

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: 235
Contract Number: 72680
Section Number: 34-4 (4B, B-1)
County: Hancock
IDOT District: District 6

Survey Conducted By: Scott Wiesbrook (soils and hydrology)
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Date Conducted: September 13 and 26, 2007

Project Summary:

For the first 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

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

Date: _____

Date: _____

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 September 13 and 26, 2007.

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. 2007). 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) where the soils and vegetation parameters in the Corps of Engineers Wetland Delineation Manual also are met; 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 23 monitoring wells and 3 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 3 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 2007 are summarized in ISGS' Annual Report for Active IDOT Wetland Compensation and Hydrologic Monitoring Sites, September 1, 2006 to September 1, 2007 (Fucciolo et al. 2007).

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. Eleven parallel transects were established on a north (N) bearing at 50 m intervals. Sample points (31) were located at 25 m intervals along each transect. Vegetation was recorded by species and percent cover within 1 m² 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 (ΣC) and dividing by the total number of native species (N). The FQI is then calculated by dividing the ΣC 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 a botanical asset. FQI values between 35 and 50 ($\bar{c} = 3.5$) indicate that the area has significant native character.

c. Dominance of vegetation

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

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. 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, a majority of dominant plant species for the mitigation site in 2007 were rated OBL, FACW, FAC+, or FAC and were hydrophytic. Two areas had 67% of the dominants being hydrophytic, one area had 75%, one area had 80%, and one area had 100%; all of which meet the minimum project goal of >50%. The upland buffer tree planting had 0% 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.

