

**TRANSMITTAL**

To: Bureau of Design and Environment  
Attention: Matthew J. Sunderland  
From: Illinois Natural History Survey  
Regarding: Wetland Mitigation Monitoring

**Title and Location**

Title: IL 336 (FAP 315)  
Location: Near the LaMoine River  
Project Number: D-96-551-02  
Sequence Number: 72680  
Section Number: 34-4 (4B, B-1)  
County: Hancock  
IDOT District: District 6

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**Date Conducted:** August 18 and 19, 2009

**Project Summary:**

For the third year we monitored the site created for wetland impact mitigation for FAP 315 (IL 336/US 136), LaMoine River site in Hancock County. The site was completed and all trees planted by spring 2007. The attached report includes information detailing monitoring methods and results. The status of the created wetland site is discussed. The areas discussed are marked on the DOQ included with this report.

Signed:   
Dr. Allen E. Plocher  
INHS/IDOT Project Coordinator  
and Principal Investigator

Date: January 26, 2010

# WETLAND MITIGATION SITE MONITORING REPORT

## FAP 315 (IL 336) Hancock County – LaMoine River Site

### Introduction

This report details monitoring of the wetland mitigation site created to compensate for impacts associated with FAP 315 (IL 336) in Hancock County. The LaMoine River site consists of approximately 13.8 ha (34 ac) of wetland creation/restoration (IDOT 2006b). The wetland creation site is located approximately 8.8 km (5.5 mi) east of Carthage, IL, near the crossing of IL 336 over the LaMoine River. The legal location is SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W. The project area lies within the United States Geological Survey Mississippi River hydrologic unit 07130010, LaMoine River. The site was completed and all trees planted by spring 2007. On-site monitoring was conducted on August 18 and 19, 2009.

This report discusses the goals, objectives, and performance criteria for the mitigation project, the methods used for monitoring the site, monitoring results, and 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 typically used in INHS determinations of mitigation sites. Performance criteria are based on those specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Illinois Wetland Restoration and Creation Guide* (Admiraal et al. 1997), and in *Guidelines for Developing Mitigation Proposals* (USACE 1993). Each goal should be attained by the end of the 5-year monitoring period. Goals, objectives, and performance criteria are listed below.

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

**Objective:** The created wetland should compensate for the loss of wetland acreage.

**Performance criteria:**

- a. Predominance of hydrophytic vegetation: More than 50% of the dominant plant species must be hydrophytic.
- b. Occurrence of hydric soils: Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist at the site.
- c. Presence of wetland hydrology: The area must be either permanently or periodically inundated at average depths less than 2 m (6.6 ft) or have soils that are saturated to the surface for at least 12.5% of the growing season.

**Project goal 2:** The created wetland plant community should meet standards for planted species survival and floristic composition.

**Objectives:** Planting trees will create a forested wetland. Other herbaceous vegetation will be allowed to colonize the site naturally.

**Performance criteria:**

- a. Planted species survivorship: At least 80% of the planted trees should be established and living by the end of the five year monitoring period.
- b. Native species composition: At least 90% of the plants present should be non-weedy, native, perennial species.
- c. Dominance of vegetation: None of the three most dominant plant species may be non-native or weedy species, such as cattails, sandbar willow, or reed canary grass.

**Methods****Project goal 1****a. Predominance of hydrophytic vegetation**

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

**b. 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.

**c. Presence of wetland hydrology**

The extent of wetland hydrology at the Hancock County, Carthage Potential Wetland Compensation Site was monitored by the Illinois State Geological Survey and is shown on the accompanying figure (Fucciolo et al. 2009). Wetland hydrology occurs when inundation or saturation to land surface is present for greater than 5% of the growing season (10 days at this site). To be a wetland, where the soils and vegetation parameters in the Corps of Engineers Wetland Delineation Manual also are met, 5% hydrology is sufficient; if either is lacking, then inundation or saturation must be present for greater than 12.5% of the growing season (25 days at this site) to satisfy wetland hydrology criteria (Environmental Laboratory 1987). Inundation and saturation at the site were monitored using a combination of monitoring wells and 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 dataloggers, which measure surface-water levels at regular intervals to document all hydrologic events. Additional details regarding site conditions and monitoring results for wetland hydrology in 2009 are summarized in ISGS' Annual Report for Active IDOT Wetland Compensation and Hydrologic Monitoring Sites, September 1, 2008 to September 1, 2009 (Fucciolo et al. 2009).

## Project goal 2

### a. Planted species survivorship

In order to create floodplain forest, tree saplings were planted at the compensation site. The number of trees to be planted at the site (IDOT, 2006b) is listed in Table 1, which follows:

Table 1. Tree species planted in the created wetland (Final planting date spring 2007).

| Species                       | Common Name     | Number |
|-------------------------------|-----------------|--------|
| <i>Carya illinoensis</i>      | Pecan           | 250    |
| <i>Fraxinus pennsylvanica</i> | Green ash       | 250    |
| <i>Platanus occidentalis</i>  | Sycamore        | 250    |
| <i>Quercus bicolor</i>        | Swamp white oak | 250    |
| <i>Quercus palustris</i>      | Pin oak         | 248    |
| TOTAL                         |                 | 1248   |

All of the trees were to be 5 gallon containerized trees. Survivorship and density of planted trees was determined through a census of the created wetland. All live trees were counted. Dead trees were counted but not identified by species. Tree survival was calculated as a percentage of the number of stems reported to have been planted:  $100 \times (\text{Total number of live planted stems counted} / \text{total number of planted stems reported})$ .

### b. Native Species Composition

A complete list of plant species present was compiled. This was used to determine the number and percentage of species present that are non-weedy, native, perennials.

In each designated herbaceous plant community (sedge meadow, wet meadow, marsh) vegetation was quantitatively sampled. Parallel transects were established on a north (N) bearing at 50 m intervals. Sample points (37) were located at 25 m intervals along each transect. Vegetation was recorded by species and percent cover within 1 m<sup>2</sup> quadrats at each sample point. Within each community, Importance Value was calculated as an average of relative frequency and relative cover for each species present.

In addition, the Floristic Quality Assessment (Taft et al. 1997) was applied to the plant community at the site to evaluate floristic quality and nativity. The assessment methodology is used to identify natural areas and facilitate floristic comparisons among sites. This technique is part of the procedure for the long-term monitoring of natural areas and the monitoring of restored or created wetlands (Swink and Wilhelm 1994). The basis of the method is that each native plant species is assigned a conservatism coefficient (C) ranging from 0 to 10. Individual conservatism coefficients are ranks of species behavior and reflect the committee's (Taft et al. 1997) confidence level for a taxon's correspondence to anthropogenic disturbances. Coefficient values range from 0 to 10, with all adventive species given a coefficient of 0. Plant species assigned 0 have low affinities for natural areas, whereas those assigned 10 have very high affinities. When a complete species list is assembled for a wetland site, the overall average conservatism coefficient ( $\bar{c}$ ) and a site floristic quality index (FQI) can be calculated. The  $\bar{c}$  is calculated by summing the coefficients of conservatism ( $\Sigma C$ ) and dividing by the total number of native species (N). The FQI is then calculated by dividing the  $\Sigma C$  by the square root of N. These values provide a measure of site floristic quality. Floristic quality index (FQI) values less than 5 indicate that the area is extremely weedy or in an early successional stage

(Swink and Wilhelm 1994). FQI values between 20 and 35 ( $\bar{c} = 3.0$ ) indicate that the area has evidence of native character and can be considered an environmental asset. FQI values between 35 and 50 ( $\bar{c} = 3.5$ ) indicate that the area has significant native character.

c. Dominance of vegetation

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

Photography stations were established in areas chosen to give maximum representation of the site. Locations of the photography stations can be seen in Figure 1 (page 6). Photographs were taken from the permanent photography stations established in 2007 and are in Appendix B of this report.

## Results

### Project goal 1

a. Predominance of hydrophytic vegetation

At all areas within this site, except the upland buffer tree planting area, a majority of dominant plant species for the mitigation site in 2009 were rated OBL, FACW, FAC+, or FAC and were hydrophytic. Four areas had 100% of the dominants being hydrophytic and one area had 83%; all of which meet the minimum project goal of >50%. The upland buffer tree planting had 33% of the dominants being hydrophytic, and therefore did not meet the minimum project goal of >50%. Dominant species lists for each area can be found within the routine onsite wetland determination forms located in Appendix A of this report.

b. Occurrence of hydric soils

Soils examined at the site were found to be relatively undisturbed with the exception of the marsh. Hydric soil indicators are present within the sedge meadow, wet meadow, marsh, and most of the north tree planting area; these areas therefore met the hydric soil criterion. A portion of the north tree planting area, and both the south and upland buffer tree planting areas lacked hydric soil indicators and therefore do not meet the hydric soil criterion. A typical soil profile description for each area can be found within the routine onsite wetland determination forms located in Appendix A of this report.

c. Presence of wetland hydrology

The ISGS estimated that “the area of the site that satisfied wetland hydrology criteria for more than 12.5% of the 2009 growing season was estimated to be 14.9 ha (36.9 ac) out of an area of 17.9 ha (44.3 ac)” (Figure 2, page 7) (Fucciolo, et al. 2009). More information is available in the *Hancock County near Carthage, Wetland Compensation Site* report (ibid). At this time we estimate that 14.9 ha (36.9 ac) of the site currently has wetland hydrology.

