

**TRANSMITTAL FORM**

To: Bureau of Design and Environment  
 Attn: Mr. Matthew Sunderland  
 From: Illinois Natural History Survey  
 Re: Wetland Mitigation Monitoring Report

**Route and Location**

Route: FAS 1637 (TR 478)  
 County: Sangamon  
 Project Area: 5.80 acres off Young Road adjacent to the Sangamon River north  
 of Buckhart  
 Section: 90-08108-00-BR  
 Sequence Number: 10531

**Survey Conducted By:** Dennis Keene, Rick Larimore, and Paul Tessene  
 Illinois Natural History Survey  
 Center for Wildlife Ecology  
 1816 S. Oak St.  
 Champaign, IL 61820  
 (217) 244-0873 (Keene)

**Dates Conducted:** 26 September 2006

**Project Summary:**

This is a wetland mitigation monitoring project located on approximately 5.80 acres off Young Road adjacent to the Sangamon River north of Buckhart. This site was previously monitored and had failed to meet the three criteria of being a wetland. This is the third year of the second attempt to monitor this site after some additional shrub stage trees were planted before the 2004 monitoring season. Some minor changes in site location also have occurred. The attached report includes an explanation of monitoring methods and results. We also discuss the progress towards attaining the project goals. Additionally, wetland determinations including the computed FQI of the area along with photos and maps of the area are included.

Signed: \_\_\_\_\_

Dr. Allen E. Plocher  
 INHS/IDOT Project Coordinator

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Dr. Edward Heske  
 INHS/IDOT Project Principal Investigator  
 Director, Center for Wildlife and Plant Ecology

Date: \_\_\_\_\_

## 2006 Wetland Mitigation Monitoring Report for FAS 1637 (TR 478) Sangamon County, Illinois

### Introduction

On September 26, 2006, we evaluated a site that hopefully if it succeeds, will be used as a wetland compensation site. This is the third year out of the proposed five years of monitoring at the site. This site was previously monitored and had failed to meet the three criteria of being a wetland. Changes that were made to the project included planting more shrub stage trees. Also, part of the area that failed was deleted from the new plan and a new area was acquired nearby as a substitute for the deleted area. Thus, previous site numbering and boundaries have changed since the original (1998) project request. Site 1 now consists of the original Site 1 plus part of Site 2. Site 2 now consists of part of the original Site 3 plus a new area. Site 2 consists of a borrow area and an old road bed area. Site 1 consists of an old road bed and a previously cropped area. Site 1 is found west of Young Road and Site 2 is located east of Young Road. Site location is NW/4, SW/4, Section 9, T.15N., R.3W. (Mechanicsburg 7.5 minute quadrangle). Some of the previously planted shrub stage trees at these sites that died were replaced with different species of shrub stage trees. Vegetation species lists, soil, and hydrology characteristics, as well as wetland determination forms are included in this report. Project goals, objectives, and performance criteria are incorporated in this report, as are monitoring methods, monitoring results, summary information, and recommendations.

### Goals, Objectives, and Performance Criteria

Goals, objectives, and performance criteria follow those specified in the IDOT project request (M. Sunderland, IDOT, 2004). Performance criteria are based on those specified in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Each goal should be attained by the end of the five-year monitoring period. Goals, objectives, and performance criteria are listed below.

Project Goal #1: The created wetland mitigation area should be determined to be jurisdictional wetland by the current federal definition.

Objective: The created wetland should consist of approximately 5.80 acres of wet floodplain forest. It should satisfy the three criteria of the federal wetland definition: dominant hydrophytic vegetation, hydric soils, and wetland hydrology.

Performance Criteria:

A. Predominance of Hydrophytic Vegetation. More than 50% of the dominant plant species must be hydrophytic.

B. Presence of Wetland Hydrology. The site must have soils saturated to the surface (water table within 12 inches to the surface) or be inundated to a depth of less than 2 meters (6.6 ft) for at least 12.5% of the growing season.

C. Presence 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 forested wetland plant community should meet standards for survival of planted species and overall floristic composition.

Objective: Planted trees should dominate the site.

Performance Criteria: There should be a 100% survival rate of the planted trees. The new wetland mitigation monitoring plan calls for a total of 125 trees for the whole project. There should be at least 125 (100% survival rate) live planted trees each year. Trees will be replanted if needed during the monitoring period.

## Methods

Project Goals #1:

Performance Criteria:

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). This method is based on aerial coverage estimates for individual plant species. Each of the dominant plant species is then assigned its wetland indicator status rating (Reed 1988). Any plant rated facultative or wetter (*i.e.*, FAC, FAC+, FACW, and OBL) is considered hydrophytic. A predominance of hydrophytic vegetation in the wetland plant community exists if more than 50% of the dominant species present are hydrophytic.

B. Presence of Wetland Hydrology. The Illinois State Geological Survey (ISGS) is monitoring this site. Well data and analysis will be included in the report. Also, Illinois Natural History Survey personnel will utilize hydrologic field indicators to determine the presence or absence of wetland hydrology as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987).

C. Presence of Hydric Soils. INHS personnel will examine soil cores for field indicators to determine the presence or absence of hydric soils as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Field Indicators of Hydric Soils in the United States* (USDA, 2003). Soil profile descriptions from the sites can be found below.

## Photography

Photos were taken in each community facing north and south directions. Photographs are presented in Appendix 2.

## Results

Project Goal #1: The created wetland mitigation area should be determined to be a jurisdictional wetland by the current federal definition.