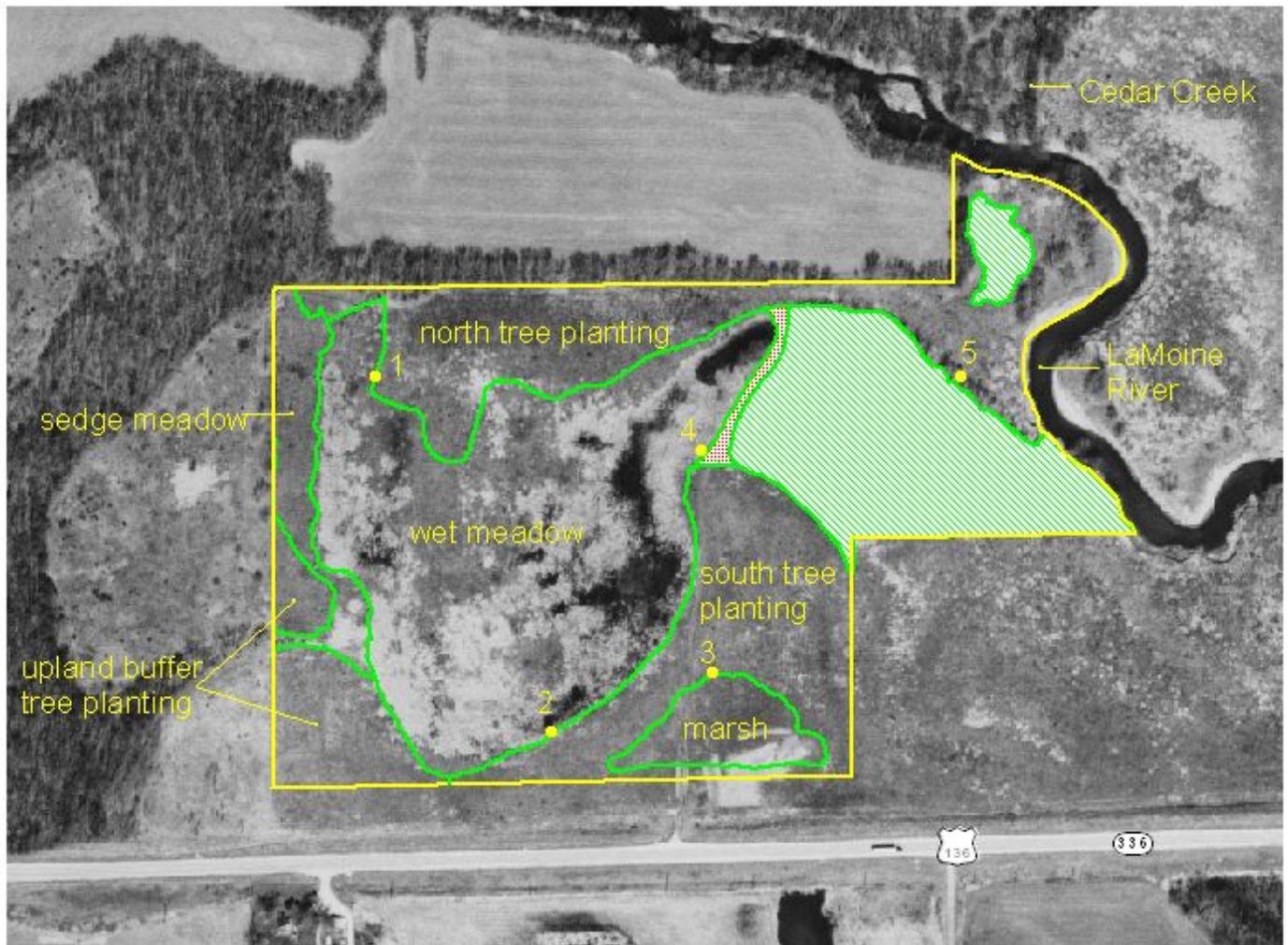
b. Occurrence of hydric soils

Soils examined at the site were found to be relatively undisturbed with the exception of the marsh. It appeared that hydric soil indicators are present within the sedge meadow, wet meadow, marsh, and a portion 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 5% of the 2007 growing season was estimated to be 22.5 ac (9.1 ha)” (Figure 2) (Fucciolo, et al. 2007). More information is available in the *Hancock County near Carthage, Wetland Compensation Site* report (ibid). Based on field evidence observed during our on-site visits, one additional area of this site {the marsh [1.5 ac (0.6 ha)]} exhibits indicators of wetland hydrology (see additional information within the routine onsite wetland determination forms located in Appendix A of this report). At this time we estimate that 24.0 ac (9.7 ha) of the site currently has wetland hydrology.

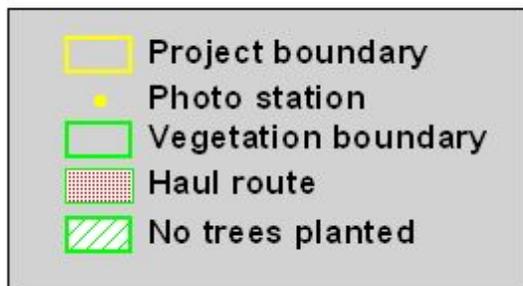
LaMoine River Mitigation Site (FAP 315) Hancock County, Illinois



0 400 800 Feet

scale 1:4800
1 inch=400 ft

0 100 200 Meters



01/08

Figure 1.

Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)

Estimated Areal Extent of 2007 Wetland Hydrology

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

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 4/14/98 aerial photography (ISGS 2002)