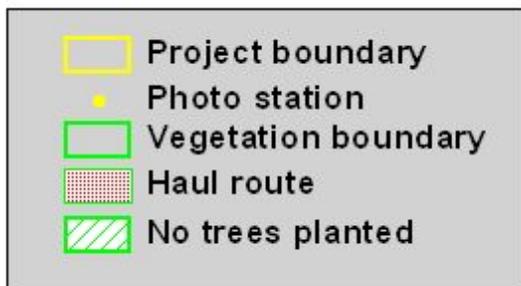
# LaMoine River Mitigation Site (FAP 315) Hancock County, Illinois



0 400 800 Feet

scale 1:4800  
1 inch=400 ft

0 100 200 Meters



01/08

Figure 1. Site, photostation locations, and vegetation community boundaries.

**Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)**  
**Estimated Areal Extent of 2009 Wetland Hydrology**

September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle  
 produced from 2005 aerial photography (ISGS 2005)

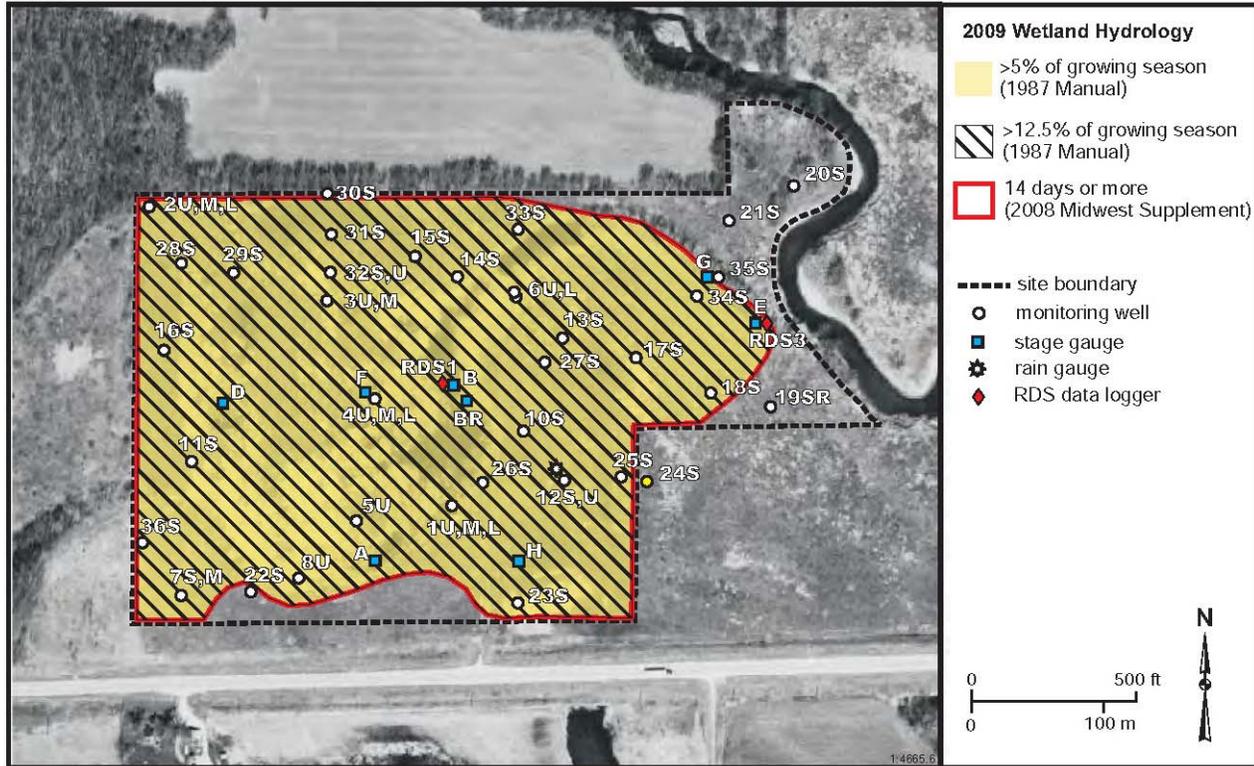


Figure 2. “Estimated Areal Extent of 2009 Wetland Hydrology” (Fucciolo, et al. 2009).

**Project goal 2**

a. Planted species survivorship

Table 2 shows the results of the census. There was again a minor discrepancy between the numbers of trees reported as planted and the number of trees counted, as we counted 108 trees fewer than were reported as planted. There were many gaps in the rows where trees had been previously, but since there was no longer anything to count, these spots were not counted as dead trees. Table 2 also shows the percent survival for the trees. These figures were calculated both by species and overall for all species in the entire site. About 89% of the total trees reported planted were counted as surviving. This exceeds the project goal of >80%.

Table 2. Number of trees counted and percent tree survival (by species).

| Species                       | Common Name        | Number Planted | Number Counted | % Survival. |
|-------------------------------|--------------------|----------------|----------------|-------------|
| <i>Carya illinoensis</i>      | Pecan              | 250            | 225            | 90.0        |
| <i>Fraxinus pennsylvanica</i> | Green ash          | 250            | 239            | 95.6        |
| <i>Platanus occidentalis</i>  | Sycamore           | 250            | 195            | 78.0        |
| <i>Quercus palustris</i>      | Pin oak            | 248            | 224            | 90.3        |
| <i>Quercus bicolor</i>        | Swamp white oak    | 250            | 228            | 91.2        |
| Spp.                          | Miscellaneous dead | -              | 29             | x           |
| TOTAL                         |                    | 1248           | 1140           | 89.0        |

b. Native species composition

Table 3 below shows the percentage non-weedy, native species for each area of this site.

Therefore, none of the areas meet the requirement for native species composition (>90%). This calculation does not take into account whether a species is annual or perennial, but the numbers would obviously be lower if we excluded all annual species as well as the non-native and weedy species. It is normal, however, for a site to begin very weedy and develop more native character over time, so this site may be expected to increase in native species composition over time.

However, this goal seems unrealistically high, as many natural area quality sites would likely not meet this level of 90% of species native, non-weedy, and perennial.

Table 3. Percentage non-weedy, native species, by year and area of site.

| Area<br>Year | Sedge Meadow | Wet Meadow | Marsh | North tree planting | South tree planting | Upland buffer tree planting |
|--------------|--------------|------------|-------|---------------------|---------------------|-----------------------------|
| 2007         | 50.0         | 45.8       | 56.0  | 55.4                | 16.7                | 38.7                        |
| 2008         | 52.4         | 69.0       | 64.0  | 45.1                | 27.3                | 47.9                        |
| 2009         | 54.5         | 58.1       | 74.2  | 56.3                | 40.4                | 47.6                        |

FQI and mean  $\bar{c}$  values were also calculated for this site from the species lists included in Appendix A. These values are displayed in Table 4 below.

Table 4. FQI and  $\bar{c}$  values, by year and area of site.

| Year | Sedge Meadow |           | Wet Meadow |           | Marsh |           | North tree planting |           | South tree planting |           | Upland buffer tree planting |           |
|------|--------------|-----------|------------|-----------|-------|-----------|---------------------|-----------|---------------------|-----------|-----------------------------|-----------|
|      | FQI          | $\bar{c}$ | FQI        | $\bar{c}$ | FQI   | $\bar{c}$ | FQI                 | $\bar{c}$ | FQI                 | $\bar{c}$ | FQI                         | $\bar{c}$ |
| 2007 | 13.9         | 2.0       | 14.7       | 2.1       | 11.6  | 2.6       | 17.4                | 2.2       | 8.0                 | 1.6       | 12.3                        | 1.8       |
| 2008 | 20.2         | 2.4       | 20.9       | 2.4       | 12.8  | 2.7       | 14.3                | 1.9       | 8.0                 | 1.5       | 20.8                        | 2.5       |
| 2009 | 17.7         | 2.4       | 17.5       | 2.2       | 16.6  | 3.1       | 21.0                | 2.3       | 13.2                | 2.2       | 20.0                        | 2.5       |

These values indicate that the north tree planting area and upland buffer tree planting area are of good natural quality, and all other areas are of fair natural quality. These values should generally continue to increase over time in each of the areas, as higher quality vegetation becomes established.

c. Dominance of vegetation

Quantitative vegetation sampling was conducted in the sedge meadow, wet meadow, and marsh communities. In the sedge meadow, dominant species were *Bidens aristosa*, *Carex* sp., *Aster simplex*, *Geum laciniatum*, *Lycopus americanus*, *Ambrosia artemisiifolia*, and *Carex tribuloides* (Table 5, page 10). *Phalaris arundinacea* dominated the wet meadow (Table 6, page 11). In the marsh, dominant species were *Alisma plantago-aquatica*, *Phalaris arundinacea*, and *Lemna minor* (Table 7, page 11).

