

TRANSMITTAL

To: Bureau of Design and Environment
Attention: Mathew Sunderland
From: Illinois Natural History Survey
Regarding: Morris Wetland Bank Monitoring Report

Title: Morris Wetland Bank
Location: East of IL 47, north of Pine Bluff Road and south
of the Illinois River at Morris
County: Grundy
Job Number: P-93-010-98
Sequence Number: 1306
Contract Number: 66069
IDOT District: 3

Surveys Conducted By: Brian Wilm, Scott Wiesbrook, Brad Zercher, Paul Marcum,
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Dates Conducted: 27-28 September and 4-5 October, 2007

Project Summary:

In 2007, the fourth year of monitoring at the Morris Wetland Bank in Grundy County was conducted. Eleven planned wetland sites (A-K) were evaluated for planted tree survival, jurisdictional wetland criteria, and quality of vegetation. The attached report includes an explanation of the monitoring methods and results, as well as a discussion of progress towards attaining project goals. Photographs of the planned wetlands and aerial photographs/figures of the site are included.

Signed: _____
Dr. Allen E. Plocher
INHS/IDOT Project Coordinator

Signed: _____
Dr. Edward Heske
INHS/IDOT Project Principal Investigator

Date: _____

Date: _____

WETLAND MITIGATION SITE MONITORING REPORT-2007 MORRIS WETLAND BANK

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Introduction

This report details the fourth year of monitoring of the Morris Wetland Bank in Grundy County, Illinois. The Morris Wetland Bank is located near Morris, Illinois and is immediately east of IL Route 47 and south of the Illinois River (Appendix 1). More information about the site can be found in the Wetland Bank Prospectus: Morris Site prepared by IDOT (Brooks 2000).

As of 17 May 2004, a total of 7630 trees had been planted on 109 acres of ground slated for wetland restoration at the Morris Wetland Bank in Grundy County, Illinois (IDOT Memo from Michael L. Hine dated 21 May 2004). These trees were planted in 11 different planned wetlands (labeled A through K in Appendix 1). The first year of monitoring was conducted on 27-28 July and 20 September 2004. INHS personnel counted all live planted trees and performed wetland determinations at each site. In September 2004, 1096 additional trees were planted in order to replace trees that did not survive the first year. The second year of monitoring was conducted on 5-6 July and 27 September 2005. The third year of monitoring was conducted on 26-27 July 2006. Monitoring for 2007 was conducted 27-28 September and 4-5 October.

The following sources were examined while surveying the project area to determine wetland locations and boundaries: United States Geological Survey topographic maps and National Wetland Inventory (NWI) maps (Morris 7.5 minute quadrangle); *Soil Survey of Grundy County, Illinois*; aerial photographs; *National List of Plant Species that Occur in Wetlands: Illinois*; and the 1987 *Corps of Engineers Wetlands Delineation Manual*. These materials were used during an onsite evaluation of vegetation, soils, and hydrology. Results of these determinations are described in detail on the forms in Appendix 2. The boundaries of the sites determined to be wetlands were recorded using a Trimble Global Positioning System. The locations of wetland sites were overlaid on digital orthoquads (DOQs) using Arcview 3.2. A printout of this is included in Appendix 1.

This report discusses the goals, objectives, and performance criteria for the wetland bank, 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 Wetland Bank Prospectus (Brooks 2000) 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: The goal of this wetland restoration project is to create one continuous tract of floodplain forest within the Morris Mitigation Bank. To this effect, 109 acres of wetland restoration area have been planted with native trees and shrubs in 11 different planned wetlands (A-K). Objectives and performance criteria for these planned wetlands follow.

Objective 1: Each planned wetland should be jurisdictional wetland as defined by current federal standards.

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 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.

Objective 2: Each planned wetland should meet standards for floristic composition and vegetation cover.

Performance criteria:

- a. Establishment of planted trees and shrubs: At least 80% of the planted trees and shrubs should be established and living.
- b. Native species composition: At least 90% of the plants present should be non-weedy, native species.
- c. Dominance of vegetation: None of the three most dominant plant species in any site should be non-native or weedy species, such as cattails (*Typha* spp.), sandbar willow (*Salix exigua*), or reed canary grass (*Phalaris arundinacea*).

Methods

Objective 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

Wetland hydrology was monitored by personnel from the Illinois State Geological Survey (ISGS). Wetland hydrology occurs when inundation or saturation to land surface is present for greater than 5% of the growing season (9 days at this site), where soils and vegetation parameters in the Corps of Engineers Wetland Delineation Manual are also met; if either is lacking, then inundation or saturation must be present for greater than 12.5% of the growing season (23 days at this site) to satisfy the wetland hydrology criteria (Environmental Laboratory 1987 [<http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf>]).

Inundation and saturation at the site were monitored using a combination of 40 monitoring wells and 9 stage gauges. Water levels were measured at least biweekly during April and May, and monthly during the remainder of the year. Manual readings were supplemented by two on-site dataloggers and one off-site stream gauging station. The dataloggers measure surface-water levels at regular intervals to document all hydrologic events. Additional details regarding site conditions and monitoring results for wetland hydrology in 2007 are summarized in ISGS' Annual Report for Active IDOT Wetland Compensation and Hydrologic Monitoring Sites, September 1, 2006 to September 1, 2007 (Fucciolo et al. 2007).

Twenty-five Indicator of Reduction in Soils (IRIS) tubes were also installed in four of the planned wetland areas (B, C-1, H-1 and K-1) (Matthews 2008). These tubes measure reducing conditions in the soil; reduced soil conditions are indicative of hydric soils and wetland hydrology. IRIS tubes were installed on September 26, 2006 and were removed on May 15, 2007.

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 may 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.

Objective 2

a. Establishment of planted trees and shrubs

In order to help create and restore floodplain forest, trees and shrubs were planted at each planned wetland site. According to a memo from Michael L. Hine (Engineer, IDOT Design and Environment) to John Betker (Project Manager, U.S. Army Corp of Engineers, Rock Island District) dated 21 May 2004, the following numbers of trees and shrubs (Table 1A) were planted at the planned wetland sites (A-K) on May 17 2004. In September 2004, 1096 additional trees were planted in order to replace trees that did not survive the initial planting (Matthew Sunderland, IDOT Project Manager, personal communication). The location, species, and number of the replacement trees are listed in Table 1B.

Survivorship and density of planted trees was determined by censusing. All live planted trees were counted. Survival was calculated as a percentage of the number of expected live individuals: $(\text{Total number of live planted trees} / \text{number of known planted trees}) \times 100$.

Table 1A. Number of trees and shrubs by species planted per site at the Morris Wetland Mitigation Bank, May 2004.

	A	B	C	D	E	F	G	H	I	J	K	Totals
Pin Oak	22	3	148	4	19	10	7	76	19	9	116	433
Bur Oak	50	6	339	10	39	20	17	180	55	26	258	1000
Butternut	8	2	46	3	6	4	3	30	8	3	43	156
Black Walnut	51	8	339	10	39	20	17	180	55	26	258	1003
Roughleaf Dogwood	3	1	19	1	2	1	1	7	2	1	26	64
American Hazlenut	5	1	36	1	5	1	1	22	7	3	18	100
Nannyberry	15	1	100	1	11	5	5	52	16	7	74	287
Shumards Oak	25	2	170	5	20	10	9	90	29	10	130	500
White Ash	10	1	67	2	7	4	2	38	11	6	52	200
Overcup Oak	10	1	67	2	7	3	3	38	10	5	54	200
Paw Paw	59	6	396	0	45	24	19	210	64	28	304	1155
Sycamore	59	6	396	11	46	26	20	210	64	27	304	1169
Swamp White Oak	58	7	395	11	46	23	19	211	64	27	304	1165
Indigo Bush	2	1	11	1	2	1	1	7	2	1	11	40
Gray Dogwood	8	1	56	1	6	4	2	30	9	4	42	163

Table 1B. Number of replacement trees and shrubs by species planted per site at the Morris Wetland Mitigation Bank, September 2004.

	A	B	C	D	E	F	G	H	I	J	K	Totals
Pin Oak	0	0	0	1	3	1	1	0	0	0	2	8
Bur Oak	0	0	0	0	0	2	0	5	0	0	0	7
Butternut	13	2	46	1	2	0	0	2	3	0	72	141
Black Walnut	16	3	106	3	1	10	4	125	19	7	294	588
Roughleaf Dogwood	0	0	0	0	0	0	0	0	0	0	0	0
American Hazlenut	0	0	4	0	0	0	0	0	0	0	0	4
Nannyberry	0	0	0	0	0	0	0	0	0	0	2	2
Shumards Oak	8	0	18	0	4	1	0	12	2	0	12	57
White Ash	0	0	3	0	2	1	0	6	0	0	1	13
Overcup Oak	0	0	0	0	0	0	0	0	0	0	0	0
Paw Paw	1	2	70	0	1	3	3	16	7	1	62	166
Sycamore	1	2	12	0	2	0	0	1	0	0	1	19
Swamp White Oak	2	0	5	0	6	0	0	7	0	0	15	35
Indigo Bush	0	0	0	0	0	0	0	0	0	0	0	0
Gray Dogwood	0	0	13	0	0	0	0	1	0	0	42	56

b. Native species composition

Complete species lists were made for each site in past monitoring years; however, because of the continued low quality of the plant communities present and their continued mowing, only the sites with wetland area present in 2007 (sites C, H, and K) had full plant species lists generated. These can be found in the wetland delineation forms in Appendix 2. A combined species list for all other sites is found in Appendix 4. For all species lists, non-native species are identified with an asterisk. The percent native species was calculated as number of native species divided by total number of species.

c. Dominance of vegetation

Plant species dominance was determined as in Objective 1a. 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, a photograph was taken of each planned wetland site in order to document changes in plant community size and composition.