## Performance Criteria

### A. Predominance of Hydrophytic Vegetation.

Dominant hydrophytic vegetation is present at all sites. Site 1 herbaceous layer is dominated by panicled aster (*Aster simplex*, FACW), hairy crab grass (*Digitaria sanguinalis*, FACU), barnyard grass (*Echinochloa crus-galli*, FACW), and pigeon grass (*Setaria glauca*, FAC). In the shrub stage tree layer planted species of river birch (*Betula nigra*, FACW), pecan (*Carya illinoensis*, FACW), green ash (*Fraxinus pennsylvanica*, FACW), swamp white oak (*Quercus bicolor*, FACW+), and pin oak (*Quercus palustris*, FACW) did not constitute enough coverage of the site to be considered dominants.

Site 2 herbaceous layer is dominated by tall waterhemp (*Amaranthus tuberculatus*, OBL), giant smartweed (*Polygonum pensylvanicum*, FACW+), and fog-fruit (*Phyla lanceolata*, OBL). In the shrub stage tree layer planted species of river birch (*Betula nigra*, FACW), pecan (*Carya illinoensis*, FACW), green ash (*Fraxinus pennsylvanica*, FACW), swamp white oak (*Quercus bicolor*, FACW+), and pin oak (*Quercus palustris*, FACW) did not constitute enough coverage of the site to be considered dominants.

### B. Presence of Wetland Hydrology.

Detailed hydrologic monitoring by the Illinois State Geological Survey (ISGS) is being performed at this site. Both areas occur in the Sangamon River floodplain. Early spring floodwaters from the Sangamon River deposited water onto both sites 1 and 2. All of Site 1 had more than 5% but less than 12.5% wetland hydrology during the growing season. Thus, this site may satisfy the wetland hydrology criterion this year. A deep borrow area south of Site 1 may play a role in limiting water on this site and may prevent this area from reaching the targeted 12.5% of wetland hydrology during the growing season.

Site 2 is closer to the Sangamon River and receives more overflow from the river during times of high water. This year most of Site 2 had more than 5% wetland hydrology during the growing season. Also, a portion of Site 2 (0.6 ha, 1.5 ac) had greater than 12.5% wetland hydrology during the growing season. The area greater than 12.5% satisfies the wetland hydrology criterion and the area greater than 5% may fulfill the wetland hydrology criterion this year. The part of Site 2 where the shrub stage trees were planted had some places of barren soil which may be attributed to standing water but may also suggest poor soil conditions. This area was also scraped and slopes into the borrow area. Water table depth at the time of the field investigation at both sites was greater than 1.3 m (50 in). Total area of both sites that meet greater than 5% wetland hydrology criterion was 2.2 ha (5.4 ac) out of 2.3 ha (5.8 ac). Well data from the ISGS can be found below and in the ISGS report on the site.

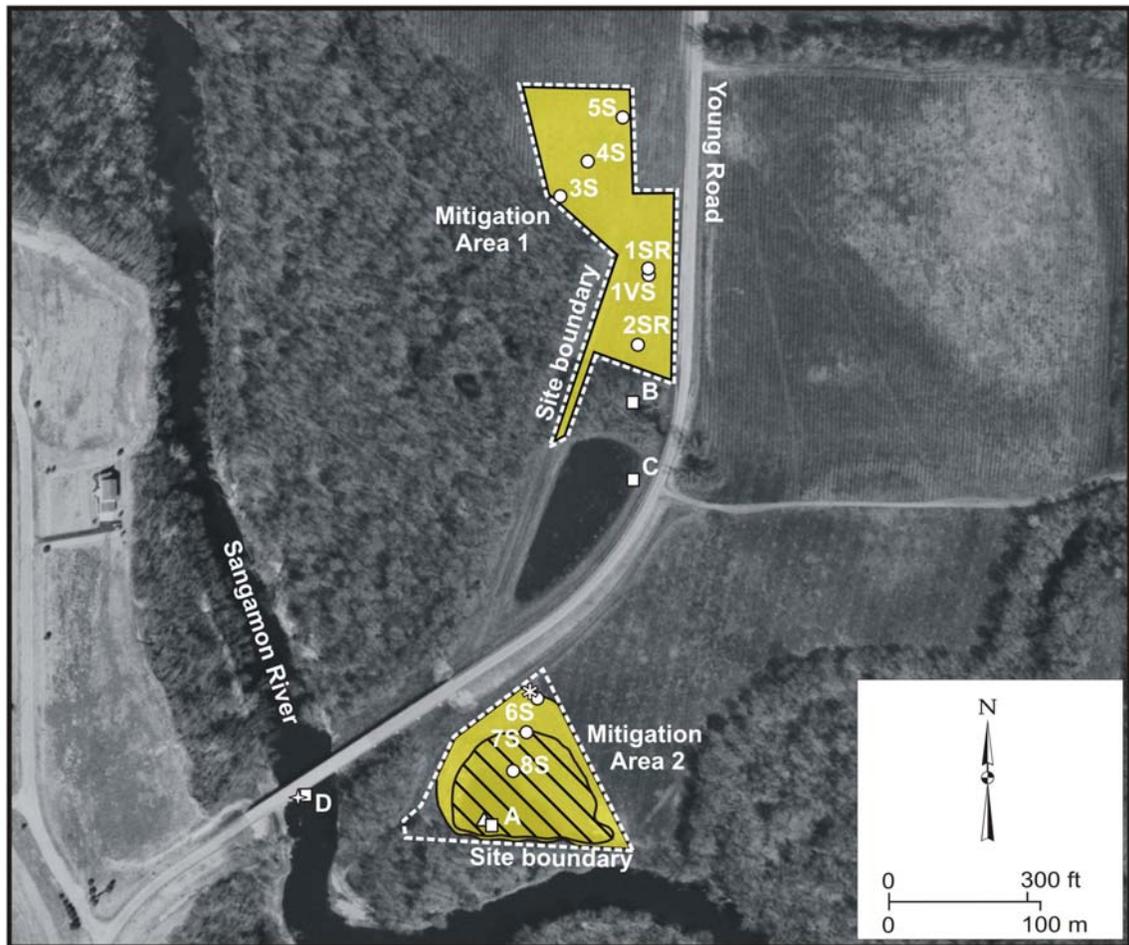
### Buckhart Wetland Compensation Site

[FAS 1637 (TR 478)]