Based on visual estimation, dominant species in the north tree planting area were *Agrostis alba*, *Echinochloa muricata*, and *Phalaris arundinacea*. *Agrostis alba*, *Phalaris arundinacea*, and *Rumex crispus* dominated in the south tree planting area. The upland buffer tree planting area was dominated by *Agrostis alba*, *Poa pratensis*, and *Solidago canadensis*. In all of the communities at least one of the three most dominant species is non-native or weedy native. At this time none of the areas meet the performance criteria for dominance of vegetation.

Table 5. Understory species composition of Sedge Meadow (Site 1). Frequency, Relative Frequency, Cover (m<sup>2</sup>/m<sup>2</sup>), Relative Cover, Importance Value (%), N=7.

| Species                         | Cover  | Relative Cover | Frequency | Relative Frequency | IV     |
|---------------------------------|--------|----------------|-----------|--------------------|--------|
| <i>Bidens aristosa</i>          | 36.86  | 27.64          | 1.00      | 8.14               | 17.89  |
| <i>Carex</i> sp.                | 13.93  | 10.44          | 0.71      | 5.81               | 8.13   |
| <i>Aster simplex</i>            | 6.00   | 4.50           | 0.86      | 6.98               | 5.74   |
| <i>Geum laciniatum</i>          | 8.57   | 6.43           | 0.57      | 4.65               | 5.54   |
| <i>Lycopus americanus</i>       | 5.57   | 4.18           | 0.71      | 5.81               | 5.00   |
| <i>Ambrosia artemisiifolia</i>  | 3.86   | 2.89           | 0.71      | 5.81               | 4.35   |
| <i>Carex tribuloides</i>        | 5.14   | 3.86           | 0.57      | 4.65               | 4.25   |
| <i>Lythrum alatum</i>           | 4.71   | 3.54           | 0.43      | 3.49               | 3.51   |
| <i>Poa pratensis</i>            | 4.71   | 3.54           | 0.43      | 3.49               | 3.51   |
| <i>Carex vulpinoidea</i>        | 3.00   | 2.25           | 0.43      | 3.49               | 2.87   |
| <i>Juncus dudleyi</i>           | 3.00   | 2.25           | 0.43      | 3.49               | 2.87   |
| <i>Solidago canadensis</i>      | 3.00   | 2.25           | 0.43      | 3.49               | 2.87   |
| <i>Hypericum punctatum</i>      | 2.64   | 1.98           | 0.43      | 3.49               | 2.74   |
| <i>Acalypha rhomboidea</i>      | 1.00   | 0.75           | 0.57      | 4.65               | 2.70   |
| <i>Lysimachia nummularia</i>    | 5.36   | 4.02           | 0.14      | 1.16               | 2.59   |
| <i>Scirpus atrovirens</i>       | 5.36   | 4.02           | 0.14      | 1.16               | 2.59   |
| <i>Agrimonia parviflora</i>     | 2.57   | 1.93           | 0.29      | 2.33               | 2.13   |
| <i>Echinochloa muricata</i>     | 0.86   | 0.64           | 0.29      | 2.33               | 1.48   |
| <i>Fragaria virginiana</i>      | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Helenium autumnale</i>       | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Helianthus tuberosa</i>      | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Leersia oryzoides</i>        | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Lycopus virginicus</i>       | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Phalaris arundinacea</i>     | 2.14   | 1.61           | 0.14      | 1.16               | 1.38   |
| <i>Carex grayi</i>              | 0.50   | 0.37           | 0.29      | 2.33               | 1.35   |
| <i>Ulmus americana</i>          | 0.14   | 0.11           | 0.29      | 2.33               | 1.22   |
| <i>Carex cristatella</i>        | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Elymus virginicus</i>        | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Eupatorium serotinum</i>     | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Medicago sativa</i>          | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Prunella vulgaris</i>        | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Rumex crispus</i>            | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Sorghastrum nutans</i>       | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Trifolium repens</i>         | 0.43   | 0.32           | 0.14      | 1.16               | 0.74   |
| <i>Apocynum cannabinum</i>      | 0.07   | 0.05           | 0.14      | 1.16               | 0.61   |
| <i>Physalis subglabrata</i>     | 0.07   | 0.05           | 0.14      | 1.16               | 0.61   |
| <i>Polygonum pennsylvanicum</i> | 0.07   | 0.05           | 0.14      | 1.16               | 0.61   |
| <i>Polygonum</i> sp.            | 0.07   | 0.05           | 0.14      | 1.16               | 0.61   |
| Total                           | 133.36 | 100.00         | 12.29     | 100.00             | 100.00 |

Table 6. Understory species composition of Wet Meadow (Site 2). Frequency, Relative Frequency, Cover (m<sup>2</sup>/m<sup>2</sup>), Relative Cover, Importance Value (%), N=25.

| Species                         | Cover  | Relative Cover | Frequency | Relative Frequency | IV     |
|---------------------------------|--------|----------------|-----------|--------------------|--------|
| <i>Phalaris arundinacea</i>     | 83.50  | 83.27          | 0.96      | 54.55              | 68.91  |
| <i>Scirpus fluviatilis</i>      | 6.22   | 6.20           | 0.20      | 11.36              | 8.78   |
| <i>Alisma plantago-aquatica</i> | 2.22   | 2.21           | 0.12      | 6.82               | 4.52   |
| <i>Polygonum amphibium</i>      | 3.40   | 3.39           | 0.04      | 2.27               | 2.83   |
| <i>Solidago canadensis</i>      | 0.62   | 0.62           | 0.08      | 4.55               | 2.58   |
| <i>Leersia oryzoides</i>        | 1.50   | 1.50           | 0.04      | 2.27               | 1.88   |
| <i>Penthorum sedoides</i>       | 1.50   | 1.50           | 0.04      | 2.27               | 1.88   |
| <i>Carex</i> sp.                | 0.60   | 0.60           | 0.04      | 2.27               | 1.44   |
| <i>Asclepias syriaca</i>        | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| <i>Calystegia sepium</i>        | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| <i>Cicuta maculata</i>          | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| <i>Eleocharis erythropoda</i>   | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| <i>Polygonum pensylvanicum</i>  | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| <i>Xanthium strumarium</i>      | 0.12   | 0.12           | 0.04      | 2.27               | 1.20   |
| Total                           | 100.28 | 100.00         | 1.76      | 100.00             | 100.00 |

Table 7. Understory species composition of Marsh (Site 3). Frequency, Relative Frequency, Cover (m<sup>2</sup>/m<sup>2</sup>), Relative Cover, Importance Value (%), N = 5.

| Species                         | Cover | Relative Cover | Frequency | Relative Frequency | IV     |
|---------------------------------|-------|----------------|-----------|--------------------|--------|
| <i>Alisma plantago-aquatica</i> | 38.00 | 38.15          | 1.00      | 23.81              | 30.98  |
| <i>Phalaris arundinacea</i>     | 14.10 | 14.16          | 0.80      | 19.05              | 16.60  |
| <i>Lemna minor</i>              | 9.60  | 9.64           | 0.80      | 19.05              | 14.34  |
| <i>Eleocharis obtusa</i>        | 13.10 | 13.15          | 0.40      | 9.52               | 11.34  |
| <i>Leersia oryzoides</i>        | 12.50 | 12.55          | 0.20      | 4.76               | 8.66   |
| <i>Ludwigia alternifolia</i>    | 3.60  | 3.61           | 0.40      | 9.52               | 6.57   |
| <i>Scirpus fluviatilis</i>      | 7.50  | 7.53           | 0.20      | 4.76               | 6.15   |
| <i>Bidens connata</i>           | 0.60  | 0.60           | 0.20      | 4.76               | 2.68   |
| <i>Eleocharis macrostachya</i>  | 0.60  | 0.60           | 0.20      | 4.76               | 2.68   |
| Total                           | 99.60 | 100.00         | 4.20      | 100.00             | 100.00 |

### Discussion

After this second monitoring season, this site shows some progress toward forested wetland establishment. All standards for Project Goal 1 have been met at three areas, as these areas (sedge meadow, wet meadow, and marsh) are jurisdictional wetlands. Most of the north tree planting area also meets the jurisdictional wetland criterion. Although the upland buffer and south tree planting areas met the 12.5% level of wetland hydrology, and the south tree planting area met the hydrophytic vegetation criteria this year, there is little evidence that they will develop hydric soils and lasting wetland hydrology to comply with this goal in the future. No areas have met all of the standards for Project Goal 2, although as the vegetative succession proceeds, this site may comply with that goal by the end of the monitoring period. The performance criterion for native species composition is probably unrealistically high, and will likely not be met at this site. The presence

of the aggressive, weedy, non-native *Phalaris arundinacea* across this site is a concern, and it may need to be controlled in order to meet the standards for Project Goal 2.

While the vegetation is hydrophytic at the sedge meadow, wet meadow, marsh, north tree planting area, and south tree planting area, at no area does it meet the dominance criteria for native non-weedy species or the dominance of vegetation requirement. The planted trees exhibited excellent survival, and should meet the planted species performance criteria at the end of the monitoring period. There are still a large number of species at each site that have very low coefficients of conservatism (C). This is common on disturbed and early successional sites and is not a cause for concern at this time. It is likely that as succession progresses, more conservative species will become established on the site.

Currently, the primary concerns for this site are establishing non-weedy, native dominant hydrophytic vegetation at all areas, and establishing hydric soils and lasting wetland hydrology at the south tree planting area.