Results

Project goal 1

a. Predominance of hydrophytic vegetation

Dominant plant species for the planned wetland sites are listed on the wetland forms in Appendix 2. In 2007, dominant hydrophytic vegetation was found in portions of sites A, C, H, and K. These are labeled A-1, C-1, H-1, and K-1 in the wetland delineation forms (Appendix 2) and in the figure in Appendix 1.

b. Presence of wetland hydrology

The figure in Appendix 3 shows the areal extent of wetland hydrology at the Morris Wetland Mitigation Bank in 2007. ISGS personnel (Fucciolo et al. 2007) found that the total area that satisfied the wetland hydrology criterion of the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual for greater than 5% of the growing season was 11.3 ha (27.9 ac); further, 6.0 ha (14.8 ac) satisfied the hydrology criterion for greater than 12.5% of the growing season. These acreages are for the entire mitigation site not just the area within the planned wetlands. Based on ISGS well data, 6.53 ha (16.13 ac) of wetland occurred within site K-1. Additional details regarding site hydrology in 2007 are summarized in ISGS' Annual Report for Active IDOT Wetland Compensation and Hydrologic Monitoring Sites, September 1, 2006 to September 1, 2007 (Fucciolo et al. 2007).

In addition to the area of wetland hydrology identified by the ISGS, field evidence suggests that two small areas of wetland hydrology are present within the lowest parts of sites C and H. Within site C, 0.33 ha (0.82 ac) possess wetland hydrology and within site H, 0.26 ha (0.63 ac).

Results from IRIS tubes indicated the presence of reduced soil conditions present at sites C-1, H-1, and K-1. These results are indicative of the presence of hydric soils and wetland hydrology.

c. Occurrence of hydric soils

Hydric soils occur over at least a portion of each planned wetland. Many of the 11 sites have very similar hydric soil areas. There are minor differences in horizon thicknesses, and also

minor variation in colors of redoximorphic features. Because these differences are minor and do not in any way change the hydric status of these soils, descriptions of typical, representative pedons located in these areas are included in Tables 2 and 3. Table 2 is a soil description of a typical pedon of hydric soil located within sites A and B. Table 3 is a soil description of a typical pedon of hydric soil located within areas C, D, E, F, G, H, I, J, and K.

Table 2. Description of the soils at planned wetlands A and B.

Depth	Matrix Color	Redox Concentrations	Redox Depletions	Texture	Structure
0-15 cm	10YR 2.5/1	None	None	Silt loam	Granular
15-66 cm+	10YR 2.5/1	10YR 4/3	None	Silt loam	Subangular blocky

Table 3. Description of the soils at planned wetlands C, D, E, F, G, H, I, J, and K.

Depth	Matrix Color	Redox Concentrations	Redox Depletions	Texture	Structure
0-33 cm	10YR 3/1	10YR 4/3	None	Silt loam	Granular
33-66+ cm	10YR 3/1	10YR 4/3 (also some 10YR 4/4 in some)	None	Silt loam	Subangular blocky

The hydric soil types present at these sites were in all cases of larger extent than was the area containing hydrophytic vegetation. We did not concern ourselves with mapping the exact extent of hydric soil area, as we were more concerned with determining whether sites were jurisdictional wetlands or not. More extensive soil mapping could be undertaken to map out the exact acreage of hydric soil, but did not seem like a valuable exercise when confronted with the small areas which possessed hydrophytic vegetation and wetland hydrology. In all cases, the areas possessing hydrophytic vegetation and wetland hydrology were underlain by hydric soil. The ISGS data collected over the past eight years makes it clear that the hydrologic regime under which much of the hydric soil at this site developed is no longer present (i.e. the hydric soils are relict features). Presence of hydric soil is not the limiting factor of the jurisdictional status for any of these sites. More information on the soils at sites A-K can be found in the wetland delineation forms in Appendix 2.

Jurisdictional Wetland Acreages

The portions of these sites which had wetland vegetation, soils, and hydrology in either 2004, 2005, 2006, or 2007 are referred to as A-1, B-1, C-1, H-1, and K-1 on the site map (Appendix 1) and in wetland delineation forms (Appendix 2). Total wetland acreage within the planned wetlands was 7.12 ha (17.58 ac) for 2007, substantially greater than in any of the previous monitoring years (Table 4). The majority of this acreage was accounted for within the “spider field” (site K). Two small areas within sites C and H were identified as wetlands, even though they were not identified as such by the ISGS. These areas were without wells, but had dominant hydrophytic vegetation and hydric soils, and occupied a low position in the landscape relative to the surrounding ground.

Table 4. Amount of wetland acreage per site at the Morris Wetland Mitigation Bank.

Site	2004		2005		2006		2007	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
A-1	1.39	0.56	0.00	0.00	0.00	0.00	0.00	0.00
B-1	0.49	0.20	0.00	0.00	0.00	0.00	0.00	0.00
C-1	0.82	0.33	0.82	0.33	0.82	0.33	0.82	0.33
H-1	0.63	0.26	0.63	0.26	0.63	0.26	0.63	0.26
K-1	4.19	1.70	4.19	1.70	2.57	1.04	16.13	6.53
Total	7.52	3.05	5.64	2.29	4.02	1.63	17.58	7.12

Project goal 2a. Establishment of planted trees and shrubs

Table 5 shows the results of the censusing of trees at sites A-K in 2007. Table 6 shows the percent survival. Overall, tree survival was 73.7%, down significantly from the 84.5% reported from 2006 (Feist et al. 2006) and well below the required 80% survival rate. Percent survival by site and by tree or shrub species is shown in bold in Table 6. Tree survival was less than 80% at six sites (D, E, F, H, J, and K). Because young tree and shrub species can be difficult to identify all species within the same genus were grouped for survivorship calculation in Table 7. All oaks, both dogwoods, and both *Juglans* (butternut and black walnut) were grouped. When grouped, the oaks and dogwoods both showed survivorship over the required 80%; the *Juglans* species were much below. Hazelnut, nannyberry, white ash, and paw paw were all also below 80% survival.

Although no pecan trees (*Carya illinoensis*) were reported to be planted at the site, 218 young planted pecan trees were counted at the site; down from the 266 counted in 2006 (Feist et al. 2006). These are included in our totals.

Table 5. Number of live trees counted by INHS personnel at sites A-K at the Morris Wetland Mitigation Bank in 2007.

	A	B	C	D	E	F	G	H	I	J	K	Totals
Pin Oak	9	2	101	5	23	5	5	40	4	1	29	224
Bur Oak	74	21	553	4	25	17	17	254	89	35	430	1519
Butternut	4	0	7	0	0	0	0	0	3	5	6	25
Black Walnut	13	4	151	1	1	3	9	40	34	8	80	344
Roughleaf Dogwood	19	4	40	1	6	2	5	39	9	1	57	183
American Hazlenut	2	0	13	1	4	0	2	13	0	0	8	43
Nannyberry	30	0	55	1	10	3	0	49	13	6	53	220
Shumards Oak	28	2	122	0	5	7	2	30	14	4	68	282
White Ash	5	0	40	2	1	2	8	19	5	1	23	106
Overcup Oak	12	1	32	1	9	2	2	14	3	3	42	121
Paw Paw	32	0	76	0	32	13	15	152	63	16	127	526
Sycamore	43	11	278	6	25	11	20	210	67	14	262	947
Swamp White Oak	70	7	363	6	12	8	2	77	27	0	104	676
Indigo Bush	8	3	62	3	2	6	3	7	4	4	35	137
Gray Dogwood	7	0	25	1	2	1	2	6	2	0	12	58
Pecan	20	2	142	5	1	6	10	5	1	0	26	218
Totals	376	57	2060	37	158	86	102	955	338	98	1362	5629

Table 6. Percent survival at sites A-K at the Morris Wetland Mitigation Bank in 2007.