#### Estimated Areal Extent of 2006 Wetland Hydrology

Based on data collected between September 1, 2005 and September 1, 2006

Map based on USGS digital orthophotographs, Mechanicsburg, SE and SW quarter quadrangles (ISGS 2005)



- |   |                               |                       |
|---|-------------------------------|-----------------------|
| <b>2006 Wetland Hydrology</b>   |                               | ○ monitoring well     |
|  | > 12.5% of the growing season | □ staff gauge         |
|  | > 5% of the growing season    | △ In-Situ data logger |
|   |                               | ⊛ rain gauge          |
|   |                               | ⋄ Sonic data logger   |

### C. Presence of Hydric Soils.

Soils were examined at both sites. Site 1 consists of an old crop field along with an old roadbed transecting the site. This area is compacted and soil probing was a problem. Most of the site consists of Tice silty clay loam (non-hydric soil). Also, a very small area had Sawmill silty clay loam (hydric soil). This area consisted of 0.11 ha (0.28 acre) out of a total of 1.27 ha (3.14 acre) at the site.

Site 2 consists of a borrow area and also an old roadbed. The deep borrow area (wet meadow) and a small scraped area with planted trees area had hydric soils. The borrow area consisted of 0.6 ha (1.5 acre) and the tree planted had 0.01 ha (0.03) acre of hydric soils. These areas are identified as 2B and 2A on the aerial photos. The vast majority of the site where the trees were planted does not have hydric soils. The tables below give a brief soil description of the hydric and non-hydric areas of both sites. Hydric areas will be marked on the aerial photograph. Below are typical soil descriptions at the mitigation site.

#### Site 1 (west of Young Road)

Tice silty clay loam (non-hydric soil, some areas have less of a surface than described here)

<u>Hor-izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre-tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex-ture</u>	<u>Structure</u>
	0-20 in	10YR 3/1						Sil	gr
	20-30 in	10YR 4/3		Ffp 7.5YR 4/6			2.5Y 4/1	Sicl	Pr

#### Sawmill silty clay loam (hydric soil)

<u>Hor-izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre-tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex-ture</u>	<u>Structure</u>
	0-24 in	10YR 3/1						Sicl	Sub bl
	24-36 in	N4/ 2.5Y 4/1		Ffp 7.5YR 4/6				Sicl	Pr

#### Site 2 (east of Young Road)

Tice silty clay loam (non-hydric soil, furthestmost north of the river)

<u>Hor-izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre-tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex-ture</u>	<u>Structure</u>
	0-11 in	10YR 3/1 10YR 3/2 10YR 4/3						sicl	sub bl
	11-19 in	10YR 4/3	Few 10YR 3/1	ffp 7.5YR 4/6		10YR 4/1		sicl	sub bl
	19-30 in	10YR 4/1 10YR 4/3		cmp 7.5YR 4/6				sicl cl	pr

## Tice silty clay loam (non-hydric soil, sample taken closest to the river)

<u>Hor- izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre- -tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex- -ture</u>	<u>Structure</u>
	0-11 in	10YR 3/2						sil	sub bl
	11-30 in	10YR 4/3 10YR 4/2						sicl	pr

## Hydric soil (scraped area)

<u>Hor- izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre- -tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex- -ture</u>	<u>Structure</u>
	0-7 in	2.5Y 2.5/1			Mfp 10YR 4/4			sil	gr
	7-20 in	2.5Y 5/1 2.5Y 5/2 N 4/		Ffp 7.5YR 4/6	Mfp 10YR 4/4			sicl	pr

## Hydric soil (borrow area)

<u>Hor- izon</u>	<u>Depth</u>	<u>Matrix Color</u>	<u>Concre- -tions</u>	<u>Iron Masses</u>	<u>Pore linings</u>	<u>Iron Deplet.</u>	<u>Clay Deplet.</u>	<u>Tex- -ture</u>	<u>Structure</u>
	0-2 in	10YR 3/1						sil	gr
	2-12	2.5Y 6/1 and 4/1		Mcp 7.5YR 4/6				loam	pr
	12-20 in	2.5Y 5/1 and 4/1		Cfp 7.5YR 4/6 Cmp 10YR 5/8				sil	pr

Wetland determination forms can be found in Appendix 1.

Project Goal #2: The created wetland should meet minimum standards for vegetational cover of a wet floodplain forest.

Performance Criteria:

Tree Density (live planted trees/acre for each tree species). Live trees were counted and species tallied for both sites. At this site 125 live planted trees are required each year. In 2004, 200 trees (125 + 75 additional trees) were planted. The shrub stage trees which were planted at the sites include the following: river birch (*Betula nigra*, FACW), pecan (*Carya illinoensis*, FACW), green ash (*Fraxinus pennsylvanica*, FACW), swamp white oak (*Quercus bicolor*, FACW+), and pin oak (*Quercus palustris*, FACW). The number of individuals per species is presented below. A total of 147 live individuals were counted this year (2006). Therefore, this project goal is met in 2006.