All of the wet meadow, sedge meadow, and marsh, and most of the north tree planting area satisfy the wetland criteria; therefore, current wetland acreage at this site is estimated to be approximately 24.3 ac (9.8 ha), corresponding to that area determined in 2008 by the ISGS to possess wetland hydrology for more than 12.5% of the growing season. This is the same areal estimate used in 2008, as most of the additional area which had wetland hydrology in 2009 does not have hydric soil. This estimate will be refined in future years as more hydrologic data is gathered.

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## **Appendix A**

### **Wetland Determination Forms**

## ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 1 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Sedge meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland is located along the western edge of the site.

Do normal environmental conditions exist at this area? Yes:  No:

Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No:

### VEGETATION

| Dominant Plant Species            | Stratum | Indicator Status |
|-----------------------------------|---------|------------------|
| 1. <i>Aster simplex</i>           | Herb    | FACW             |
| 2. <i>Ambrosia artemisiifolia</i> | Herb    | FACU             |
| 3. <i>Bidens aristosa</i>         | Herb    | FACW             |
| 4. <i>Carex sp.</i>               | Herb    | ---              |
| 5. <i>Carex tribuloides</i>       | Herb    | FACW+            |
| 6. <i>Geum laciniatum</i>         | Herb    | FACW             |
| 7. <i>Lycopus americanus</i>      | Herb    | OBL              |

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 83%

**Hydrophytic vegetation:** Yes:  No:

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

### SOILS

Series and phase: NRCS mapped as Sawmill silty clay loam;  
revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list? Yes:  No:

Is the soil a histosol? Yes: No:

Histic epipedon present? Yes: No:

Redox Concentrations? Yes:  No: Color: 10YR 5/4 and 5/6

Redox Depletions? Yes:  No: Color: N 5/

Matrix color: 10YR 3.5/1

Other indicators: None.

**Hydric soils?** Yes:  No:

**Rationale:** The Natural Resources Conservation Service identifies Birds silt loam as a Typic Fluvaquent which is poorly drained. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 2 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Sedge meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland is located along the western edge of the site.

### HYDROLOGY

Inundated: Yes:            No: X

Depth of standing water: N/A

Depth to saturated soil: >0.10 m (4 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, sheet flow from surrounding uplands, some directed drainage from US 136, and precipitation. Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that this area met the wetland hydrology criterion (Fucciolo et al. 2009). Wetland drainage patterns and drift were observed.

**Wetland hydrology:** Yes: X            No:

**Rationale:** Field evidence cited above and ISGS data indicate that this area is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes: X            No:

**Rationale:** Hydric soil, dominant hydrophytic vegetation, and wetland hydrology are present at this area; therefore, we determined that this area is a wetland.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 3 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Sedge meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland is located along the western edge of the site.

### SPECIES LIST

| Scientific name                | Common name             | Stratum              | Wetland indicator status | Coefficient of conservatism# |
|--------------------------------|-------------------------|----------------------|--------------------------|------------------------------|
| <i>Acalypha rhomboidea</i>     | three-seeded mercury    | herb                 | FACU                     | 0+                           |
| <i>Acer saccharinum</i>        | silver maple            | sapling, shrub, herb | FACW                     | 1+                           |
| <i>Agrimonia parviflora</i>    | swamp agrimony          | herb                 | FAC+                     | 5                            |
| <i>Agrostis alba</i>           | red top                 | herb                 | FACW                     | 0+                           |
| <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>Aster pilosus</i>           | hairy aster             | herb                 | FACU+                    | 0+                           |
| <i>Aster simplex</i>           | panicled aster          | herb                 | FACW                     | 3                            |
| <i>Baptisia lactea</i>         | white wild indigo       | herb                 | FACU                     | 6                            |
| <i>Bidens aristosa</i>         | swamp marigold          | herb                 | FACW                     | 1+                           |
| <i>Calystegia sepium</i>       | American bindweed       | herb                 | FAC                      | 1+                           |
| <i>Carex cristatella</i>       | sedge                   | herb                 | FACW+                    | 3                            |
| <i>Carex frankii</i>           | sedge                   | herb                 | OBL                      | 4                            |
| <i>Carex grayi</i>             | bur sedge               | herb                 | FACW+                    | 6                            |
| <i>Carex tribuloides</i>       | sedge                   | herb                 | FACW+                    | 3                            |
| <i>Carex vulpinoidea</i>       | fox sedge               | herb                 | OBL                      | 3                            |
| <i>Carex sp.</i>               | sedge                   | herb                 | ----                     | --                           |
| <i>Cassia fasciculata</i>      | partridge pea           | herb                 | FACU-                    | 1+                           |
| <i>Cinna arundinacea</i>       | stout wood reed         | herb                 | FACW                     | 5                            |
| <i>Cyperus strigosus</i>       | straw-colored flatsedge | herb                 | FACW                     | 0+                           |
| <i>Daucus carota</i>           | Queen Anne's lace       | herb                 | UPL                      | *+                           |
| <i>Echinochloa muricata</i>    | barnyard grass          | herb                 | OBL                      | 0+                           |
| <i>Elymus virginicus</i>       | Virginia wild rye       | herb                 | FACW-                    | 4                            |
| <i>Epilobium coloratum</i>     | cinnamon willow herb    | herb                 | OBL                      | 3                            |
| <i>Eupatorium serotinum</i>    | late boneset            | herb                 | FAC+                     | 1+                           |
| <i>Fragaria virginiana</i>     | wild strawberry         | herb                 | FAC-                     | 2                            |
| <i>Geum laciniatum</i>         | rough avens             | herb                 | FACW                     | 2                            |
| <i>Glyceria striata</i>        | fowl manna grass        | herb                 | OBL                      | 4                            |
| <i>Helenium autumnale</i>      | autumn sneezeweed       | herb                 | FACW+                    | 3                            |
| <i>Helianthus tuberosus</i>    | Jerusalem artichoke     | herb                 | FAC                      | 3                            |
| <i>Hypericum punctatum</i>     | spotted St. Johns-wort  | herb                 | FAC+                     | 3                            |
| <i>Juncus dudleyi</i>          | Dudley's rush           | herb                 | FAC                      | 4                            |
| <i>Leersia oryzoides</i>       | rice cutgrass           | herb                 | OBL                      | 3                            |
| <i>Lycopus americanus</i>      | common water horehound  | herb                 | OBL                      | 3                            |
| <i>Lycopus virginicus</i>      | bugle weed              | herb                 | OBL                      | 5                            |

Species list continued on next page.



## ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 5 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Sedge meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland is located along the western edge of the site.

Determined by:

Scott Wiesbrook (soils and hydrology)

Brian Wilm and Jason Zylka (vegetation and hydrology)

Brad Zercher (GPS/GIS)

Illinois Natural History Survey

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Champaign, Illinois 61820

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## ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 1 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Wet meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the large area on the west-central portion of the site where no trees were planted.

Do normal environmental conditions exist at this area? Yes:  No:

Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No:

### VEGETATION

| Dominant Plant Species         | Stratum | Indicator Status |
|--------------------------------|---------|------------------|
| 1. <i>Phalaris arundinacea</i> | Herb    | FACW+            |

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

**Hydrophytic vegetation:** Yes:  No:

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

### SOILS

Series and phase: NRCS mapped as Sawmill silty clay loam and Huntsville silt loam; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list? Yes:  No:

Is the soil a histosol? Yes: No:

Histic epipedon present? Yes: No:

Redox Concentrations? Yes:  No: Color: 10YR 5/4 and 5/6

Redox Depletions? Yes:  No: Color: N 5/

Matrix color: 10YR 3.5/1

Other indicators: None.

**Hydric soils?** Yes:  No:

**Rationale:** The Natural Resources Conservation Service identifies Birds silt loam as a Typic Fluvaquent which is poorly drained. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 2 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Wet meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the large area on the west-central portion of the site where no trees were planted.

### HYDROLOGY

Inundated: Yes:            No: X

Depth of standing water: N/A

Depth to saturated soil: >0.10 m (4 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, sheet flow from surrounding uplands, some directed drainage from US 136, and precipitation. Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that this area met the wetland hydrology criterion (Fucciolo et al. 2009). Wetland drainage patterns and drift were observed.

**Wetland hydrology:** Yes: X            No:

**Rationale:** Field evidence cited above and ISGS data indicate that this area is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes: X            No:

**Rationale:** Hydric soil, dominant hydrophytic vegetation, and wetland hydrology are present at this area; therefore, we determined that this area is a wetland.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 3 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Wet meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the large area on the west-central portion of the site where no trees were planted.