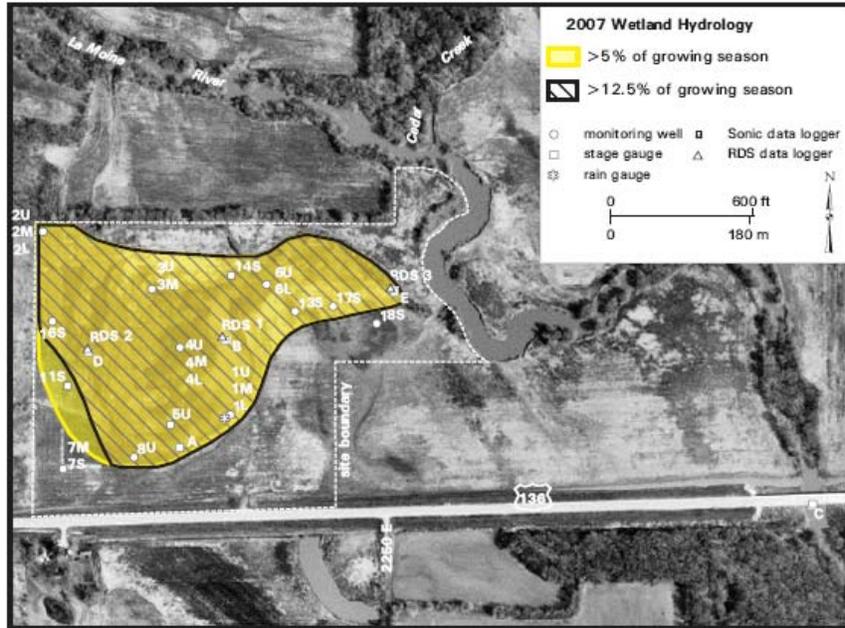


Figure 2.

Project goal 2

a. Planted species survivorship

Table 2 shows the results of the census. There was only a minor discrepancy between the numbers of trees reported as planted and the number of trees counted, as we counted 3 trees more than were reported as planted. 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. More than 93% of the trees reported planted were counted as surviving. This easily 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	247	98.8
<i>Fraxinus pennsylvanica</i>	Green ash	250	230	92.0
<i>Platanus occidentalis</i>	Sycamore	250	209	83.6
<i>Quercus palustris</i>	Pin oak	248	243	98.0
<i>Quercus bicolor</i>	Swamp white oak	250	240	96.0
Spp.	Miscellaneous dead	-	82	x
TOTAL		1248	1251	93.7

b. Native species composition

Table 3 below shows the percentage non-weedy, native, annual and perennial species for each area of this site. Therefore, none of the areas meet the requirement for native species composition (>90%). 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 and could possibly exceed the stated project goal.

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

Area 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

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

These values indicate that the south tree planting area is of poor natural quality, while all other areas are of fair natural quality. These values should 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 *Solidago canadensis*, *Cyperus esculentus*, *Phalaris arundinacea*, *Ambrosia artemisiifolia*, *Panicum dichotomiflorum*, and *Aster simplex* (Table 5, page 10). *Phalaris arundinacea*, *Polygonum pennsylvanicum*, and *Solidago canadensis* dominated the wet meadow (Table 6, page 11). In the marsh, dominant species were *Lindernia dubia*, *Polygonum pennsylvanicum*, and *Panicum dichotomiflorum* (Table 7, page 12).

Based on visual estimation, dominant species in the north tree planting area were *Polygonum pennsylvanicum*, *Agrostis alba*, *Phalaris arundinacea*, *Setaria faberi*, and *Amaranthus tuberculatus*. *Setaria faberi*, *Agrostis alba*, *Polygonum pennsylvanicum*, and *Ambrosia trifida* dominated in the south tree planting area. The upland buffer tree planting area was dominated by *Solidago canadensis*, *Tridens flavus*, *Setaria faberi*, *Ambrosia artemisiifolia*, and *Poa pratensis*. In each community most or all of the dominant species are non-native or weedy native. At this time none of these communities meet the performance criteria for dominance of vegetation.

Table 5. Understory species composition of Sedge Meadow (Site 1). Frequency, Relative Frequency, Cover (m²/m²), Relative Cover, Importance Value (%), N=7.