## Site 1

<u>Planted Species</u>	<u>Individuals</u>
<i>Betula nigra</i> (river birch)	22
<i>Carya illinoensis</i> (pecan)	17
<i>Fraxinus pennsylvanica</i> (green ash)	31
<i>Quercus bicolor</i> (swamp white oak)	25
<i>Quercus palustris</i> (pin oak)	<u>23</u>
	118 sapling/shrub stage trees/3.14 acres

## Site 2

<u>Planted Species</u>	<u>Individuals</u>
<i>Betula nigra</i> (river birch)	06
<i>Carya illinoensis</i> (pecan)	03
<i>Fraxinus pennsylvanica</i> (green ash)	13
<i>Quercus bicolor</i> (swamp white oak)	02
<i>Quercus palustris</i> (pin oak)	<u>05</u>
	29 sapling/shrub stage trees/2.66 acres

## Summary and Recommendations

Project Goal 1:

This wetland mitigation site is located on the Sangamon River floodplain. The area consists of land previously in crops and an abandoned roadbed (Sites 1 and 2). Additionally, Site 2 now has a borrow pit. Existing floodplain forest is adjacent. Prior to construction, the vast majority (95%) of this site did not support hydric soils or wetland hydrology. Other than the excavation of the borrow pit and surface scraping in some areas, no other hydrologic alteration was carried out. But, due to a single flooding event early last spring, most of Site 1 and Site 2 may meet the wetland hydrology criterion. While these sites achieved wetland hydrology and had dominant wetland vegetation, soils at these sites did not vary from the previous year. The majority of Site 1 along with the most of the area in Site 2 with trees did not have hydric soils. Thus, these areas will not meet Project Goal 1. At Site 1, 0.11 ha (0.28 acre) met the three wetland criteria this year.

At Site 2, the inclusion of the borrow pit does provide 0.6 ha (1.5 acres) of wet meadow, but this site lacks any acreage of wet floodplain forest. The wet meadow meets the three wetland criteria. Although most of this site may satisfy the wetland hydrology this year, the soils did not change in the drier areas and will not unless the site continues to be at least as wet or wetter than in 2006. Site 2 had a total of 0.62 ha (1.53 acres) that met the three wetland criteria.

Total wetland area that meets the wetland criteria in 2006 is 0.7 ha (1.81 acres). Both sites, overall, may not be wet enough unless the topography of the site is changed or the hydrology drastically altered, which would result in sufficient increases of hydric soils and wetland hydrology to achieve Project Goal 1.

Project Goal 2:

So far, these sites seem likely to meet Project Goal 2. While some trees perished this year (32), actual overall tree survival ( $147/200 = 73\%$ ) is still well over the required 125 live trees present. Floristic quality was poor at all sites due to recent mowing. Less frequent mowing might improve floristic quality. Some natural tree regeneration is present but occurs mainly in the herb layer due to the mowing. The wetland acres that do occur are found in the borrow pit area (wet meadow) where no trees are planted and one small tree planted area (0.11 ha, 0.28 acre) in site 1. Out of 2.3 ha (5.8 acres), this site may currently support only 0.12 ha (0.31 ac) of planted forested wetland restoration this year and 0.6 ha (1.5) acres of excavated emergent wetland.

## Appendix 1: Wetland Report For FAS 1637 (TR 478) Monitoring Report in Sangamon County

### Project Description:

This is a wetland survey conducted for a wetland mitigation monitoring project FAS 1637 (TR 478) in Sangamon County. The following sources were examined while surveying the project area to determine wetland locations and boundaries: United States Geological Survey topographic map and National Wetland Inventory (NWI) map (Mechanicsburg 7.5 minute quadrangle); *Soil Survey of Sangamon County, Illinois*; aerial photographs; *National List of Plant Species That Occur In Wetlands: Illinois*; the 1987 *Corps of Engineers Wetlands Delineation Manual*; and onsite vegetation, soils, topographic and hydrologic indicators. Three routine onsite wetland determinations were completed. Only Site 2B satisfied the wetland criteria.

The Floristic Quality Index (FQI), developed by Swink and Wilhelm (1979) and modified by J. Taft, D. Ladd, G.S. Wilhelm, and L.A. Masters (*Erigenia*, 1997), was applied to the vegetation of each wetland. This index should not be used as a substitute for quantitative vegetation analysis in assessing plant communities, but it does provide a measure of the floristic integrity of each site. The FQI was calculated as follows:  $I = R/\sqrt{N}$ , where R represents the sum of the numerical ratings for all species native to Illinois recorded in the area, and N represents the number of recorded native species. The numerical rating for each species is shown in the species list for the site. The mean-rated quality also was determined by dividing the sum of numerical ratings for all native taxa by the number of recorded native taxa. FQI values of ten or less indicate low natural quality. Sites with FQI values of 20 or more (mean rated quality  $\geq 3.0$ ) possess some evidence of native character and may be considered environmental assets.

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Wetland 1: This wet meadow/forest restoration is located 9 m (30 ft) west of Young Road and 354 m (1160 ft) north of the Sangamon River. Dominant hydrophytic vegetation and hydric soils were present and the site was saturated or inundated greater than 5% but less than 7.5% during the growing season. Thus, this site may meet the criteria of a wetland this year. The NWI did not code this site. This site functions as a water storage area and sediment retention area for the Sangamon River. Wildlife habitat at this site is of low quality. The FQI is 9.0 with planted trees and the mean-rated quality is 2.1 (FQI is 4.6 and mean-rated quality is 1.2 without planted species). These numbers are indicative of a very poor natural quality, but it may not be a true indication of the natural quality of the site since recent mowing made a complete plant species list problematic.