### SPECIES LIST

| Scientific name                 | Common name               | Stratum               | Wetland indicator status | Coefficient of conservatism# |
|---------------------------------|---------------------------|-----------------------|--------------------------|------------------------------|
| <i>Acalypha rhomboidea</i>      | three-seeded mercury      | herb                  | FACU                     | 0+                           |
| <i>Acer negundo</i>             | box elder                 | shrub                 | FACW-                    | 1+                           |
| <i>Acer saccharinum</i>         | silver maple              | tree, sapl, shr, herb | FACW                     | 1+                           |
| <i>Agrimonia parviflora</i>     | swamp agrimony            | herb                  | FAC+                     | 5                            |
| <i>Agrostis alba</i>            | red top                   | herb                  | FACW                     | 0+                           |
| <i>Alisma plantago-aquatica</i> | broad-leaf water-plantain | herb                  | OBL                      | 2                            |
| <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 pilosus</i>            | hairy aster               | herb                  | FACU+                    | 0+                           |
| <i>Aster simplex</i>            | panicled aster            | herb                  | FACW                     | 3                            |
| <i>Bidens aristosa</i>          | swamp marigold            | herb                  | FACW                     | 1+                           |
| <i>Boehmeria cylindrica</i>     | false nettle              | herb                  | OBL                      | 3                            |
| <i>Calystegia sepium</i>        | American bindweed         | herb                  | FAC                      | 1+                           |
| <i>Carex stricta</i>            | tussock sedge             | herb                  | OBL                      | 5                            |
| <i>Carex tribuloides</i>        | sedge                     | herb                  | FACW+                    | 3                            |
| <i>Carex vulpinoidea</i>        | fox sedge                 | herb                  | OBL                      | 3                            |
| <i>Carex</i> sp.                | sedge                     | herb                  | ----                     | --                           |
| <i>Cicuta maculata</i>          | water hemlock             | herb                  | OBL                      | 4                            |
| <i>Cirsium discolor</i>         | pasture thistle           | herb                  | UPL                      | 3                            |
| <i>Cornus drummondii</i>        | rough-leaved dogwood      | shrub, herb           | FAC                      | 2                            |
| <i>Cyperus esculentus</i>       | yellow nut-sedge          | herb                  | FACW                     | 0+                           |
| <i>Cyperus strigosus</i>        | straw-colored flatsedge   | herb                  | FACW                     | 0+                           |
| <i>Daucus carota</i>            | Queen Anne's lace         | herb                  | UPL                      | *+                           |
| <i>Eleocharis erythropoda</i>   | spike rush                | herb                  | OBL                      | 3                            |
| <i>Eleocharis macrostachya</i>  | spike rush                | herb                  | OBL                      | 5                            |
| <i>Eleocharis obtusa</i>        | blunt spike rush          | herb                  | OBL                      | 2                            |
| <i>Elymus virginicus</i>        | Virginia wild rye         | herb                  | FACW-                    | 4                            |
| <i>Eupatorium serotinum</i>     | late boneset              | herb                  | FAC+                     | 1+                           |
| <i>Fragaria virginiana</i>      | wild strawberry           | herb                  | FAC-                     | 2                            |
| <i>Fraxinus pennsylvanica</i>   | green ash                 | sapling, shrub        | 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              | sapling, shrub        | FAC                      | 2                            |

Species list continued on next page.



## ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 5 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Wet meadow

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the large area on the west-central portion of the site where no trees were planted.

### SPECIES LIST (Cont.)

| Scientific name            | Common name       | Stratum     | Wetland indicator status | Coefficient of conservatism# |
|----------------------------|-------------------|-------------|--------------------------|------------------------------|
| <i>Ulmus americana</i>     | American elm      | shrub, herb | FACW-                    | 5                            |
| <i>Vernonia missurica</i>  | Missouri ironweed | herb        | FAC+                     | 5                            |
| <i>Vitis riparia</i>       | riverbank grape   | herb        | FACW-                    | 2                            |
| <i>Xanthium strumarium</i> | cocklebur         | herb        | FAC                      | 0+                           |

# Coefficient of Conservatism (Taft et al. 1997) + weedy native or non-native species, \*non-native species

$$FQI = \sum C/\sqrt{N} = 138/\sqrt{63} = 17.4$$

$$\bar{c} = \sum C/N = 138/63 = 2.2$$

Determined by:

Scott Wiesbrook (soils and hydrology)

Brian Wilm and Jason Zylka (vegetation and hydrology)

Brad Zercher (GPS/GIS)

Illinois Natural History Survey

1816 South Oak Street

Champaign, Illinois 61820

(217) 265-0368 (Wiesbrook)

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## ROUTINE ONSITE WETLAND DETERMINATION

Site 3 (page 1 of 4)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Marsh

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the excavated area in the southeastern corner of the site.

Do normal environmental conditions exist at this area? Yes:  No:

Has the vegetation, soils, or hydrology been significantly disturbed? Yes:  No:

### VEGETATION

| Dominant Plant Species             | Stratum | Indicator Status |
|------------------------------------|---------|------------------|
| 1. <i>Alisma plantago-aquatica</i> | Herb    | OBL              |
| 2. <i>Lemna minor</i>              | Herb    | OBL              |
| 3. <i>Phalaris arundinacea</i>     | Herb    | FACW+            |

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

**Hydrophytic vegetation:** Yes:  No:

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

### SOILS

Series and phase: NRCS mapped as Hickory loam; revised to generic Typic Endoaquoll

On county hydric soils list? Yes:  No:

Is the soil a histosol? Yes:  No:

Histic epipedon present? Yes:  No:

Redox Concentrations Yes:  No:  Color: 10YR 4/4 and 7.5YR 4/4

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

Matrix color: 10YR 2.5/1 over N 3.5/

Other indicators: This site is located within an excavated depression.

**Hydric soils?** Yes:  No:

**Rationale:** The Natural Resources Conservation Service defines Typic Endoaquolls as poorly drained. Presence of redox concentrations within a low chroma and gleyed matrix indicates that this site is saturated or inundated for a significant duration during the growing season. Therefore, this soil meets the hydric soil criterion. This soil meets NRCS hydric soil indicator A11 – Depleted below dark surface.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 3 (page 2 of 4)

**F Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Marsh

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the excavated area in the southeastern corner of the site.

### HYDROLOGY

Inundated: Yes:  No:

Depth of standing water: <0.51 m (20 in)

Depth to saturated soil: At surface

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, sheet flow from surrounding uplands, some directed drainage from US 136, and precipitation. Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that this area met the wetland hydrology criterion (Fucciolo et al. 2009). Wetland drainage patterns and drift were observed.

**Wetland hydrology:** Yes:  No:

**Rationale:** Field evidence cited above indicates that this area is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes:  No:

**Rationale:** Hydric soil, dominant hydrophytic vegetation, and wetland hydrology are present at this area; therefore, we determined that this area is a wetland.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 3 (page 3 of 4)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Marsh

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the excavated area in the southeastern corner of the site.

### SPECIES LIST

| Scientific name                 | Common name               | Stratum     | Wetland indicator status | Coefficient of conservatism# |
|---------------------------------|---------------------------|-------------|--------------------------|------------------------------|
| <i>Agrostis alba</i>            | red top                   | herb        | FACW                     | 0+                           |
| <i>Alisma plantago-aquatica</i> | broad-leaf water-plantain | herb        | OBL                      | 2                            |
| <i>Bidens connata</i>           | purplestem beggar's ticks | herb        | OBL                      | 2                            |
| <i>Boltonia asteroides</i>      | false aster               | herb        | FACW                     | 5                            |
| <i>Carex frankii</i>            | sedge                     | herb        | OBL                      | 4                            |
| <i>Carex lupulina</i>           | hop sedge                 | herb        | OBL                      | 5                            |
| <i>Carex tribulooides</i>       | sedge                     | herb        | FACW+                    | 3                            |
| <i>Carex vulpinoidea</i>        | fox sedge                 | herb        | OBL                      | 3                            |
| <i>Echinochloa muricata</i>     | barnyard grass            | herb        | OBL                      | 0+                           |
| <i>Eleocharis obtusa</i>        | blunt spike rush          | herb        | OBL                      | 2                            |
| <i>Eleocharis erythropoda</i>   | spike rush                | herb        | OBL                      | 3                            |
| <i>Eleocharis macrostachya</i>  | spike rush                | herb        | OBL                      | 5                            |
| <i>Eleocharis obtusa</i>        | blunt spike rush          | herb        | OBL                      | 2                            |
| <i>Juncus dudleyi</i>           | Dudley's rush             | herb        | FAC                      | 4                            |
| <i>Leersia oryzoides</i>        | rice cutgrass             | herb        | OBL                      | 3                            |
| <i>Lemna minor</i>              | common duckweed           | herb        | OBL                      | 3                            |
| <i>Lindernia dubia</i>          | false pimpernel           | herb        | OBL                      | 5                            |
| <i>Ludwigia alternifolia</i>    | seedbox                   | herb        | OBL                      | 5                            |
| <i>Ludwigia polycarpa</i>       | false loosestrife         | herb        | OBL                      | 5                            |
| <i>Mimulus ringens</i>          | monkey flower             | herb        | OBL                      | 5                            |
| <i>Penthorum sedoides</i>       | ditch stoncrop            | herb        | OBL                      | 2                            |
| <i>Phalaris arundinacea</i>     | reed canary grass         | herb        | FACW+                    | *+                           |
| <i>Phyla lanceolata</i>         | fog-fruit                 | herb        | OBL                      | 1+                           |
| <i>Potamogeton nodosus</i>      | leafy pondweed            | herb        | OBL                      | 7                            |
| <i>Rumex crispus</i>            | curly dock                | herb        | FAC+                     | *+                           |
| <i>Sagittaria latifolia</i>     | arrowhead                 | herb        | OBL                      | 4                            |
| <i>Salix exigua</i>             | sandbar willow            | shrub, herb | OBL                      | 1+                           |
| <i>Salix nigra</i>              | black willow              | shrub, herb | OBL                      | 3                            |
| <i>Scirpus fluviatilis</i>      | river bulrush             | herb        | OBL                      | 3                            |
| <i>Typha angustifolia</i>       | narrow-leaved cattail     | herb        | OBL                      | *+                           |
| <i>Typha latifolia</i>          | cattail                   | herb        | OBL                      | 1+                           |

# Coefficient of Conservatism (Taft et al. 1997) + weedy native or non-native species, \*non-native species

$$FQI = \sum C/\sqrt{N} = 88/\sqrt{28} = 16.6$$

$$\bar{C} = \sum C/N = 88/28 = 3.1$$

## ROUTINE ONSITE WETLAND DETERMINATION

Site 3 (page 4 of 4)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Marsh

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This wetland occupies the excavated area in the southeastern corner of the site.