	A	B	C	D	E	F	G	H	I	J	K	Totals
Pin Oak	40.9	66.7	68.2	125.0	121.1	50.0	71.4	52.6	21.1	11.1	25.0	51.7
Bur Oak	148.0	350.0	163.1	40.0	64.1	85.0	100.0	141.1	161.8	134.6	166.7	151.9
Butternut	50.0	0.0	15.2	0.0	0.0	0.0	0.0	0.0	37.5	166.7	14.0	16.0
Black Walnut	25.5	50.0	44.5	10.0	2.6	15.0	52.9	22.2	61.8	30.8	31.0	34.3
Roughleaf Dogwood	633.3	400.0	210.5	100.0	300.0	200.0	500.0	557.1	450.0	100.0	219.2	285.9
Hazelnut	40.0	0.0	36.1	100.0	80.0	0.0	200.0	59.1	0.0	0.0	44.4	43.0
Nannyberry	200.0	0.0	55.0	100.0	90.9	60.0	0.0	94.2	81.3	85.7	71.6	76.7
Shumard's Oak	112.0	100.0	71.8	0.0	25.0	70.0	22.2	33.3	48.3	40.0	52.3	56.4
White Ash	50.0	0.0	59.7	100.0	14.3	50.0	400.0	50.0	45.5	16.7	44.2	53.0
Overcup Oak	120.0	100.0	47.8	50.0	128.6	66.7	66.7	36.8	30.0	60.0	77.8	60.5
Paw Paw	54.2	0.0	19.2	NA	71.1	54.2	78.9	72.4	98.4	57.1	41.8	45.5
Sycamore	72.9	183.3	70.2	54.5	54.3	42.3	100.0	100.0	104.7	51.9	86.2	81.0
Swamp White Oak	120.7	100.0	91.9	54.5	26.1	34.8	10.5	36.5	42.2	0.0	34.2	58.0
Indigo Bush	400.0	300.0	563.6	300.0	100.0	600.0	300.0	100.0	200.0	400.0	318.2	342.5
Gray Dogwood	87.5	0.0	44.6	100.0	33.3	25.0	100.0	20.0	22.2	0.0	28.6	35.6
Pecan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Totals	97.7	121.3	79.7	58.7	52.7	55.1	81.0	69.2	81.4	53.6	68.3	73.7

Table 7. Percent survival of all oaks, dogwoods, and *Juglans* (butternut and black walnut) species combined in 2007.

	A	B	C	D	E	F	G	H	I	J	K	Totals
All oaks combined	117.0	173.7	104.6	50.0	56.5	59.1	50.9	69.7	77.4	55.8	78.1	85.6
Dogwoods combined	236.4	200.0	86.7	100.0	100.0	60.0	233.3	121.6	100.0	20.0	101.5	106.2
<i>Juglans</i> combined	28.8	40.0	41.0	7.7	2.2	12.5	45.0	19.0	58.7	44.8	28.6	31.8

b. Native species composition

Percent native species have been calculated from the species lists on the wetland delineation forms in Appendix 2 and from the comprehensive list in Appendix 4. These are given in Table 8 below; results from previous years are shown in Table 9. None of the planned wetland areas met the requirement of the performance criterion of 90% native species. All were substantially low and show virtually no possibility of meeting the requirement in the near future, particularly given the continued mowing at all sites.

Table 8. Percent native species at the Morris Wetland Mitigation Bank, 2007.

Sites	C	H	K	A, B, D, E, F, G, I, J, K Combined
Percent native species 2007	58.5	55.8	62.2	58.6

Table 9. Percent native species at the Morris Wetland Mitigation Bank, 2004-2006.

Site	A	B	C	D	E	F	G	H	I	J	K
Percent native species 2004	70.2	70.0	69.0	61.8	70.9	76.7	63.6	60.6	63.5	65.4	65.5
Percent native species 2005	69.3	53.1	55.4	55.2	52.2	54.6	48.3	62.5	59.6	58.6	62.8
Percent native species 2006	61.5	50.0	60.2	53.5	60.7	54.2	49.3	58.6	55.0	58.0	64.3

c. Dominance of vegetation

Dominant vegetation for sites A-K is listed on the wetland forms in Appendix 2. Sites that had significant portions that were both hydrophytic and non-hydrophytic in any of the past monitoring years have two lists of dominants. The three most dominant species for each site are listed in Table 10. Non-native species are in bold type and are marked with an asterisk (*), native but weedy species are in bold type. There was only one site (H-1) that did not have non-native or weedy species among the three most dominant species. Therefore only one of the sites meets this performance criterion.

Photographs of sites A-K are included in Appendix 5 of this report.

Table 10. Three most dominant species at sites A-K at the Morris Wetland Mitigation Bank in 2007.

Site	Three most dominant species
A-1	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Conyza canadensis</i>
A-2	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Conyza canadensis</i>
B-1	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Poa pratensis</i> *
B-2	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Taraxacum officinale</i> *
C-1	<i>Aster simplex</i> , <i>Elymus virginicus</i> , <i>Phalaris arundinacea</i> *
C-2	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Poa pratensis</i> *
D	<i>Bromus japonicus</i> *, <i>Phalaris arundinacea</i> *, <i>Setaria faberi</i> *
E	<i>Cirsium arvense</i> *, <i>Elymus virginicus</i> , <i>Setaria faberi</i> *
F	<i>Cirsium arvense</i> *, <i>Poa pratensis</i> *, <i>Setaria glauca</i> *
G	<i>Cirsium arvense</i> *, <i>Poa pratensis</i> *, <i>Setaria glauca</i> *
H-1	<i>Aster simplex</i> , <i>Elymus virginicus</i> , <i>Populus deltoides</i> (sh)
H-2	<i>Cirsium arvense</i> *, <i>Elymus virginicus</i> , <i>Poa pratensis</i> *
I	<i>Conyza canadensis</i> , <i>Plantago rugelii</i> , <i>Poa pratensis</i> *
J	<i>Daucus carota</i> *, <i>Poa pratensis</i> *, <i>Taraxacum officinale</i> *
K-1	<i>Aster simplex</i> , <i>Elymus virginicus</i> , <i>Poa pratensis</i> *
K-2	<i>Aster pilosus</i> , <i>Elymus virginicus</i> , <i>Poa pratensis</i> *

Discussion

Out of the 33.22 ha (109.0 acres) of planned wetland at the Morris Mitigation Bank, only 7.12 ha (17.58 acres) presently qualify as jurisdictional wetland. This was up significantly from all previous years. The largest amount of wetland area in the past was reported in 2004 at only 3.05 ha (7.52) ac. Hydrology at this site has been monitored by the ISGS for eight years now; it seems unlikely that the amount of jurisdictional wetland at the site will increase substantially in the near future without significant alterations either to hydrology.

Tree survival at all sites combined was 73.7% (of the original 7635 planted trees), down significantly from the 84.5% reported from 2006 (Feist et al. 2006) and well below the required 80% survival rate; additional trees are also likely to be lost. Therefore, it is recommended that additional replacement trees be planted at the site if the 80% tree survival rate is to be met. During the tree censusing it was noted that a significant number of the wire beaver guards surrounding the trees had been bent or dislodged by mowers or flooding. Bent or leaning beaver guards are a serious impediment to the growth and survival of these young trees. It is recommended that beaver guards be checked periodically for damage. Also, of note was damage to trees from deer browsing. Many trees, in particular the dogwoods, were significantly browsed, often with no growth at all outside of the caged beaver guards.

Planned wetland sites do not meet the requirement of 90% native species. All sites are well below the requirement and have been for all monitoring years. As long as regular mowing continues, it seems highly unlikely that the 90% native species requirement will ever be met.

Only one site (H-1) did not have non-native or weedy species among the three most dominant species. If regular mowing is halted and normal successional processes are allowed to proceed, weedy non-native species should begin to be replaced by non-weedy natives. Canada thistle (*Cirsium arvense*) is a dominant at four sites. Canada thistle is a state-listed noxious weed in Illinois and therefore should be eliminated from these sites. Also, reed canary grass (*Phalaris arundinacea*), an aggressive, invasive exotic, is dominant in two planned wetland sites. If left unchecked, reed canary grass can rapidly spread, excluding other species to the point of forming a virtual monoculture. Its control should also be addressed.