Wetland 2A: This wet meadow/forest restoration is 98 m (320 ft) east of Young Road and 40 m (130 ft) north of the Sangamon River. Dominant hydrophytic vegetation and hydric soils were present and the site was saturated or inundated greater than 5% but less than 7.5% during the growing season. Thus, this site may meet the criteria of a wetland this year. The NWI did not code this site as a wetland. This site functions as a water storage area and sediment retention area for the Sangamon River. Wildlife habitat at this site is of low quality. The FQI is 8.4 and the mean-rated quality is 1.7. These numbers are indicative of a poor natural quality, but it may not be a true indication of the natural quality of the site since recent mowing made a complete plant species list problematic.

Wetland 2B: This wet meadow/forest restoration is located 40 m (130 ft) southeast of Young Road and 30 m (100 ft) north of the Sangamon River. Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are present at this site; thus, this site meets the three criteria of a wetland. The NWI did not code this site as a wetland. This site functions as a water storage area and sediment retention area for the Sangamon River. Wildlife habitat at this site is of low quality. The FQI is 7.3 and the mean-rated quality is 1.9. These numbers are indicative of a poor natural quality, but it may not be a true indication of the natural quality of the site since recent mowing made a complete plant species list problematic.

### **Watershed Data**

The Sangamon River in the project area has a width of 36.5 m (120 ft) and had a moderate flow rate. This stream consists of a clay-silt substrate. This project is located in the Sangamon River-Upper basin and has a USGS hydrologic unit code of 7130006.

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**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 1 (page 1 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: SW/4, NW/4, Section 9 T. 15N., R. 3W.

Location: 9 m (30 ft) west of Young Road and 354 m (1160 ft) north of the Sangamon River

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

**VEGETATION**

Dominant Plant Species	Indicator Status	Stratum
1. <i>Aster simplex</i>	FACW	herb
2. <i>Digitaria sanguinalis</i>	FACU	herb
3. <i>Echinochloa crus-galli</i>	FACW	herb
4. <i>Setaria glauca</i>	FAC	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 75%

Hydrophytic vegetation: Yes: X No:

Rationale: More than 50% of the dominants are OBL, FACW, FAC+, or FAC.

**SOILS**

Series and phase: Sawmill silty clay loam

On Sangamon County hydric soils list? Yes: X No:

Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X

Redox concentrations: Yes: X No: Redox depletions: Yes: X No:

Matrix color: N 4/ and 2.5Y 4/1

Other indicators: This soil is found in a depressional area.

Note: some of this area may have been scraped

Hydric soils: Yes: X No:

Rationale: The Natural Resources Conservation Service classifies Sawmill silty clay loam as having aquic conditions. This soil has iron masses and an iron depleted matrix. These characteristics are evidence of a hydric soil.

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 1 (page 2 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: SW/4, NW/4, Section 9 T. 15N., R. 3W.

Location: 9 m (30 ft) west of Young Road and 354 m (1160 ft) north of the Sangamon River

**HYDROLOGY**

Inundated: Yes: No: X Depth of standing water: NA

Depth to saturated soil: &gt; 1.3 m (50 in)

Overview of hydrological flow through the system: This site is hydrologically influenced by precipitation, sheet flow, and overflow from the Sangamon River. Water leaves the site via evapotranspiration and groundwater recharge.

Size of watershed: approximately 3279 km<sup>2</sup> (1266 mi<sup>2</sup>)

Other field evidence observed: The site is found in a depressional area.

Wetland hydrology: Yes: X No:

Rationale: Well data collected by the ISGS substantiated that this site had greater than 5% but less than 12.5% wetland hydrology during the growing season this year, and therefore, may satisfy the wetland hydrology criteria.

**DETERMINATION AND RATIONALE:**

Is the site a wetland? Yes: X No:

Rationale for decision: This site has dominant hydrophytic vegetation, hydric soils, and may possess wetland hydrology. Thus, we determined that this site is a wetland. The NWI did not code this site as a wetland.

## ROUTINE ON-SITE WETLAND DETERMINATION

Wetland 1 (page 3 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: SW/4, NW/4, Section 9 T. 15N., R. 3W.

Location: 9 m (30 ft) west of Young Road and 354 m (1160 ft) north of the Sangamon River

### SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	CC*
<i>Acer saccharinum</i>	silver maple	herb	FACW	1
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Asclepias incarnata</i>	swamp milkweed	herb	OBL	4
<i>Aster pilosus</i>	hairy aster	herb	FACU-	0
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Betula nigra</i>	red birch	sapling, shrub (planted)	FACW	4
<i>Campsis radicans</i>	trumpet creeper	herb	FAC	2
<i>Carya illinoensis</i>	pecan	sapling, shrub (planted)	FACW	6
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1
<i>Digitaria sanguinalis</i>	hairy crab grass	herb	FACU	**
<i>Echinochloa crus-galli</i>	barnyard grass	herb	FACW	**
<i>Festuca pratensis</i>	fescue	herb	FACU-	**
<i>Fraxinus pennsylvanica</i>	green ash	herb, (sapling, shrub (planted))	FACW	2
<i>Iva annua</i>	marsh elder	herb	FAC	0
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	**
<i>Physalis subglabrata</i>	smooth ground cherry	herb	UPL	0
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Polygonum persicaria</i>	spotted lady's thumb	herb	FACW	**
<i>Quercus bicolor</i>	swamp white oak	sapling, shrub (planted)	FACW+	7
<i>Quercus palustris</i>	pin oak	sapling, shrub (planted)	FACW	4
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	**
<i>Saponaria officinalis</i>	bouncing bet	herb	FACU	**
<i>Setaria glauca</i>	pigeon grass	herb	FAC	**
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1

\* Coefficient of Conservatism (Taft et al. 1997)

\*\* Non-native species

FQI =  $17/\sqrt{14} = 17/3.7 = 4.6$  (without planted species)

Mean-rated quality =  $17/14 = 1.2$  (without planted species)

FQI =  $38/\sqrt{18} = 38/4.2 = 9.0$  (with planted species)

Mean-rated quality =  $38/18 = 2.1$  (with planted species)

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 1 (page 4 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: SW/4, NW/4, Section 9 T. 15N., R. 3W.