Determined by:

Scott Wiesbrook (soils and hydrology)

Brian Wilm and Jason Zylka (vegetation and hydrology)

Brad Zercher (GPS/GIS)

Illinois Natural History Survey

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## ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 1 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** North tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area north of the silt-fenced areas.

Do normal environmental conditions exist at this area?

Yes:  No:

Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No:

### VEGETATION

| Dominant Plant Species         | Stratum | Indicator Status |
|--------------------------------|---------|------------------|
| 1. <i>Agrostis alba</i>        | Herb    | FACW             |
| 2. <i>Echinochloa muricata</i> | Herb    | OBL              |
| 3. <i>Phalaris arundinacea</i> | Herb    | FACW+            |

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

**Hydrophytic vegetation:** Yes:  No:

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

### SOILS

Series and phase: NRCS mapped as Sawmill silty clay loam, and Lawson and Coffeen silt loams; revised to predominantly Sawmill (Cumulic Endoaquoll)

On county hydric soils list? Yes:  No:

Is the soil a histosol? Yes: No:

Histic epipedon present? Yes: No:

Redox Concentrations? Yes:  No: Color: 7.5YR 4/6, 10YR 4/3 and 5/6

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

Matrix color: 10YR 3/1 over 10YR 4/2

Other indicators: None.

**Hydric soils?** Yes:  No:

**Rationale:** The Natural Resources Conservation Service identifies Sawmill silty clay loam as a Cumulic Endoaquoll which is poorly drained. This soil possesses redox concentrations within a low chroma matrix, which indicates saturated or reduced conditions for extended duration. Therefore, the soil at this site meets the hydric soil criterion. This soil meets none of the NRCS hydric soil indicators.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 2 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** North tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area north of the silt-fenced areas.

### HYDROLOGY

Inundated: Yes:            No: X                            Depth of standing water: N/A

Depth to saturated soil: From surface to 0.30 m (0-12 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, sheet flow from surrounding uplands, and precipitation.

Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that most of this area met the wetland hydrology criterion (Fucciolo et al. 2009). Wetland drainage patterns and drift were observed over part of this site.

**Wetland hydrology:** Yes: X            No:

**Rationale:** Field evidence cited above and ISGS data indicate that most of this area is inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes: X            No:

**Rationale:** Hydric soil, dominant hydrophytic vegetation, and wetland hydrology are present at part of this area; therefore, we determined that most of this area is a wetland. This site was not divided this year, but may be divided into two areas (wet and non-wet portions) for study next year based on this year's ISGS estimate of hydrology and soil characteristics.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 3 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** North tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area north of the silt-fenced areas.

### SPECIES LIST

| Scientific name                 | Common name               | Stratum             | Wetland indicator status | Coefficient of conservatism# |
|---------------------------------|---------------------------|---------------------|--------------------------|------------------------------|
| <i>Acer negundo</i>             | box elder                 | tree, sapling       | FACW-                    | 1+                           |
| <i>Acer saccharinum</i>         | silver maple              | tree, sapling, herb | FACW                     | 1+                           |
| <i>Agrostis alba</i>            | red top                   | herb                | FACW                     | 0+                           |
| <i>Alisma plantago-aquatica</i> | broad-leaf water-plantain | herb                | OBL                      | 2                            |
| <i>Ambrosia artemisiifolia</i>  | common ragweed            | herb                | FACU                     | 0+                           |
| <i>Ambrosia trifida</i>         | giant ragweed             | herb                | FAC+                     | 0+                           |
| <i>Ammannia coccinea</i>        | long-leaved ammannia      | herb                | OBL                      | 5                            |
| <i>Apocynum cannabinum</i>      | dogbane                   | herb                | FAC                      | 2                            |
| <i>Artemisia annua</i>          | annual wormwood           | herb                | FACU                     | *+                           |
| <i>Asclepias incarnata</i>      | swamp milkweed            | herb                | OBL                      | 4                            |
| <i>Asclepias syriaca</i>        | common milkweed           | herb                | UPL                      | 0+                           |
| <i>Aster novae-angliae</i>      | New England aster         | herb                | FACW                     | 4                            |
| <i>Aster pilosus</i>            | hairy aster               | herb                | FACU+                    | 0+                           |
| <i>Aster simplex</i>            | panicled aster            | herb                | FACW                     | 3                            |
| <i>Bidens aristosa</i>          | swamp marigold            | herb                | FACW                     | 1+                           |
| <i>Bidens connata</i>           | purplestem beggar's ticks | herb                | OBL                      | 2                            |
| <i>Bidens frondosa</i>          | common beggar's ticks     | herb                | FACW                     | 1+                           |
| <i>Boehmeria cylindrica</i>     | false nettle              | herb                | OBL                      | 3                            |
| <i>Boltonia asteroides</i>      | false aster               | herb                | FACW                     | 5                            |
| <i>Calystegia sepium</i>        | American bindweed         | herb                | FAC                      | 1+                           |
| <i>Carex frankii</i>            | sedge                     | herb                | OBL                      | 4                            |
| <i>Carex granularis</i>         | meadow sedge              | herb                | FACW+                    | 2                            |
| <i>Carex grayi</i>              | bur sedge                 | herb                | FACW+                    | 6                            |
| <i>Carex lupulina</i>           | hop sedge                 | herb                | OBL                      | 5                            |
| <i>Carex vulpinoidea</i>        | fox sedge                 | herb                | OBL                      | 3                            |
| <i>Cirsium discolor</i>         | pasture thistle           | herb                | UPL                      | 3                            |
| <i>Clematis virginiana</i>      | virgin's bower            | vine                | FAC                      | 3                            |
| <i>Cynanchum laeve</i>          | blue vine                 | herb                | FAC                      | 1+                           |
| <i>Cyperus acuminatus</i>       | taperleaf flat sedge      | herb                | OBL                      | 2                            |
| <i>Cyperus esculentus</i>       | yellow nut-sedge          | herb                | FACW                     | 0+                           |
| <i>Cyperus strigosus</i>        | straw-colored flatsedge   | herb                | FACW                     | 0+                           |
| <i>Echinochloa muricata</i>     | barnyard grass            | herb                | OBL                      | 0+                           |
| <i>Eclipta prostrata</i>        | yerba de tajo             | herb                | FACW                     | 2                            |
| <i>Eleocharis erythropoda</i>   | spike rush                | herb                | OBL                      | 3                            |
| <i>Eleocharis obtusa</i>        | blunt spike rush          | herb                | OBL                      | 2                            |
| <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.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 4 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** North tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area north of the silt-fenced areas.