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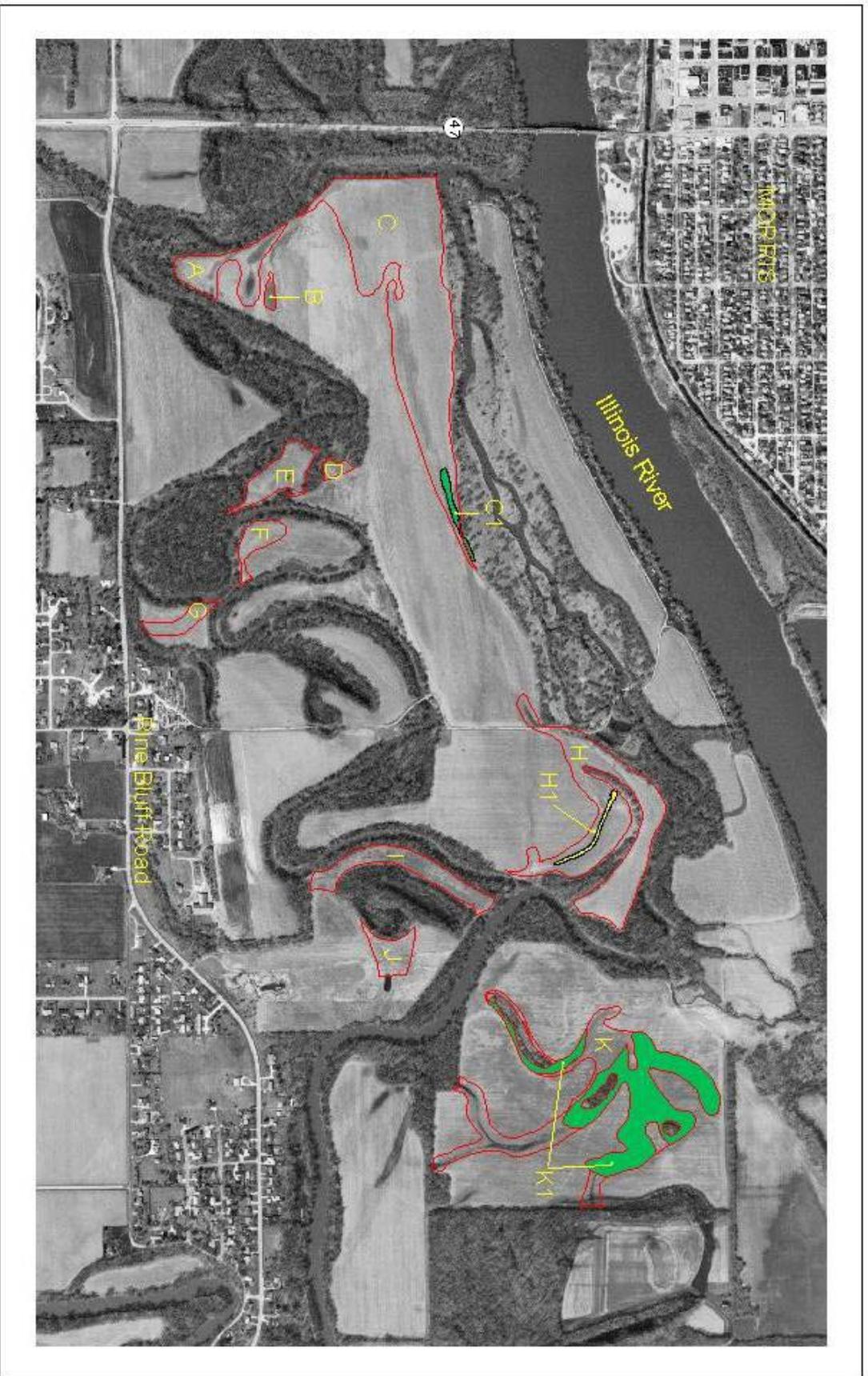
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APPENDIX 1

Locations of Planned Wetlands

Morris Mitigation Bank Site Grundy County, 2007



Welland restoration sites
Welland sites in 2007

0 600 1200 1800 2400 Feet

0 500 Meters

scale 1:14,400
1 inch=1200 ft

02/08

APPENDIX 2

Wetland Delineation Forms

ROUTINE ONSITE WETLAND DETERMINATION

Site A (page 2 of 4)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: S/2, SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland is approximately 335 m (1100 ft) east of Illinois 47 and just north of the Mazon River.

HYDROLOGY (A-1)

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: This site occupies several small depressions within the landscape. It receives water via precipitation and runoff from surrounding higher ground and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration and soil infiltration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: This site is lower in elevation than surrounding ground.

Wetland hydrology: Yes: No: X

Rationale: The ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE (A-1)

Is the site a wetland? Yes: No: X

Rationale: Although dominant hydrophytic vegetation and hydric soils are present at this site, wetland hydrology is not; therefore, this site is not a wetland. The NWI coded this entire site as upland (U).

ROUTINE ONSITE WETLAND DETERMINATION

Site A (page 4 of 4)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** S/2, SW/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland is approximately 335 m (1100 ft) east of Illinois 47 and just north of the Mazon River.**HYDROLOGY (A-2)**

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None.

Wetland hydrology: Yes: No: X**Rationale:** No evidence of wetland hydrology was found at this site. The ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).**DETERMINATION AND RATIONALE (A-2)****Is the site a wetland?** Yes: No: X**Rationale:** Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all absent; therefore, this site is not a wetland. The NWI coded this entire site as upland (U).

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site B (page 2 of 5)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** SE/4 SW/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland is approximately 396 m (1300 ft) east of Illinois 47 and 407 m (1335 ft) north of Pine Bluff Road.**HYDROLOGY (B-1)**

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: This site occupies a depression within the landscape. It receives water via precipitation and runoff from surrounding higher ground and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration and soil infiltration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: This site is lower in elevation than surrounding ground.

Wetland hydrology: Yes: No: X**Rationale:** The ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).**DETERMINATION AND RATIONALE (B-1)****Is the site a wetland?** Yes: No: X**Rationale:** Although hydric soils are present at this site, dominant hydrophytic vegetation and wetland hydrology are not; therefore, this site is not a wetland. The NWI coded this entire site as upland (U).

ROUTINE ONSITE WETLAND DETERMINATION

Site B (page 4 of 5)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SE/4 SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland is approximately 396 m (1300 ft) east of Illinois 47 and 407 m (1335 ft) north of Pine Bluff Road.

HYDROLOGY (B-2)

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE (B-2)

Is the site a wetland? Yes: No: X

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are not present; therefore, this site is not a wetland. The NWI did not identify this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site B (page 5 of 5)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** SE/4 SW/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland is approximately 396 m (1300 ft) east of Illinois 47 and 407 m (1335 ft) north of Pine Bluff Road.

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 2 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

HYDROLOGY (C-1)

Inundated: Yes: X No: Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: This site occupies a narrow depression within the landscape. It receives water via precipitation and runoff from surrounding higher ground and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration and soil infiltration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: This site is lower in elevation than surrounding ground. Water-borne sediment deposits were also observed.

Wetland hydrology: Yes: X No:

Rationale: Although, the ISGS did not report that the wetland hydrology criterion had been met for this site in 2007 (Fucciolo et al. 2007), field indicators and evidence cited above indicate that wetland hydrology is present.

DETERMINATION AND RATIONALE (C-1)

Is the site a wetland? Yes: X No:

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all present; therefore, this site is a wetland. The NWI did not identify this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 4 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

HYDROLOGY (C-2)

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE (C-2)

Is the site a wetland? Yes: No: X

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are not present; therefore, this site is not a wetland. The NWI did not identify this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 5 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Abutilon theophrasti</i>	velvet-leaf	herb	FACU-	*
<i>Acer negundo</i>	box elder	shrub, herb	FACW-	1
<i>Acer saccharinum</i>	silver maple	herb	FACW	1
<i>Agropyron repens</i>	quack grass	herb	FACU	*
<i>Agrostis alba</i>	red top	herb	FACW	0
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia artemisiifolia</i>	common ragweed	herb	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0
<i>Asclepias verticillata</i>	horsetail milkweed	herb	UPL	1
<i>Aster ontarionis</i>	Ontario aster	herb	FAC	4
<i>Aster pilosus</i>	hairy aster	herb	FACU+	0
<i>Aster simplex</i>	panicled aster	herb	FACW	3
<i>Brassica kaber</i>	charlock	herb	UPL	0
<i>Bromus commutatus</i>	hairy brome	herb	UPL	*
<i>Bromus inermis</i>	awnless brome grass	herb	UPL	*
<i>Carduus nutans</i>	musk bristle thistle	herb	UPL	*
<i>Carex</i> spp.	sedges	herb	----	--
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Carya cordiformis</i>	bitternut hickory	shrub	FAC	4
<i>Cassia marilandica</i>	Maryland senna	herb	FACW	4
<i>Celtis occidentalis</i>	hackberry	shrub, herb	FAC-	3
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Chenopodium album</i>	lamb's quarters	herb	FAC-	*
<i>Cichorium intybus</i>	chickory	herb	UPL	*
<i>Cirsium arvense</i>	Canada thistle	herb	FACU	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 6 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Cirsium discolor</i>	pasture thistle	herb	UPL	3
<i>Cirsium vulgare</i>	bull thistle	herb	FACU-	*
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Cyperus esculentus</i>	yellow nut-sedge	herb	FACW	0
<i>Dactylis glomerata</i>	orchard grass	herb	FACU	*
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*
<i>Dipsacus sylvestris</i>	common teasel	herb	UPL	*
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1
<i>Eupatorium altissimum</i>	tall boneset	herb	FACU	2
<i>Eupatorium rugosum</i>	white snakeroot	herb	FACU	2
<i>Eupatorium serotinum</i>	late boneset	herb	FAC+	1
<i>Festuca pratensis</i>	meadow fescue	herb	FACU-	*
<i>Fraxinus pennsylvanica</i>	green ash	shrub, herb	FACW	2
<i>Geum canadense</i>	white avens	herb	FAC	2
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Gleditsia triacanthos</i>	honey locust	shrub, herb	FAC	2
<i>Helianthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hordeum jubatum</i>	squirrel-tail	herb	FAC+	*
<i>Juglans nigra</i>	black walnut	shrub	FACU	4
<i>Lactuca saligna</i>	willow-leaved lettuce	herb	FACU	*
<i>Leersia virginica</i>	white grass	herb	FACW	4
<i>Lepidium virginicum</i>	common peppergrass	herb	FACU-	0
<i>Lonicera maackii</i>	Amur honeysuckle	shrub	UPL	*
<i>Lotus corniculatus</i>	birdsfoot-trefoil	herb	FAC-	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 7 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*
<i>Malus</i> sp.	crabapple	shrub	----	--
<i>Melilotus alba</i>	white sweet clover	herb	FACU	*
<i>Melilotus officinalis</i>	yellow sweet clover	herb	FACU	*
<i>Morus alba</i>	white mulberry	shrub, herb	FAC	*
<i>Muhlenbergia frondosa</i>	common satin grass	herb	FACW	3
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Phytolacca americana</i>	pokeweed	herb	FAC-	1
<i>Plantago lanceolata</i>	narrow-leaved plantain	herb	FAC	*
<i>Plantago rugelii</i>	red-stalked plantain	herb	FAC	0
<i>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*
<i>Polygonum lapathifolium</i>	curttop lady's thumb	herb	FACW+	0
<i>Polygonum persicaria</i>	spotted lady's thumb	herb	FACW	*
<i>Populus deltoides</i>	eastern cottonwood	shrub, herb	FAC+	2
<i>Potentilla norvegica</i>	rough cinquefoil	herb	FAC	0
<i>Prunella vulgaris</i>	self-heal	herb	FAC	*
<i>Ptelea trifoliata</i>	wafer ash	shrub	FACU+	4
<i>Quercus bicolor</i>	swamp white oak	shrub	FACW+	7
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rorippa sylvestris</i>	creeping yellow cress	herb	OBL	*
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*
<i>Rudbeckia laciniata</i>	cutleaf coneflower	herb	FACW+	3
<i>Rudbeckia triloba</i>	brown-eyed Susan	herb	FAC-	3
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 8 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: SW/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Sambucus canadensis</i>	common elder	shrub	FACW-	2
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Setaria verticillata</i>	bristly foxtail	herb	FAC	*
<i>Setaria viridis</i> var. <i>major</i>	tall green foxtail	herb	UPL	*
<i>Sida spinosa</i>	prickly sida	herb	FACU	*
<i>Smilax hispida</i>	bristly greenbrier	vine	FAC	3
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1
<i>Sonchus arvensis</i>	field sowthistle	herb	FAC-	*
<i>Taraxacum officinale</i>	common dandelion	herb	FACU	*
<i>Teucrium canadense</i>	American germander	herb	FACW-	3
<i>Thlaspi arvense</i>	field penny cress	herb	UPL	*
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1
<i>Tragopogon dubius</i>	goat's beard	herb	UPL	*
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*
<i>Trifolium pratense</i>	red clover	herb	FACU+	*
<i>Trifolium repens</i>	white clover	herb	FACU+	*
<i>Ulmus pumila</i>	Siberian elm	shrub, herb	UPL	*
<i>Ulmus rubra</i>	slippery elm	shrub, herb	FAC	3
<i>Urtica dioica</i>	stinging nettle	herb	FAC+	2
<i>Verbascum thapsus</i>	woolly mullein	herb	UPL	*
<i>Verbena urticifolia</i>	white vervain	herb	FAC+	3
<i>Verbesina alternifolia</i>	wingstem	herb	FACW	4
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