Species	Frequency	Relative Frequency	Cover	Relative Cover	Importance Value
<i>Solidago canadensis</i>	0.8571	0.0682	0.2900	0.2006	13.44
<i>Cyperus esculentus</i>	0.8571	0.0682	0.1671	0.1156	9.19
<i>Phalaris arundinacea</i>	0.5714	0.0454	0.1214	0.0840	6.47
<i>Ambrosia artemisiifolia</i>	0.7143	0.0568	0.0943	0.0652	6.10
<i>Panicum dichotomiflorum</i>	0.2857	0.0227	0.1214	0.0840	5.34
<i>Aster simplex</i>	0.5714	0.0454	0.0857	0.0593	5.24
<i>Oxalis stricta</i>	0.7143	0.0568	0.0571	0.0395	4.82
<i>Bidens aristosa</i>	0.5714	0.0454	0.0643	0.0445	4.49
<i>Geum laciniatum</i>	0.5714	0.0454	0.0471	0.0326	3.90
<i>Lycopus americanus</i>	0.5714	0.0454	0.0400	0.0277	3.66
<i>Ulmus americana</i>	0.4286	0.0341	0.0400	0.0277	3.09
<i>Eupatorium serotinum</i>	0.5714	0.0454	0.0214	0.0148	3.01
<i>Carex cristatella</i>	0.4286	0.0341	0.0357	0.0247	2.94
<i>Acalypha rhomboidea</i>	0.5714	0.0454	0.0143	0.0099	2.76
<i>Polygonum pensylvanicum</i>	0.4286	0.0341	0.0229	0.0158	2.50
<i>Aster pilosus</i>	0.2857	0.0227	0.0286	0.0198	2.12
<i>Helenium autumnale</i>	0.1429	0.0114	0.0429	0.0297	2.05
<i>Trifolium repens</i>	0.2857	0.0227	0.0257	0.0178	2.03
<i>Carex vulpinoidea</i>	0.2857	0.0227	0.0214	0.0148	1.88
<i>Agrostis alba</i>	0.2857	0.0227	0.0114	0.0079	1.53
<i>Hypericum punctatum</i>	0.2857	0.0227	0.0114	0.0079	1.53
<i>Juncus dudleyi</i>	0.2857	0.0227	0.0086	0.0059	1.43
<i>Lysimachia nummularia</i>	0.2857	0.0227	0.0057	0.0039	1.33
<i>Erigeron annuus</i>	0.2857	0.0227	0.0029	0.0020	1.24
<i>Calystegia sepium</i>	0.1429	0.0114	0.0143	0.0099	1.06
<i>Lycopus virginicus</i>	0.1429	0.0114	0.0071	0.0049	0.81
<i>Agrimonia parviflora</i>	0.1429	0.0114	0.0071	0.0049	0.81
<i>Setaria faberi</i>	0.1429	0.0114	0.0071	0.0049	0.81
<i>Bidens frondosa</i>	0.1429	0.0114	0.0071	0.0049	0.81
<i>Polygonum aviculare</i>	0.1429	0.0114	0.0043	0.0030	0.72
<i>Rudbeckia hirta</i>	0.1429	0.0114	0.0043	0.0030	0.72
<i>Polygonum lapathifolium</i>	0.1429	0.0114	0.0043	0.0030	0.72
<i>Taraxacum officinale</i>	0.1429	0.0114	0.0043	0.0030	0.72
<i>Rumex crispus</i>	0.1429	0.0114	0.0043	0.0030	0.72
Total	12.5716	0.9998	1.4455	1.0001	99.99

Table 6. Understory species composition of Wet Meadow (Site 2). Frequency, Relative Frequency, Cover (m²/m²), Relative Cover, Importance Value (%), N=21.