### SPECIES LIST (Cont.)

| Scientific name                | Common name               | Stratum                 | Wetland indicator status | Coefficient of conservatism# |
|--------------------------------|---------------------------|-------------------------|--------------------------|------------------------------|
| <i>Eupatorium serotinum</i>    | late boneset              | herb                    | FAC+                     | 1+                           |
| <i>Festuca arundinacea</i>     | tall fescue               | herb                    | FACU+                    | *+                           |
| <i>Fraxinus pennsylvanica</i>  | green ash                 | tree, sapling, shrub    | FACW                     | 2                            |
| <i>Gleditsia triacanthos</i>   | honey locust              | tree                    | FAC                      | 2                            |
| <i>Glyceria striata</i>        | fowl manna grass          | herb                    | OBL                      | 4                            |
| <i>Humulus japonicus</i>       | Japanese hops             | herb                    | FACU                     | *+                           |
| <i>Impatiens capensis</i>      | jewelweed                 | herb                    | FACW                     | 2                            |
| <i>Ipomoea lacunosa</i>        | small white morning-glory | herb                    | FACW                     | 1+                           |
| <i>Juglans nigra</i>           | black walnut              | tree                    | FACU                     | 4                            |
| <i>Laportea canadensis</i>     | wood nettle               | herb                    | FACW                     | 2                            |
| <i>Lindernia dubia</i>         | false pimpernel           | herb                    | OBL                      | 5                            |
| <i>Lobelia siphilitica</i>     | blue cardinal-flower      | herb                    | FACW+                    | 4                            |
| <i>Ludwigia polycarpa</i>      | false loosestrife         | herb                    | OBL                      | 5                            |
| <i>Lycopus americanus</i>      | common water horehound    | herb                    | OBL                      | 3                            |
| <i>Lycopus virginicus</i>      | bugle weed                | herb                    | OBL                      | 5                            |
| <i>Lysimachia ciliata</i>      | fringed loosestrife       | herb                    | FACW                     | 4                            |
| <i>Mimulus ringens</i>         | monkey flower             | herb                    | OBL                      | 5                            |
| <i>Morus alba</i>              | white mulberry            | tree, sapl, shrub, herb | FAC                      | *+                           |
| <i>Muhlenbergia frondosa</i>   | common satin grass        | herb                    | FACW                     | 3                            |
| <i>Oxalis stricta</i>          | yellow wood sorrel        | herb                    | FACU                     | 0+                           |
| <i>Panicum dichotomiflorum</i> | fall panicum              | herb                    | FACW-                    | 0+                           |
| <i>Penthorum sedoides</i>      | ditch stonecrop           | herb                    | OBL                      | 2                            |
| <i>Phalaris arundinacea</i>    | reed canary grass         | herb                    | FACW+                    | *+                           |
| <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>Platanus occidentalis</i>   | sycamore                  | tree, shrub             | FACW                     | 3                            |
| <i>Poa pratensis</i>           | Kentucky bluegrass        | herb                    | FAC-                     | *+                           |
| <i>Polygonum lapathifolium</i> | curttop lady's thumb      | herb                    | FACW+                    | 0+                           |
| <i>Polygonum pensylvanicum</i> | giant smartweed           | herb                    | FACW+                    | 1+                           |
| <i>Polygonum punctatum</i>     | dotted smartweed          | herb                    | OBL                      | 3                            |
| <i>Polygonum scandens</i>      | climbing buckwheat        | vine                    | FAC                      | 2                            |
| <i>Polygonum virginianum</i>   | Virginia knotweed         | herb                    | FAC                      | 3                            |
| <i>Populus deltoides</i>       | eastern cottonwood        | tree, herb              | FAC+                     | 2                            |
| <i>Prunella vulgaris</i>       | self-heal                 | herb                    | FAC                      | *+                           |
| <i>Rhus glabra</i>             | smooth sumac              | shrub                   | UPL                      | 1+                           |
| <i>Rudbeckia laciniata</i>     | cutleaf coneflower        | herb                    | FACW+                    | 3                            |
| <i>Rumex crispus</i>           | curly dock                | herb                    | FAC+                     | *+                           |

Species list continued on next page.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 5 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka      **Date:** Aug. 18 & 19, 2009  
**Project Name:** FAP 315 (LaMoine River Site)      **Section No.:** 34-4 (4B, B-1)  
**State:** Illinois      **County:** Hancock      **Applicant:** IDOT Dist. 6  
**Area Name:** North tree planting area  
**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W  
**Location:** This tree planting area occupies that area north of the silt-fenced areas.

### SPECIES LIST (Cont.)

| Scientific name                   | Common name        | Stratum             | Wetland indicator status | Coefficient of conservatism# |
|-----------------------------------|--------------------|---------------------|--------------------------|------------------------------|
| <i>Salix exigua</i>               | sandbar willow     | shrub               | OBL                      | 1+                           |
| <i>Salix nigra</i>                | black willow       | tree                | 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>Solidago canadensis</i>        | Canada goldenrod   | herb                | FACU                     | 1+                           |
| <i>Solidago gigantea</i>          | late goldenrod     | herb                | FACW                     | 3                            |
| <i>Sorghum halepense</i>          | Johnson grass      | herb                | FACU                     | *+                           |
| <i>Stachys tenuifolia</i>         | slenderleaf betony | herb                | OBL                      | 5                            |
| <i>Symphoricarpos orbiculatus</i> | coralberry         | shrub               | FACU                     | 1+                           |
| <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>Ulmus americana</i>            | American elm       | tree, sapling, herb | FACW-                    | 5                            |
| <i>Urtica dioica</i>              | stinging nettle    | herb                | FAC+                     | 2                            |
| <i>Verbena urticifolia</i>        | white vervain      | herb                | FAC+                     | 3                            |
| <i>Vernonia missurica</i>         | Missouri ironweed  | herb                | FAC+                     | 5                            |
| <i>Viola pratincola</i>           | common blue violet | herb                | FAC                      | 1+                           |
| <i>Vitis riparia</i>              | riverbank grape    | vine, herb          | FACW-                    | 2                            |
| <i>Xanthium strumarium</i>        | cocklebur          | herb                | FAC                      | 0+                           |

# Coefficient of Conservatism (Taft et al. 1997) + weedy native or non-native species, \*non-native species  
 $FQI = \sum C/N = 194/\sqrt{85} = 21.0$        $\bar{C} = \sum C/N = 194/85 = 2.3$

Determined by:      Scott Wiesbrook (soils and hydrology)  
                                  Brian Wilm and Jason Zylka (vegetation and hydrology)  
                                  Brad Zercher (GPS/GIS)  
                                  Illinois Natural History Survey  
                                  1816 South Oak Street  
                                  Champaign, Illinois 61820  
                                  (217) 265-0368 (Wiesbrook)  
                                  [swiesbro@uiuc.edu](mailto:swiesbro@uiuc.edu)

## ROUTINE ONSITE WETLAND DETERMINATION

Site 5 (page 1 of 4)

**Field Investigators:** Wiesbrook, Wilm, and Zylka      **Date:** Aug. 18 & 19, 2009  
**Project Name:** FAP 315 (LaMoine River Site)      **Section No.:** 34-4 (4B, B-1)  
**State:** Illinois      **County:** Hancock      **Applicant:** IDOT Dist. 6  
**Area Name:** South tree planting area  
**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W  
**Location:** This tree planting area occupies that area south and east of the wet meadow (Site 2).

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

### VEGETATION

| Dominant Plant Species         | Stratum | Indicator Status |
|--------------------------------|---------|------------------|
| 1. <i>Agrostis alba</i>        | Herb    | FACW             |
| 2. <i>Phalaris arundinacea</i> | Herb    | FACW+            |
| 3. <i>Rumex crispus</i>        | Herb    | FAC+             |

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

**Hydrophytic vegetation:** Yes:  No:

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

### SOILS

Series and phase: NRCS mapped as Larson, Clarksdale, and Fishhook silt loams; revised to Clarksdale silt loam (Udolic Endoaqualf)

On county hydric soils list?      Yes:  No:

Is the soil a histosol?      Yes:  No:

Histic epipedon present?      Yes:  No:

Redox Concentrations?      Yes:  No:       Color: 10YR 4/4 and 5/6

Redox Depletions?      Yes:  No:       Color: 10YR 5/1 and 4/1

Matrix color: 10YR 3/2 over 10YR 5/4 (where topsoil shallow) or 10YR 4/2 (where topsoil deep)

Other indicators: None.

**Hydric soils?** Yes:  No:

**Rationale:** The Natural Resources Conservation Service identifies Clarksdale silt loam as an Udolic Endoaqualf which is somewhat poorly drained. This soil possesses redox concentrations and depletions within a medium chroma matrix, which indicates saturated or reduced conditions for brief duration. Therefore, the soil at this site does not meet the hydric soil criterion. This soil meets none of the NRCS hydric soil indicators.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 5 (page 2 of 4)

**Field Investigators:** Wiesbrook, Wilm, and Zylka      **Date:** Aug. 18 & 19, 2009  
**Project Name:** FAP 315 (LaMoine River Site)      **Section No.:** 34-4 (4B, B-1)  
**State:** Illinois      **County:** Hancock      **Applicant:** IDOT Dist. 6  
**Area Name:** South tree planting area  
**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W  
**Location:** This tree planting area occupies that area south and east of the wet meadow (Site 2).

### HYDROLOGY

Inundated: Yes:      No: X      Depth of standing water: N/A

Depth to saturated soil: 0.25 m (10 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, some directed drainage from US 136, and precipitation.

Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that most of this area met the wetland hydrology criterion (Fucciolo et al. 2009). No field evidence was observed.

**Wetland hydrology:** Yes:      No: X

**Rationale:** Lack of field evidence and previous years' ISGS data indicate that the majority of this area is not inundated or saturated for a sufficient duration in most years to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes:      No: X

**Rationale:** While dominant hydrophytic vegetation and wetland hydrology were present this year, hydric soil was absent; therefore, we determined that this area is not a wetland.







## ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 2 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Upland buffer tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area south and west of the wet meadow (Site 2).

### HYDROLOGY

Inundated: Yes:            No: X

Depth of standing water: N/A

Depth to saturated soil: 0.25 m (10 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the LaMoine River, some directed drainage from US 136, and precipitation.

Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the river.

Size of watershed: 1696 km<sup>2</sup> (655 mi<sup>2</sup>) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that most of this area met the wetland hydrology criterion (Fucciolo et al. 2009). No field evidence was observed.

**Wetland hydrology:** Yes:            No: X

**Rationale:** Lack of field evidence and previous years' ISGS data indicate that the majority of this area is not inundated or saturated for a sufficient duration in most years to satisfy the wetland hydrology criterion.