†Coefficient of Conservatism (Taft et al. 1997)

*Non-native species

$\bar{C} = \sum C/N = 122/64 = 1.9$

$FQI = \sum C/\sqrt{N} = 122/\sqrt{64} = 15.3$

ROUTINE ONSITE WETLAND DETERMINATION

Site C (page 9 of 9)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** SW/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland stretches from 122 m (400 ft) to 1265 m (4150 ft) east of Illinois 47 and is between 244 m (800 ft) to 1006 m (3300 ft) north of Pine Bluff Rd.

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site D (page 2 of 2)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, SE/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland occurs approximately 596 m (1955 ft) west of the gravel road which bisects the project area and 549 m (1800 ft) north of Pine Bluff Road.

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE

Is the site a wetland? Yes: No: X

Rationale: Although hydric soils are present throughout this site, dominant hydrophytic vegetation and wetland hydrology are not. Therefore, this site is not a wetland. The NWI coded this site as a seasonally flooded, emergent, palustrine wetland (PEMC).

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site E (page 3 of 3)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** NW/4, SE/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland occurs approximately 596 m (1955 ft) west of the gravel road which bisects the project area and runs from 295 to 645 m (966 to 2116 ft) north of Pine Bluff Road.**DETERMINATION AND RATIONALE****Is the site a wetland?** Yes: No: X**Rationale:** Although a portion of this site has hydric soils, wetland hydrology and hydrophytic vegetation are not present over any of this site. The NWI did not code this site as a wetland.

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site F (page 3 of 3)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** SW/4, SE/4 Sect. 10, T. 33 N., R. 7 E.**Location:** This planned wetland occupies the lower areas in the field approximately 386 m (1265 ft) west of the gravel road which bisects the project area and runs from 323 to 673 m (1058 to 2208 ft) north of Pine Bluff Road.**DETERMINATION AND RATIONALE****Is the site a wetland?** Yes: No: X

Rationale: Although a portion of this site has hydric soils, wetland hydrology and dominant hydrophytic vegetation are not present over any of this site. The NWI coded this site as a seasonally flooded, emergent, palustrine wetland (PEMC). The NRCS designated this site as a farmed wetland (FW).

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ROUTINE ONSITE WETLAND DETERMINATION

Site G (page 3 of 3)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NE/4, SE/4 Sect. 10, T. 33 N., R. 7 E.

Location: This planned wetland occupies the lower areas in the field approximately 238 m (782 ft) west of the gravel road which bisects the project area and runs from 49 to 224 m (161 to 736 ft) north of Pine Bluff Road.

DETERMINATION AND RATIONALE

Is the site a wetland? Yes: No: X

Rationale: Although a portion of this site has hydric soils, wetland hydrology and dominant hydrophytic vegetation are not present over any of this site. The NWI coded this site as a seasonally flooded, emergent, palustrine wetland (PEMC). The NRCS designated this site as a farmed wetland (FW).

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 2 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Road.

HYDROLOGY (H-1)

Inundated: Yes: X No: Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: This site occupies a shallow drainageway. It receives water via precipitation and runoff from surrounding higher ground and overflow from the Mazon River. Water leaves the site primarily via evapotranspiration, soil infiltration, and stream flow into the Mazon River.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: Wetland drainage patterns and water-borne sediment deposits were observed.

Wetland hydrology: Yes: X No:

Rationale: Although, the ISGS did not report that the wetland hydrology criterion had been met for this site in 2007 (Fucciolo et al. 2007), field indicators and evidence cited above indicate that wetland hydrology is present.

DETERMINATION AND RATIONALE (H-1)

Is the site a wetland? Yes: X No:

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all present; therefore, this site is a wetland. The NWI did not identify this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 4 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

HYDROLOGY (H-2)

Inundated: Yes: No: X

Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE (H-2)