Species	Frequency	Relative Frequency	Cover	Relative Cover	Importance Value
<i>Phalaris arundinacea</i>	0.7619	0.2162	0.5786	0.5239	37.00
<i>Polygonum pensylvanicum</i>	0.2857	0.0811	0.1571	0.1422	11.16
<i>Solidago canadensis</i>	0.2857	0.0811	0.1071	0.0970	8.90
<i>Elymus virginicus</i>	0.1905	0.0541	0.0548	0.0496	5.19
<i>Carex cristatella</i>	0.2381	0.0676	0.0205	0.0186	4.31
<i>Aster simplex</i>	0.1429	0.0406	0.0238	0.0216	3.11
<i>Rumex crispus</i>	0.1429	0.0406	0.0143	0.0129	2.67
<i>Ambrosia trifida</i>	0.1429	0.0406	0.0110	0.0100	2.53
<i>Scirpus fluviatilis</i>	0.0952	0.0270	0.0190	0.0172	2.21
<i>Toxicodendron radicans</i>	0.0952	0.0270	0.0133	0.0120	1.95
<i>Cyperus esculentus</i>	0.0952	0.0270	0.0119	0.0108	1.89
<i>Scirpus atrovirens</i>	0.0952	0.0270	0.0119	0.0108	1.89
<i>Eupatorium serotinum</i>	0.0952	0.0270	0.0052	0.0047	1.59
<i>Lycopus americanus</i>	0.0952	0.0270	0.0038	0.0034	1.52
<i>Lysimachia nummularia</i>	0.0476	0.0135	0.0119	0.0108	1.21
<i>Geum laciniatum</i>	0.0476	0.0135	0.0095	0.0086	1.11
<i>Vitis riparia</i>	0.0476	0.0135	0.0071	0.0064	0.99
<i>Fragaria virginiana</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Carex blanda</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Bidens aristosa</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Prunella vulgaris elongata</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Cynanchum laeve</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Leersia oryzoides</i>	0.0476	0.0135	0.0048	0.0043	0.89
<i>Penthorum sedoides</i>	0.0476	0.0135	0.0024	0.0022	0.79
<i>Calystegia sepium</i>	0.0476	0.0135	0.0024	0.0022	0.79
<i>Sida spinosa</i>	0.0476	0.0135	0.0024	0.0022	0.79
<i>Eclipta prostrata</i>	0.0476	0.0135	0.0024	0.0022	0.79
<i>Bidens frondosa</i>	0.0476	0.0135	0.0024	0.0022	0.79
<i>Agrimonia parviflora</i>	0.0476	0.0135	0.0014	0.0013	0.74
<i>Asclepias incarnata</i>	0.0476	0.0135	0.0014	0.0013	0.74
Total	3.5234	0.9999	1.1044	0.9999	100.00

Table 7. Understory species composition of Marsh (Site 3). Frequency, Relative Frequency, Cover (m²/m²), Relative Cover, Importance Value (%), N = 5.

Species	Frequency	Relative Frequency	Cover	Relative Cover	Importance Value
<i>Lindernia dubia</i>	1.000	0.2174	0.170	0.3080	26.27
<i>Polygonum pensylvanicum</i>	0.600	0.1304	0.150	0.2717	20.11
<i>Panicum dichotomiflorum</i>	0.600	0.1304	0.120	0.2174	17.39
<i>Ammannia coccinea</i>	0.600	0.1304	0.050	0.0906	11.05
<i>Cyperus acuminatus</i>	0.400	0.0870	0.012	0.0217	5.44
<i>Typha angustifolia</i>	0.400	0.0870	0.012	0.0217	5.44
<i>Scirpus fluviatilis</i>	0.200	0.0435	0.030	0.0544	4.90
<i>Abutilon theophrasti</i>	0.200	0.0435	0.002	0.0036	2.35
<i>Amaranthus tuberculatus</i>	0.200	0.0435	0.002	0.0036	2.35
<i>Eupatorium serotinum</i>	0.200	0.0435	0.002	0.0036	2.35
<i>Cyperus esculentus</i>	0.200	0.0435	0.002	0.0036	2.35
Total	4.600	1.0001	0.552	0.9999	100.00

Discussion

After this first 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. A portion of the north tree planting area also meets the jurisdictional wetland criterion. There is no evidence to support that the upland buffer or south tree planting areas will comply with this goal in the future, although this year was slightly drier than average. 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 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 all areas, at all areas it does not meet the native species composition requirement or the dominance criteria for native non-weedy species. 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 wetland hydrology at the upland buffer and north tree planting areas.