Location: 9 m (30 ft) west of Young Road and 354 m (1160 ft) north of the  
Sangamon River

Determined by: Dennis J. Keene (soils and hydrology)  
Paul Tessene and Rick Larimore (vegetation  
and hydrology)  
Illinois Natural History Survey  
1816 South Oak St.  
Champaign, Illinois 61820  
(217) 244-0873 (Keene)

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 2A (page 1 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 98 m (320 ft) southeast of Young Road and 40 m (130 ft) north of the Sangamon River

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

**VEGETATION**

Dominant Plant Species

Indicator Status

Stratum

*Phyla lanceolata*

OBL

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 (scraped excavated area)

On Sangamon County hydric soils list? Yes: X No: Undet: X

Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X

Redox concentrations: Yes: X No: Redox depletions: Yes: X No:

Matrix color: 2.5Y 5/1 and 5/2, N 4/

Other indicators: This soil is found in a depressional area.

Hydric soils: Yes: X No:

Rationale: This soil has pore linings, iron masses, and an iron depleted matrix. These characteristics are evidence of a hydric soil.

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 2A (page 2 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 98 m (320 ft) southeast of Young Road and 40 m (130 ft) north of the Sangamon River

**HYDROLOGY**

Inundated: Yes: No: X Depth of standing water: NA

Depth to saturated soil: &gt; 50 in (1.3 m)

Overview of hydrological flow through the system: This site is hydrologically influenced by precipitation, overflow from the Sangamon River, and sheet flow from higher surrounding areas. Water leaves the site via evapotranspiration and groundwater recharge.

Size of watershed: approximately 3279 km<sup>2</sup> (1266 mi<sup>2</sup>)

Other field evidence observed: This site is found in a low area.

Wetland hydrology: Yes: X No:

Rationale: Well data collected by the ISGS substantiated that this site had greater than 5% but less than 12.5% wetland hydrology during the growing season this year, and therefore, may satisfy the wetland hydrology criteria.

**DETERMINATION AND RATIONALE:**

Is the site a wetland? Yes: X No:

Rationale for decision: This site has dominant hydrophytic vegetation, hydric soils, and may possess wetland hydrology. Thus, we determined that this site is a wetland. The NWI did not code this site as a wetland.

## ROUTINE ON-SITE WETLAND DETERMINATION

Site 2A (page 3 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 98 m (320 ft) southeast of Young Road and 40 m (130 ft) north of the Sangamon River

### SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	CC*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Apocynum sibiricum</i>	Indian hemp	herb	FAC+	2
<i>Asclepias incarnata</i>	swamp milkweed	herb	OBL	4
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Campsis radicans</i>	trumpet creeper	herb	FAC	2
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Commelina diffusa</i>	day flower	herb	FACW	3
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1
<i>Cyperus esculentus</i>	chufa	herb	FACW	0
<i>Echinochloa crus-galli</i>	barnyard grass	herb	FACW	**
<i>Eupatorium serotinum</i>	late boneset	herb	FAC+	1
<i>Fraxinus pennsylvanica</i>	green ash	herb	FACW	2
<i>Hibiscus laevis</i>	halberd-leaved rose mallow	herb	OBL	4
<i>Mollugo verticillata</i>	carpetweed	herb	FAC	**
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	**
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Polygonum cespitosum longisetum</i>	creeping smartweed	herb	UPL	**
<i>Polygonum hydropiperoides</i>	mild water pepper	herb	OBL	4
<i>Polygonum lapathifolium</i>	curttop lady's thumb	herb	FACW+	0
<i>Polygonum pennsylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	**
<i>Salix exigua</i>	sandbar willow	herb	OBL	1
<i>Salix nigra</i>	black willow	herb	OBL	3
<i>Sida spinosa</i>	prickly sida	herb	FACU	**
<i>Spermacoce glabra</i>	smooth buttonweed	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

FQI =  $41/\sqrt{24} = 41/4.9 = 8.4$

Mean-rated quality =  $41/24 = 1.7$

**ROUTINE ON-SITE WETLAND DETERMINATION**

Site 2A (page 4 of 4)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 98 m (320 ft) southeast of Young Road and 40 m (130 ft) north of the Sangamon River

Determined by: Dennis J. Keene (soils and hydrology)  
Paul Tessene and Rick Larimore (vegetation  
and hydrology)  
Illinois Natural History Survey  
1816 S. Oak St.  
Champaign, Illinois 61820  
(217) 244-0873 (Keene)

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 2B (page 1 of 3)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 40 m (130 ft) southeast of Young Road and 30 m (100 ft) north of the Sangamon River

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

**VEGETATION**

Dominant Plant Species	Indicator Status	Stratum
1. <i>Amaranthus tuberculatus</i>	OBL	herb
2. <i>Polygonum pensylvanicum</i>	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 (scraped excavated area)

On Sangamon County hydric soils list? Yes: X No: Undet: X

Is the soil a histosol? Yes: No: X Histic epipedon present? Yes: No: X

Redox concentrations: Yes: X No: Redox depletions: Yes: X No:

Matrix color: 2.5Y 6/1 and 4/1

Other indicators: This soil is found in a depressional area.

Hydric soils: Yes: X No:

Rationale: This soil has pore linings, iron masses, and an iron depleted matrix. These characteristics are evidence of a hydric soil.