Is the site a wetland? Yes: No: X

Rationale: Dominant hydrophytic vegetation, hydric soils, or wetland hydrology are all absent; therefore this site is not a wetland. The NWI did not code this site as a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 5 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Abutilon theophrasti</i>	velvet-leaf	herb	FACU-	*
<i>Acalypha rhomboidea</i>	three-seeded mercury	herb	FACU	0
<i>Acer negundo</i>	box elder	shrub, herb	FACW-	1
<i>Acer saccharinum</i>	silver maple	shrub, herb	FACW	1
<i>Agropyron repens</i>	quack grass	herb	FACU	*
<i>Agrostis alba</i>	red top	herb	FACW	0
<i>Alliaria petiolata</i>	garlic mustard	herb	FAC	*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia artemisiifolia</i>	common ragweed	herb	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Amorpha fruticosa</i>	false indigo bush	shrub	FACW+	6
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0
<i>Asclepias verticillata</i>	horsetail milkweed	herb	UPL	1
<i>Aster ontarionis</i>	Ontario aster	herb	FAC	4
<i>Aster pilosus</i>	hairy aster	herb	FACU+	0
<i>Aster simplex</i>	panicled aster	herb	FACW	3
<i>Atriplex patula</i>	fat-hen saltbush	herb	FACU+	*
<i>Brassica kaber</i>	charlock	herb	UPL	0
<i>Bromus commutatus</i>	hairy brome	herb	UPL	*
<i>Bromus inermis</i>	awnless brome grass	herb	UPL	*
<i>Capsella bursa-pastoris</i>	sheperd's-purse	herb	FAC-	*
<i>Carex normalis</i>	sedge	herb	FACW	4
<i>Carex</i> spp.	sedges	herb	----	--
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Chenopodium album</i>	lamb's quarters	herb	FAC-	*
<i>Cichorium intybus</i>	chickory	herb	UPL	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 6 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Cirsium arvense</i>	Canada thistle	herb	FACU	*
<i>Cirsium discolor</i>	pasture thistle	herb	UPL	3
<i>Cirsium vulgare</i>	bull thistle	herb	FACU-	*
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Cyperus esculentus</i>	yellow nut-sedge	herb	FACW	0
<i>Dactylis glomerata</i>	orchard grass	herb	FACU	*
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*
<i>Desmodium illinoense</i>	illinois tick trefoil	herb	UPL	5
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Elaeagnus umbellata</i>	autumn olive	shrub	UPL	*
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1
<i>Eupatorium altissimum</i>	tall boneset	herb	FACU	2
<i>Eupatorium rugosum</i>	white snakeroot	herb	FACU	2
<i>Eupatorium serotinum</i>	late boneset	herb	FAC+	1
<i>Festuca pratensis</i>	meadow fescue	herb	FACU-	*
<i>Geum canadense</i>	white avens	herb	FAC	2
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Glechoma hederacea</i>	ground ivy	herb	FACU	*
<i>Gleditsia triacanthos</i>	honey locust	shrub, herb	FAC	2
<i>Helianthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hordeum jubatum</i>	squirrel-tail	herb	FAC+	*
<i>Lactuca saligna</i>	willow-leaved lettuce	herb	FACU	*
<i>Laportea canadensis</i>	wood nettle	herb	FACW	2
<i>Leonurus cardiaca</i>	motherwort	herb	UPL	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 7 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Lepidium virginicum</i>	common peppergrass	herb	FACU-	0
<i>Lycopus americanus</i>	common water horehound	herb	OBL	3
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*
<i>Maclura pomifera</i>	hedge apple	shrub	FACU	*
<i>Medicago lupulina</i>	black medic	herb	FAC-	*
<i>Medicago sativa</i>	alfalfa	herb	UPL	*
<i>Melilotus alba</i>	white sweet clover	herb	FACU	*
<i>Melilotus officinalis</i>	yellow sweet clover	herb	FACU	*
<i>Morus alba</i>	white mulberry	shrub, herb	FAC	*
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0
<i>Panicum virgatum</i>	prairie switchgrass	herb	FAC+	4
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Phleum pratense</i>	Timothy	herb	FACU	*
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Phytolacca americana</i>	pokeweed	herb	FAC-	1
<i>Pilea pumila</i>	Canada clearweed	herb	FACW	3
<i>Plantago lanceolata</i>	narrow-leaved plantain	herb	FAC	*
<i>Plantago rugelii</i>	red-stalked plantain	herb	FAC	0
<i>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*
<i>Polygonum persicaria</i>	spotted lady's thumb	herb	FACW	*
<i>Populus deltoides</i>	eastern cottonwood	shrub, herb	FAC+	2
<i>Prunella vulgaris</i>	self-heal	herb	FAC	*
<i>Ptelea trifoliata</i>	wafer ash	shrub	FACU+	4
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rorippa sylvestris</i>	creeping yellow cress	herb	OBL	*
<i>Rudbeckia laciniata</i>	cutleaf coneflower	herb	FACW+	3
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 8 of 9)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Setaria verticillata</i>	bristly foxtail	herb	FAC	*
<i>Setaria viridis</i> var. <i>major</i>	tall green foxtail	herb	UPL	*
<i>Sida spinosa</i>	prickly sida	herb	FACU	*
<i>Silphium perfoliatum</i>	cup plant	herb	FACW-	4
<i>Smilax hispida</i>	bristly greenbrier	vine	FAC	3
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1
<i>Sonchus arvensis</i>	field sowthistle	herb	FAC-	*
<i>Taraxacum officinale</i>	common dandelion	herb	FACU	*
<i>Thlaspi arvense</i>	field penny cress	herb	UPL	*
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*
<i>Trifolium pratense</i>	red clover	herb	FACU+	*
<i>Trifolium repens</i>	white clover	herb	FACU+	*
<i>Urtica dioica</i>	stinging nettle	herb	FAC+	2
<i>Verbena urticifolia</i>	white vervain	herb	FAC+	3
<i>Verbesina alternifolia</i>	wingstem	herb	FACW	4
<i>Viola pratincola</i>	common blue violet	herb	FAC	1
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

†Coefficient of Conservatism (Taft et al. 1997)

*Non-native species

$\bar{C} = \sum C/N = 86/47 = 1.8$

$FQI = \sum C/\sqrt{N} = 86/\sqrt{47} = 12.5$

ROUTINE ONSITE WETLAND DETERMINATION

Site H (page 9 of 9)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** NW/4, NW/4 Sect. 11, T. 33 N., R. 7 E.**Location:** This planned wetland occurs in the open area between the gravel road that bisects the project area and the Mazon River, between 1326 m (4350 ft) to 1798 (5900 ft) north of Pine Bluff Rd.

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site I (page 2 of 3)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: S/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the open field just east of the Mazon River from 488 m (1600 ft) to 1021 m (3350 ft) north of Pine Bluff Rd.

SOILS *continued*

Non-hydric (majority of the site)

Series and phase: Lawson silt loam (Aquic Cumulic Hapludoll)

On county hydric soils list? Yes: No: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

Redox Concentrations? Yes: No: X Color: N/A

Redox Depletions? Yes: No: X Color: N/A

Matrix color: 10YR 3/1

Other indicators: None

Hydric soils? Yes: No: X

Rationale: The Natural Resources Conservation Service identifies Lawson as an Aquic Cumulic Hapludoll which is somewhat poorly drained. This soil does not possess any redoximorphic features. Therefore, the soil at this site does not meet the hydric soil criteria. This soil does not meet any of the NRCS hydric soil indicators.

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

ROUTINE ONSITE WETLAND DETERMINATION

Site I (page 3 of 3)

Field Investigator: Wilm and Wiesbrook**Date:** 27, 28 September and 4, 5 October, 2007**Project Name:** Morris Wetland Bank**Job No.:** P-93-010-98 **Seq. No.:** 1306**State:** Illinois **County:** Grundy **Applicant:** IDOT District 3**Site Name:** Planned wetland**Legal Description:** S/2 Sect. 11, T. 33 N., R. 7 E.**Location:** This planned wetland is located in the open field just east of the Mazon River from 488 m (1600 ft) to 1021 m (3350 ft) north of Pine Bluff Rd.**DETERMINATION AND RATIONALE****Is the site a wetland?** Yes: No: X

Rationale: Although hydric soils are present on a portion of this site, dominant hydrophytic vegetation and wetland hydrology are not; therefore, this site is not a wetland. The NWI did not code this site as a wetland.

Determined by: Brian Wilm (vegetation and hydrology)
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Keith Carr and Geoff Pociask (hydrology)
Illinois State Geological Survey
615 East Peabody Drive
Champaign, Illinois 61820

ROUTINE ONSITE WETLAND DETERMINATION

Site J (page 2 of 2)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: NE/4, SW/4 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the open field 274 m (900 ft) east of the Mazon River and from 594 m (1950 ft) to 762 m (2500 ft) north of Pine Bluff Rd.

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE

Is the site a wetland? Yes: No: X

Rationale: Although hydric soils are present at this site, dominant hydrophytic vegetation and wetland hydrology are not. Therefore, this site is not a wetland. The NWI did not code this site as a wetland.

Determined by: Brian Wilm (vegetation and hydrology)
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ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 2 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the eastern most portion of the project area.

HYDROLOGY (K-1)

Inundated: Yes: X No: Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: This site consists of two separate low areas within the landscape. Each receives water via precipitation and runoff from surrounding higher ground and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration, soil infiltration, and drainage into the Mazon River.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: This site occupies low positions within the landscape. Water-borne sediment deposits and wetland drainage patterns were observed.

Wetland hydrology: Yes: X No:

Rationale: Field evidence cited above indicates that wetland hydrology is present. Also, the ISGS reported that the wetland hydrology criterion had been met for this portion of the site in 2007 (Fucciolo et al. 2007). In our opinion, this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

DETERMINATION AND RATIONALE (K-1)

Is the site a wetland? Yes: X No:

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are present throughout this site; therefore, this site is a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 4 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the easternmost portion of the project area.

HYDROLOGY (K-2)

Inundated: Yes: No: X Depth of standing water: None

Depth to saturated soil: Undetermined

Overview of hydrological flow through the system: It receives water via precipitation and occasional overflow from the Illinois and Mazon rivers. Water leaves the site primarily via evapotranspiration.

Size of Watershed: Approximately 14023 km² (8714 mi²)

Other field evidence observed: None

Wetland hydrology: Yes: No: X

Rationale: There is no field evidence to indicate that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion. Also, the ISGS reported that the wetland hydrology criterion had not been met for this site in 2007 (Fucciolo et al. 2007).

DETERMINATION AND RATIONALE (K-2)