### DETERMINATION AND RATIONALE:

**Is the area a wetland?** Yes:            No: X

**Rationale:** While wetland hydrology was present this year, dominant hydrophytic vegetation and hydric soil were absent; therefore, we determined that this area is not a wetland.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 3 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Upland buffer tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area south and west of the wet meadow (Site 2).

### SPECIES LIST

| Scientific name                | Common name                    | Stratum | Wetland indicator status | Coefficient of conservatism# |
|--------------------------------|--------------------------------|---------|--------------------------|------------------------------|
| <i>Acer saccharinum</i>        | silver maple                   | tree    | FACW                     | 1+                           |
| <i>Agrimonia parviflora</i>    | swamp agrimony                 | herb    | FAC+                     | 5                            |
| <i>Agrostis alba</i>           | red top                        | herb    | FACW                     | 0+                           |
| <i>Ambrosia artemisiifolia</i> | common ragweed                 | herb    | FACU                     | 0+                           |
| <i>Ambrosia trifida</i>        | giant ragweed                  | herb    | FAC+                     | 0+                           |
| <i>Asclepias syriaca</i>       | common milkweed                | herb    | UPL                      | 0+                           |
| <i>Aster novae-angliae</i>     | New England aster              | herb    | FACW                     | 4                            |
| <i>Aster pilosus</i>           | hairy aster                    | herb    | FACU+                    | 0+                           |
| <i>Baptisia lactea</i>         | white wild indigo              | herb    | FACU                     | 6                            |
| <i>Bidens aristosa</i>         | swamp marigold                 | herb    | FACW                     | 1+                           |
| <i>Bromus commutatus</i>       | hairy brome                    | herb    | UPL                      | *+                           |
| <i>Bromus inermis</i>          | awnless brome grass            | herb    | UPL                      | *+                           |
| <i>Carex frankii</i>           | sedge                          | herb    | OBL                      | 4                            |
| <i>Cassia fasciculata</i>      | partridge pea                  | herb    | FACU-                    | 1+                           |
| <i>Cichorium intybus</i>       | blue sailors                   | herb    | UPL                      | *+                           |
| <i>Cirsium discolor</i>        | pasture thistle                | herb    | UPL                      | 3                            |
| <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 paniculatum</i>   | panicked tick trefoil          | herb    | FACU                     | 2                            |
| <i>Echinacea purpurea</i>      | broad-leaved purple coneflower | herb    | UPL                      | 6                            |
| <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>Eryngium yuccifolium</i>    | rattlesnake master             | herb    | FAC+                     | 7                            |
| <i>Eupatorium serotinum</i>    | late boneset                   | herb    | FAC+                     | 1+                           |
| <i>Euthamia graminifolia</i>   | grassleaf goldenrod            | herb    | FACW-                    | 3                            |
| <i>Fragaria virginiana</i>     | wild strawberry                | herb    | FAC-                     | 2                            |
| <i>Fraxinus pennsylvanica</i>  | green ash                      | tree    | FACW                     | 2                            |
| <i>Gleditsia triacanthos</i>   | honey locust                   | tree    | FAC                      | 2                            |
| <i>Helianthus tuberosus</i>    | Jerusalem artichoke            | herb    | FAC                      | 3                            |
| <i>Humulus lupulus</i>         | common hops                    | herb    | FACU                     | 2                            |
| <i>Hypericum punctatum</i>     | spotted St. Johns-wort         | herb    | FAC+                     | 3                            |
| <i>Ipomoea hederacea</i>       | ivy-leaved morning glory       | herb    | FAC                      | *+                           |
| <i>Juncus dudleyi</i>          | Dudley's rush                  | herb    | FAC                      | 4                            |

Species list continued on next page.

## ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 4 of 5)

**Field Investigators:** Wiesbrook, Wilm, and Zylka

**Date:** Aug. 18 & 19, 2009

**Project Name:** FAP 315 (LaMoine River Site)

**Section No.:** 34-4 (4B, B-1)

**State:** Illinois

**County:** Hancock

**Applicant:** IDOT Dist. 6

**Area Name:** Upland buffer tree planting area

**Legal Description:** SW/4, SE/4, and SE/4, SW/4 Section 18, T. 5 N., R. 5 W

**Location:** This tree planting area occupies that area south and west of the wet meadow (Site 2).

### SPECIES LIST (Cont.)

| Scientific name                | Common name            | Stratum | Wetland indicator status | Coefficient of conservatism# |
|--------------------------------|------------------------|---------|--------------------------|------------------------------|
| <i>Juniperus virginiana</i>    | eastern red cedar      | tree    | FACU                     | 1+                           |
| <i>Lactuca serriola</i>        | prickly lettuce        | herb    | FAC                      | *+                           |
| <i>Lespedeza capitata</i>      | bush clover            | herb    | FACU                     | 4                            |
| <i>Lobelia inflata</i>         | Indian tobacco         | herb    | FACU-                    | 4                            |
| <i>Lycopus americanus</i>      | common water horehound | herb    | OBL                      | 3                            |
| <i>Medicago lupulina</i>       | black medic            | herb    | FAC-                     | *+                           |
| <i>Monarda fistulosa</i>       | wild bergamot          | herb    | FACU                     | 4                            |
| <i>Oenothera biennis</i>       | evening primrose       | herb    | FACU                     | 1+                           |
| <i>Panicum capillare</i>       | witch grass            | herb    | FAC                      | 0+                           |
| <i>Pastinaca sativa</i>        | parsnip                | herb    | UPL                      | *+                           |
| <i>Penstemon digitalis</i>     | foxglove beard-tongue  | herb    | FAC-                     | 4                            |
| <i>Phalaris arundinacea</i>    | reed canary grass      | herb    | FACW+                    | *+                           |
| <i>Phleum pratense</i>         | timothy                | herb    | FACU                     | *+                           |
| <i>Physalis subglabrata</i>    | smooth ground cherry   | herb    | UPL                      | 0+                           |
| <i>Poa pratensis</i>           | Kentucky bluegrass     | herb    | FAC-                     | *+                           |
| <i>Polygonum pensylvanicum</i> | giant smartweed        | herb    | FACW+                    | 1+                           |
| <i>Polygonum scandens</i>      | climbing buckwheat     | herb    | FAC                      | 2                            |
| <i>Populus deltoides</i>       | eastern cottonwood     | tree    | FAC+                     | 2                            |
| <i>Prunella vulgaris</i>       | self-heal              | herb    | FAC                      | *+                           |
| <i>Prunus serotina</i>         | wild black cherry      | tree    | FACU                     | 1+                           |
| <i>Pycnanthemum pilosum</i>    | hairy mountain mint    | herb    | UPL                      | 6                            |
| <i>Quercus imbricaria</i>      | shingle oak            | tree    | FAC-                     | 2                            |
| <i>Ratibida pinnata</i>        | drooping coneflower    | herb    | UPL                      | 4                            |
| <i>Robinia pseudoacacia</i>    | black locust           | tree    | FACU-                    | 1+                           |
| <i>Rosa multiflora</i>         | multiflora rose        | shrub   | FACU                     | *+                           |
| <i>Rubus allegheniensis</i>    | common blackberry      | shrub   | FACU+                    | 2                            |
| <i>Rudbeckia hirta</i>         | black-eyed susan       | herb    | FACU                     | 2                            |
| <i>Rumex crispus</i>           | curly dock             | herb    | FAC+                     | *+                           |
| <i>Salix exigua</i>            | sandbar willow         | shrub   | OBL                      | 1+                           |
| <i>Salix nigra</i>             | black willow           | tree    | OBL                      | 3                            |
| <i>Scirpus atrovirens</i>      | dark green bulrush     | herb    | OBL                      | 4                            |
| <i>Setaria faberi</i>          | giant foxtail          | herb    | FACU+                    | *+                           |
| <i>Setaria glauca</i>          | pigeon grass           | herb    | FAC                      | *+                           |
| <i>Silphium laciniatum</i>     | compass-plant          | herb    | FACU-                    | 5                            |
| <i>Solidago canadensis</i>     | Canada goldenrod       | herb    | FACU                     | 1+                           |
| <i>Solidago nemoralis</i>      | dyersweed goldenrod    | herb    | UPL                      | 3                            |
| <i>Sorghastrum nutans</i>      | Indian grass           | herb    | FACU+                    | 4                            |

Species list continued on next page.



## **Appendix B**

### **Photographs of Wetland Mitigation Sites**



Picture 1. Facing east from photostation 1 (overlooking north tree planting).



Picture 2. Facing west from photostation 1 (overlooking wet meadow).



Picture 3. Facing south from photostation 2 (overlooking south tree planting towards highway).



Picture 4. Facing south from photostation 3 (overlooking marsh towards highway).



Picture 5. Facing north from photostation 3 (overlooking south tree planting).



Picture 6. Facing west from photostation 4 (overlooking wet meadow).



Picture 7. Facing east from photostation 4 [overlooking area with no trees planted (background)].



Picture 8. Facing northeast from photostation 5 (overlooking north tree planting).



Picture 9. Facing northeast from IL 336 [overlooking wet meadow (photo left), south tree planting (photo middle), and marsh (photo right)].



Picture 10. Facing northwest from IL 336 [overlooking upland buffer tree planting (photo left and middle), and wet meadow (photo right)].