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 2B (page 2 of 3)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 40 m (130 ft) southeast of Young Road and 30 m (100 ft) north of the Sangamon River

**HYDROLOGY**

Inundated: Yes: No: X

Depth of standing water: NA

Depth to saturated soil: &gt; 50 in (1.3 m)

Overview of hydrological flow through the system: This site is hydrologically influenced by precipitation, overflow from the Sangamon River, and sheet flow from higher surrounding areas. Water leaves the site via evapotranspiration and groundwater recharge.

Size of watershed: approximately 3279 km<sup>2</sup> (1266 mi<sup>2</sup>)

Other field evidence observed: This site is found in a low area.

Wetland hydrology: Yes: X No:

Rationale: Low topography and well data collected by the ISGS substantiates that this site is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

**DETERMINATION AND RATIONALE:**

Is the site a wetland? Yes: X No:

Rationale for decision: Based on the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology, we determined that this site is a wetland. The NWI did not code this site as a wetland.

**ROUTINE ON-SITE WETLAND DETERMINATION**

Wetland 2B (page 3 of 3)

Field Investigators: Keene, Larimore, and Tessene

Date: 26 September 2006

Job No.: NA

Project Name: FAS 1637 (TR 478)

State: Illinois

County: Sangamon

Applicant: IDOT District 6

Site Name: Wet meadow/Forest restoration

Legal Description: NW/4, SW/4, Section 9 T. 15N., R. 3W.

Location: 40 m (130 ft) southeast of Young Road and 30 m (100 ft) north of the Sangamon River

**SPECIES LIST**

Scientific name	Common name	Stratum	Wetland indicator status	CC*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Barbarea vulgaris</i>	winter cress	herb	FAC	**
<i>Celtis occidentalis</i>	hackberry	tree	FAC-	3
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Cyperus acuminatus</i>	taperleaf flat sedge	herb	OBL	2
<i>Cyperus esculentus</i>	chufa	herb	FACW	0
<i>Echinochloa crus-galli</i>	barnyard grass	herb	FACW	**
<i>Hibiscus laevis</i>	halberd-leaved rose mallow	herb	OBL	4
<i>Leucospora multifida</i>	---	herb	FACW+	3
<i>Lindernia dubia</i>	false pimpernel	herb	OBL	5
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	**
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rumex crispus</i>	curly dock	herb	FAC+	**
<i>Sonchus asper</i>	prickly sowthistle	herb	FAC	**
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

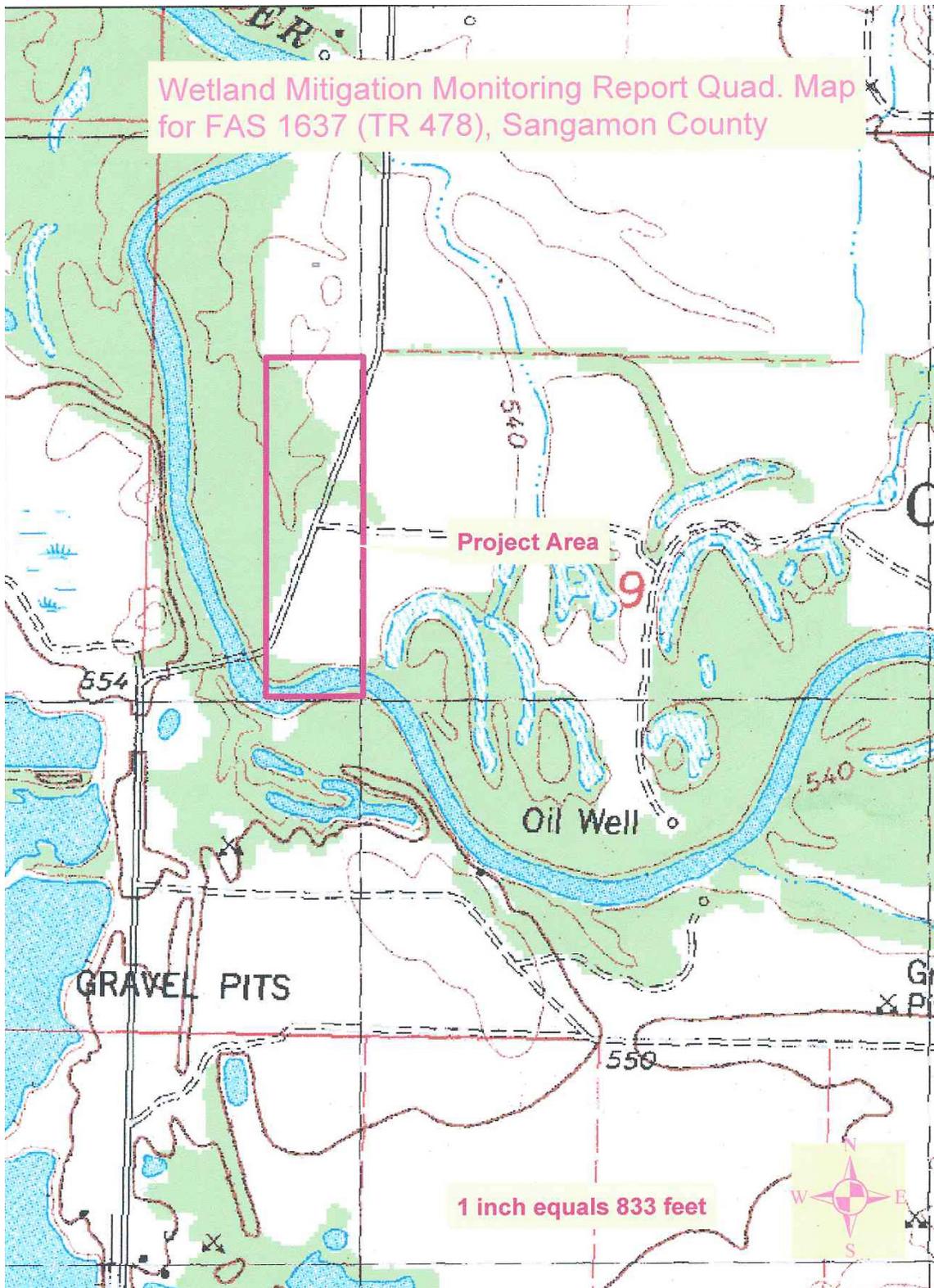
\* Coefficient of Conservatism (Taft et al. 1997)