Is the site a wetland? Yes: No: X

Rationale: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all absent; therefore, this part of the site is not a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 5 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the eastern most portion of the project area.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Abutilon theophrasti</i>	velvet-leaf	herb	FACU-	*
<i>Acer negundo</i>	box elder	shrub, herb	FACW-	1
<i>Agropyron repens</i>	quack grass	herb	FACU	*
<i>Alliaria petiolata</i>	garlic mustard	herb	FAC	*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia artemisiifolia</i>	common ragweed	herb	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Asclepias incarnata</i>	swamp milkweed	herb	OBL	4
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0
<i>Aster ontarionis</i>	Ontario aster	herb	FAC	4
<i>Aster pilosus</i>	hairy aster	herb	FACU+	0
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Bidens frondosa</i>	common beggar's ticks	herb	FACW	1
<i>Bidens tripartita</i>	beggar's ticks	herb	OBL	2
<i>Bromus commutatus</i>	hairy brome	herb	UPL	*
<i>Bromus inermis</i>	awnless brome grass	herb	UPL	*
<i>Campsis radicans</i>	trumpet creeper	shrub, herb	FAC	2
<i>Carex davisii</i>	Davis sedge	herb	FAC+	3
<i>Carex grayi</i>	bur sedge	herb	FACW+	6
<i>Carex normalis</i>	sedge	herb	FACW	4
<i>Carex</i> spp.	sedges	herb	----	--
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Celtis occidentalis</i>	hackberry	shrub, herb	FAC-	3
<i>Cichorium intybus</i>	chickory	herb	UPL	*
<i>Cirsium arvense</i>	Canada thistle	herb	FACU	*
<i>Cirsium vulgare</i>	bull thistle	herb	FACU-	*
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Dactylis glomerata</i>	orchard grass	herb	FACU	*
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Elaeagnus umbellata</i>	autumn olive	shrub	UPL	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 6 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the eastern most portion of the project area.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Eupatorium rugosum</i>	white snakeroot	herb	FACU	2
<i>Eupatorium serotinum</i>	late boneset	herb	FAC+	1
<i>Festuca pratensis</i>	meadow fescue	herb	FACU-	*
<i>Geum canadense</i>	white avens	herb	FAC	2
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Glechoma hederacea</i>	ground ivy	herb	FACU	*
<i>Helianthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hordeum jubatum</i>	squirrel-tail	herb	FAC+	*
<i>Juglans nigra</i>	black walnut	shrub, herb	FACU	4
<i>Lactuca serriola</i>	prickly lettuce	herb	FAC	*
<i>Lonicera maackii</i>	Amur honeysuckle	shrub	UPL	*
<i>Lycopus americanus</i>	common water horehound	herb	OBL	3
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*
<i>Medicago lupulina</i>	black medic	herb	FAC-	*
<i>Melilotus alba</i>	white sweet clover	herb	FACU	*
<i>Melilotus officinalis</i>	yellow sweet clover	herb	FACU	*
<i>Morus alba</i>	white mulberry	shrub, herb	FAC	*
<i>Muhlenbergia frondosa</i>	common satin grass	herb	FACW	3
<i>Oenothera biennis</i>	evening primrose	herb	FACU	1
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0
<i>Panicum implicatum</i>	old field panic grass	herb	FAC	2
<i>Pastinaca sativa</i>	parsnip	herb	UPL	*
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Phleum pratense</i>	Timothy	herb	FACU	*
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Physostegia virginiana</i>	false dragonhead	herb	FACW	6
<i>Plantago lanceolata</i>	narrow-leaved plantain	herb	FAC	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 7 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the eastern most portion of the project area.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Plantago rugelii</i>	red-stalked plantain	herb	FAC	0
<i>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*
<i>Polygonum lapathifolium</i>	curttop lady's thumb	herb	FACW+	0
<i>Polygonum persicaria</i>	spotted lady's thumb	herb	FACW	*
<i>Populus deltoides</i>	eastern cottonwood	shrub, herb	FAC+	2
<i>Potentilla norvegica</i>	rough cinquefoil	herb	FAC	0
<i>Prunella vulgaris</i>	self-heal	herb	FAC	*
<i>Ranunculus abortivus</i>	little-leaf buttercup	herb	FACW-	1
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*
<i>Rudbeckia laciniata</i>	cutleaf coneflower	herb	FACW+	3
<i>Rudbeckia triloba</i>	brown-eyed Susan	herb	FAC-	3
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Salix amygdaloides</i>	peach-leaved willow	shrub	FACW	4
<i>Salix exigua</i>	sandbar willow	shrub	OBL	1
<i>Salix nigra</i>	black willow	shrub	OBL	3
<i>Sambucus canadensis</i>	common elder	shrub	FACW-	2
<i>Sanicula gregaria</i>	common snakeroot	herb	FAC+	2
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Sida spinosa</i>	prickly sida	herb	FACU	*
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1
<i>Stachys tenuifolia</i>	slenderleaf betony	herb	OBL	5
<i>Taraxacum officinale</i>	common dandelion	herb	FACU	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site K (page 8 of 8)

Field Investigator: Wilm and Wiesbrook

Date: 27, 28 September and 4, 5 October, 2007

Project Name: Morris Wetland Bank

Job No.: P-93-010-98 **Seq. No.:** 1306

State: Illinois **County:** Grundy **Applicant:** IDOT District 3

Site Name: Planned wetland

Legal Description: N/2 Sect. 11, T. 33 N., R. 7 E.

Location: This planned wetland is located in the large field in the eastern most portion of the project area.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1
<i>Tridens flavus</i>	common purple top	herb	UPL	1
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*
<i>Trifolium pratense</i>	red clover	herb	FACU+	*
<i>Trifolium repens</i>	white clover	herb	FACU+	*
<i>Verbena hastata</i>	blue vervain	herb	FACW+	3
<i>Verbena urticifolia</i>	white vervain	herb	FAC+	3
<i>Verbesina alternifolia</i>	wingstem	herb	FACW	4
<i>Veronica peregrina</i>	purslane speedwell	herb	FACW+	0
<i>Viola pratincola</i>	common blue violet	herb	FAC	1
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

†Coefficient of Conservatism (Taft et al. 1997)

*Non-native species

$\bar{C} = \sum C/N = 124/61 = 2.0$

$FQI = \sum C / \sqrt{N} = 124/\sqrt{61} = 15.9$

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APPENDIX 3
Hydrological Information

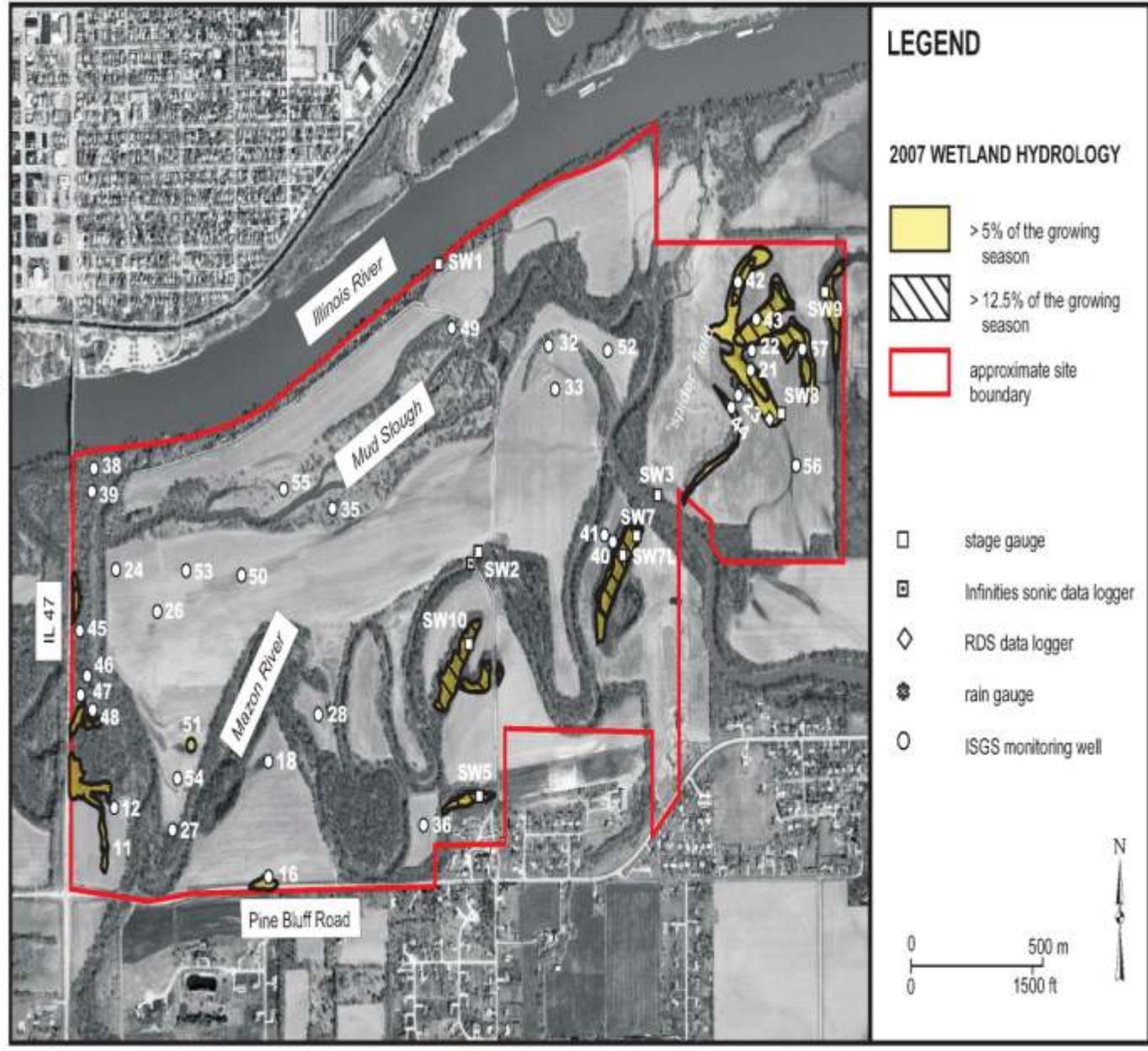
Morris, Illinois River Wetland Bank Site

Estimated Areal Extent of 2007 Wetland Hydrology

based on data collected between September 1, 2006 and September 18, 2007

Map based on USGS digital orthophotograph, Morris NE quarter quadrangle from 4/5/1998 aerial photography (ISGS 2001)

47



Appendix 4. Comprehensive plant species for all non-wetland tree planted areas, 2007.

