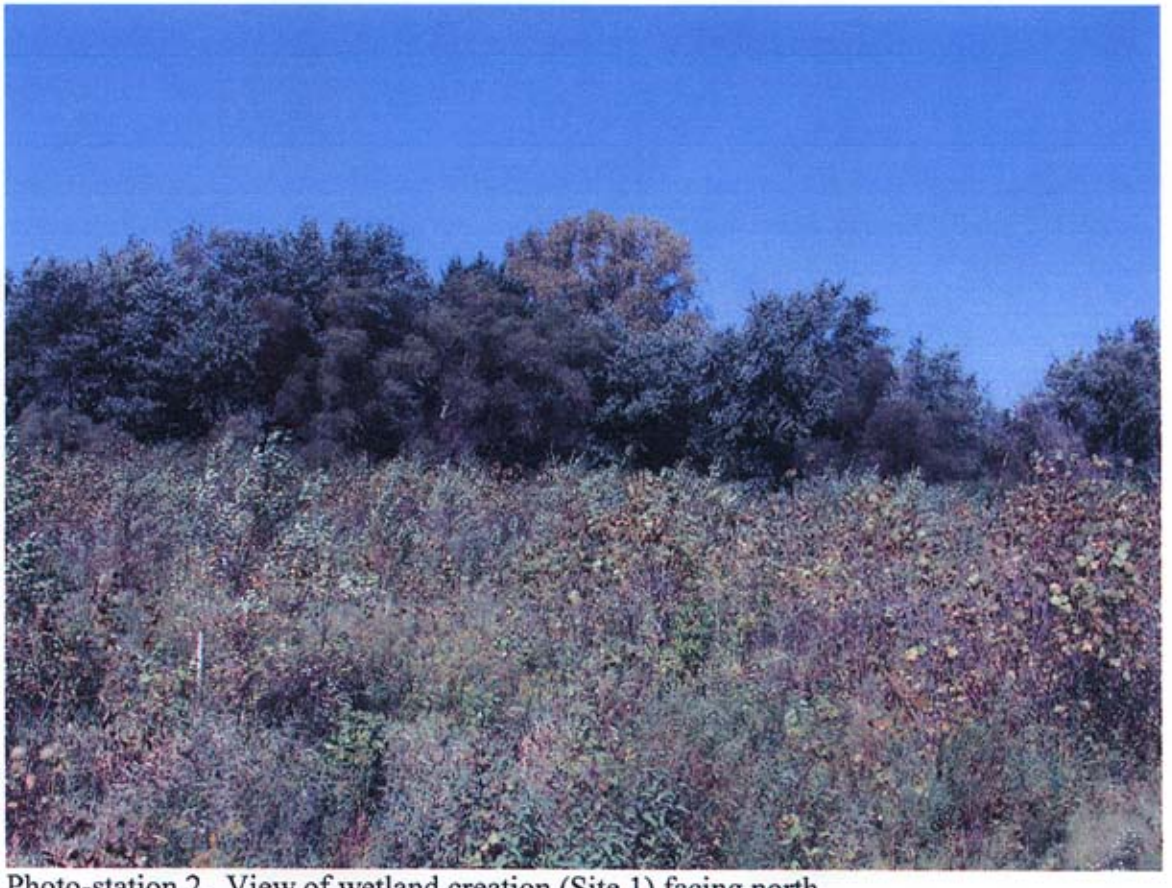
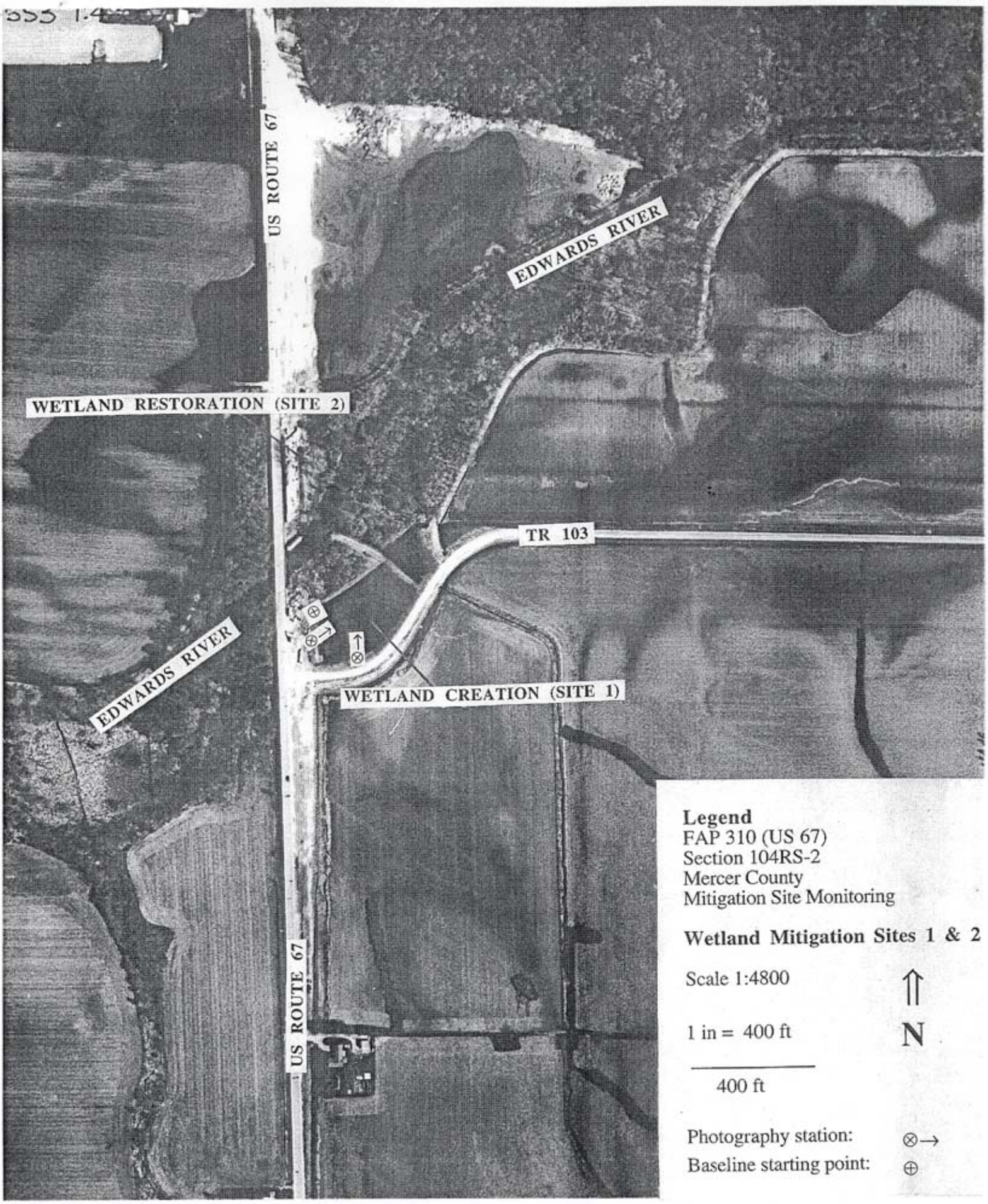


Photo-station 2. View of wetland creation (Site 1) facing north.



Legend
FAP 310 (US 67)
Section 104RS-2
Mercer County
Mitigation Site Monitoring

Wetland Mitigation Sites 1 & 2

Scale 1:4800

1 in = 400 ft

400 ft

N

Photography station: ⊗→

Baseline starting point: ⊕