\*\* Non-native species

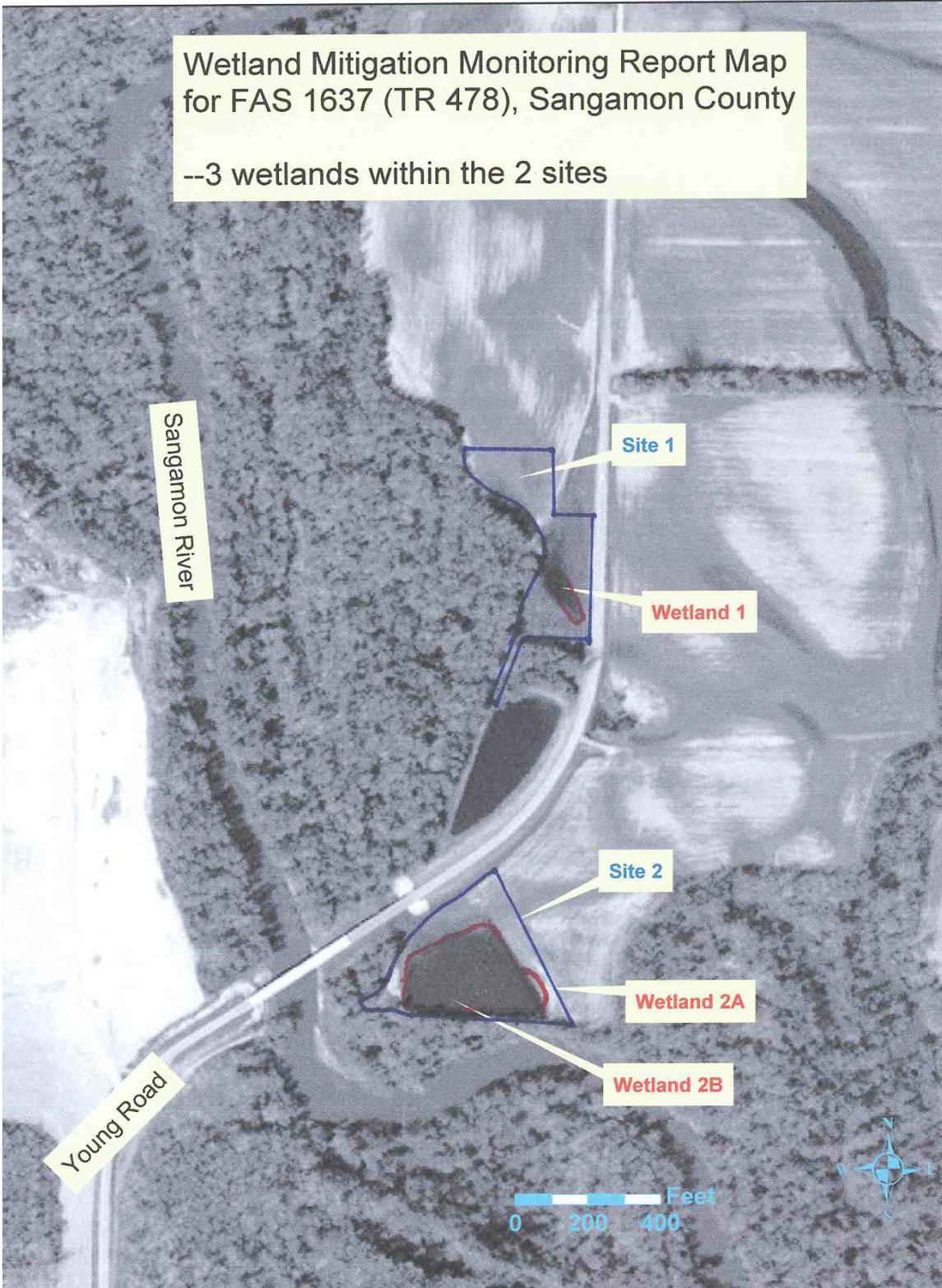
FQI =  $27/\sqrt{14} = 27/3.7 = 7.3$ Mean-rated quality =  $27/14 = 1.9$ 

Determined by: Dennis J. Keene (soils and hydrology)  
 Paul Tessene and Rick Larimore (vegetation  
 and hydrology)  
 Illinois Natural History Survey  
 1816 S. Oak St.  
 Champaign, Illinois 61820  
 (217) 244-0873 (Keene)

Wetland Mitigation Monitoring Report Quad. Map  
for FAS 1637 (TR 478), Sangamon County



Wetland Mitigation Monitoring Report Map  
for FAS 1637 (TR 478), Sangamon County  
--3 wetlands within the 2 sites





Appendix 2:  
Wetland Mitigation Monitoring Photos for  
FAS 1637 (TR 478)



Photo of Site 1, facing north



Photo of Site 1, facing north



Photo of site 2, facing southeast



Photo of site 2, facing southwest on old road bed