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Abutilon theophrasti</i>	velvet-leaf	herb	FACU-	*
<i>Acer negundo</i>	box elder	shrub, herb	FACW-	1
<i>Acer saccharinum</i>	silver maple	shrub, herb	FACW	1
<i>Agropyron repens</i>	quack grass	herb	FACU	*
<i>Agrostis alba</i>	red top	herb	FACW	0
<i>Alliaria petiolata</i>	garlic mustard	herb	FAC	*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia artemisiifolia</i>	common ragweed	herb	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0
<i>Aster ontarionis</i>	Ontario aster	herb	FAC	4
<i>Aster pilosus</i>	hairy aster	herb	FACU+	0
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Atriplex patula</i>	fat-hen saltbush	herb	FACU+	*
<i>Bidens frondosa</i>	common beggar's ticks	herb	FACW	1
<i>Brassica kaber</i>	charlock	herb	UPL	0
<i>Brassica nigra</i>	black mustard	herb	UPL	*
<i>Bromus commutatus</i>	hairy brome	herb	UPL	*
<i>Bromus inermis</i>	awnless brome grass	herb	UPL	*
<i>Bromus japonicus</i>	Japanese brome	herb	FACU	*
<i>Calystegia sepium</i>	American bindweed	herb	FAC	1
<i>Capsella bursa-pastoris</i>	sheperd's-purse	herb	FAC-	*
<i>Carduus nutans</i>	musk bristle thistle	herb	UPL	*
<i>Carex</i> sp.	sedge	herb	----	--
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Celtis occidentalis</i>	hackberry	shrub, herb	FAC-	3
<i>Cercis canadensis</i>	eastern redbud	shrub, herb	FACU	3
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Chenopodium album</i>	lamb's quarters	herb	FAC-	*
<i>Cichorium intybus</i>	chickory	herb	UPL	*
<i>Cirsium arvense</i>	Canada thistle	herb	FACU	*
<i>Cirsium discolor</i>	pasture thistle	herb	UPL	3
<i>Cirsium vulgare</i>	bull thistle	herb	FACU-	*
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Cryptotaenia canadensis</i>	honestwort	herb	FAC	1
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1
<i>Cyperus esculentus</i>	yellow nut-sedge	herb	FACW	0
<i>Dactylis glomerata</i>	orchard grass	herb	FACU	*
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*
<i>Dipsacus laciniatus</i>	cut-leaved teasel	herb	UPL	*
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Elaeagnus umbellata</i>	autumn olive	shrub	UPL	*
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1

Species list continued on next page.

Appendix 4. Continued.

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Erigeron strigosus</i>	daisy fleabane	herb	FAC-	2
<i>Eupatorium rugosum</i>	white snakeroot	herb	FACU	2
<i>Eupatorium serotinum</i>	late boneset	herb	FAC+	1
<i>Festuca pratensis</i>	meadow fescue	herb	FACU-	*
<i>Fraxinus pennsylvanica</i>	green ash	shrub, herb	FACW	2
<i>Geum canadense</i>	white avens	herb	FAC	2
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Glechoma hederacea</i>	ground ivy	herb	FACU	*
<i>Gleditsia triacanthos</i>	honey locust	shrub, herb	FAC	2
<i>Helenium autumnale</i>	autumn sneezeweed	herb	FACW+	3
<i>Helianthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hordeum jubatum</i>	squirrel-tail	herb	FAC+	*
<i>Ipomoea hederacea</i>	ivy-leaved morning glory	herb	FAC	*
<i>Ipomoea lacunosa</i>	small white morning-glory	herb	FACW	1
<i>Ipomoea pandurata</i>	wild sweet potato vine	herb	FACU	2
<i>Juglans nigra</i>	black walnut	shrub, herb	FACU	4
<i>Lactuca floridana</i>	blue lettuce	herb	FAC-	4
<i>Lactuca saligna</i>	willow-leaved lettuce	herb	FACU	*
<i>Lactuca serriola</i>	prickly lettuce	herb	FAC	*
<i>Laportea canadensis</i>	wood nettle	herb	FACW	2
<i>Leersia virginica</i>	white grass	herb	FACW	4
<i>Lepidium virginicum</i>	common peppergrass	herb	FACU-	0
<i>Lolium perenne</i>	crested rye grass	herb	FACU	*
<i>Lonicera maackii</i>	Amur honeysuckle	shrub	UPL	*
<i>Lotus corniculatus</i>	birdsfoot-trefoil	herb	FAC-	*
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*
<i>Medicago lupulina</i>	black medic	herb	FAC-	*
<i>Medicago sativa</i>	alfalfa	herb	UPL	*
<i>Melilotus alba</i>	white sweet clover	herb	FACU	*
<i>Melilotus officinalis</i>	yellow sweet clover	herb	FACU	*
<i>Mollugo verticillata</i>	carpetweed	herb	FAC	*
<i>Morus alba</i>	white mulberry	shrub, herb	FAC	*
<i>Muhlenbergia frondosa</i>	common satin grass	herb	FACW	3
<i>Oenothera biennis</i>	evening primrose	herb	FACU	1
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0
<i>Parthenocissus quinquefolia</i>	Virginia creeper	herb	FAC-	2
<i>Pastinaca sativa</i>	parsnip	herb	UPL	*
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Phleum pratense</i>	Timothy	herb	FACU	*
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Physalis subglabrata</i>	smooth ground cherry	herb	UPL	0
<i>Pilea pumila</i>	Canada clearweed	herb	FACW	3
<i>Plantago lanceolata</i>	narrow-leaved plantain	herb	FAC	*
<i>Plantago rugelii</i>	red-stalked plantain	herb	FAC	0
<i>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*

Species list continued on next page.

Appendix 4. Continued.

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*
<i>Polygonum lapathifolium</i>	curttop lady's thumb	herb	FACW+	0
<i>Polygonum pennsylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Polygonum scandens</i>	climbing buckwheat	herb	FAC	2
<i>Populus deltoides</i>	eastern cottonwood	shrub, herb	FAC+	2
<i>Potentilla norvegica</i>	rough cinquefoil	herb	FAC	0
<i>Prunella vulgaris</i>	self-heal	herb	FAC	*
<i>Ptelea trifoliata</i>	wafer ash	shrub	FACU+	4
<i>Ranunculus abortivus</i>	little-leaf buttercup	herb	FACW-	1
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rorippa sylvestris</i>	creeping yellow cress	herb	OBL	*
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*
<i>Rudbeckia laciniata</i>	cutleaf coneflower	herb	FACW+	3
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Salix exigua</i>	sandbar willow	shrub, herb	OBL	1
<i>Salix nigra</i>	black willow	shrub, herb	OBL	3
<i>Sambucus canadensis</i>	common elder	shrub, herb	FACW-	2
<i>Sanicula gregaria</i>	common snakeroot	herb	FAC+	2
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Setaria verticillata</i>	bristly foxtail	herb	FAC	*
<i>Setaria viridis</i>	common foxtail	herb	UPL	*
<i>Setaria viridis</i> var. <i>major</i>	tall green foxtail	herb	UPL	*
<i>Sicyos angulatus</i>	bur cucumber	herb	FACW-	3
<i>Sida spinosa</i>	prickly sida	herb	FACU	*
<i>Silphium perfoliatum</i>	cup plant	herb	FACW-	4
<i>Smilax hispida</i>	bristly greenbrier	herb	FAC	3
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1
<i>Solidago gigantea</i>	late goldenrod	herb	FACW	3
<i>Sonchus arvensis</i>	field sowthistle	herb	FAC-	*
<i>Taraxacum officinale</i>	common dandelion	herb	FACU	*
<i>Teucrium canadense</i>	American germander	herb	FACW-	3
<i>Thlaspi arvense</i>	field penny cress	herb	UPL	*
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1
<i>Tragopogon dubius</i>	goat's beard	herb	UPL	*
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*
<i>Trifolium pratense</i>	red clover	herb	FACU+	*
<i>Trifolium repens</i>	white clover	herb	FACU+	*
<i>Ulmus americana</i>	American elm	shrub, herb	FACW-	5
<i>Ulmus pumila</i>	Siberian elm	shrub, herb	UPL	*
<i>Ulmus rubra</i>	slippery elm	shrub, herb	FAC	3
<i>Urtica dioica</i>	stinging nettle	herb	FAC+	2
<i>Verbena urticifolia</i>	white vervain	herb	FAC+	3

Species list continued on next page.

Appendix 4. Continued.

Scientific name	Common name	Stratum	Wetland indicator status	C†
<i>Viola pratincola</i>	common blue violet	herb	FAC	1
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

†Coefficient of Conservatism (Taft et al. 1997)

*Non-native species

APPENDIX 5

Photographs of Planned Wetlands

**(Photograph files from 2007 were corrupted during the file transfer process;
photographs from 2006 have been substituted.)**



Photograph 1. Planned wetland A.



Photograph 2. Planned wetland B.



Photograph 3. Planned wetland C.



Photograph 4. Planned wetland D.



Photograph 5. Planned wetland E.



Photograph 6. Planned wetland F.



Photograph 7. Planned wetland G.



Photograph 8. Planned wetland H.



Photograph 9. Planned wetland I.



Photograph 10. Planned wetland J.



Photograph 11. Planned wetland K.