All of the wet meadow, sedge meadow, and marsh, and a portion of the north tree planting area satisfy the wetland criteria; therefore, current wetland acreage at this site is estimated to be 24.0 ac (9.7 ha), corresponding to that area determined by the ISGS to possess wetland hydrology. 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 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Ambrosia artemisiifolia</i>	Herb	FACU
2. <i>Aster simplex</i>	Herb	FACW
3. <i>Cyperus esculentus</i>	Herb	FACW
4. <i>Panicum dichotomiflorum</i>	Herb	FACW-
5. <i>Phalaris arundinacea</i>	Herb	FACW+
6. <i>Solidago canadensis</i>	Herb	FACU

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 67%

Hydrophytic vegetation: Yes: X 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: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 10YR 5/4 and 5/6
Redox Depletions? Yes: X No: Color: N 5/
Matrix color: 10YR 3.5/1
Other indicators: None.

Hydric soils? Yes: X 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 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: >0.56 m (22 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 km² (655 mi²) 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. 2007). 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 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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	seedling	FACW	1
<i>Agalinus tenuifolia</i>	slender false foxglove	herb	FACW	5
<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>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>Bidens frondosa</i>	beggar's ticks	herb	FACW	1
<i>Calystegia sepium</i>	hedge bindweed	herb	FAC	1+
<i>Carex cristatella</i>	sedge	herb	FACW+	3
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Cinna arundinacea</i>	stout woodreed	herb	FACW	5
<i>Cirsium discolor</i>	field thistle	herb	UPL	3
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0+
<i>Eleagnus umbellata</i>	autumn olive	shrub	UPL	*+
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Epilobium coloratum</i>	cinnamon willow herb	herb	OBL	3
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1+
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Helenium autumnale</i>	sneezeweed	herb	FACW+	3
<i>Hypericum punctatum</i>	dotted St. John's 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>	water horehound	herb	OBL	3
<i>Lycopus virginicus</i>	bugleweed	herb	OBL	5
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*+
<i>Oenothera biennis</i>	evening primrose	herb	FACU	1+
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0+
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0+
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*+

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 4 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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 (Cont.)

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Phyla lanceolata</i>	fog fruit	herb	OBL	1
<i>Platanus occidentalis</i>	sycamore	sapling	FACW	3
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*+
<i>Polygonum lapathifolium</i>	nodding smartweed	herb	FACW+	0+
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Populus deltoides</i>	cottonwood	sapling	FAC+	2
<i>Potentilla norvegica</i>	rough cinquefoil	herb	FAC	0+
<i>Rudbeckia hirta</i>	black eyed Susan	herb	FACU	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*+
<i>Scirpus atrovirens</i>	dark green bulrush	herb	OBL	4
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*+
<i>Sida spinosa</i>	prickly sida	herb	FACU	*+
<i>Solanum ptycanthum</i>	black nightshade	herb	FACU-	0+
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1+
<i>Symphoricarpos orbiculatus</i>	coralberry	shrub	FACU	1+
<i>Taraxacum officinale</i>	dandelion	herb	FACU	*+
<i>Trifolium repens</i>	white clover	herb	FACU+	*+
<i>Ulmus americana</i>	American elm	seedling	FACW-	5
<i>Vernonia missurica</i>	Missouri ironweed	herb	FAC+	5
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2

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

$$FQI = \sum C/\sqrt{N} = 97/\sqrt{49} = 13.9 \qquad \bar{C} = \sum C/N = 97/49 = 2.0$$

Determined by: Scott Wiesbrook (soils and hydrology)
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 (vegetation and hydrology)
 Brad Zercher (GPS/GIS)
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ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 1 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Phalaris arundinacea</i>	Herb	FACW+
2. <i>Polygonum pensylvanicum</i>	Herb	FACW+
3. <i>Solidago canadensis</i>	Herb	FACU

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 67%

Hydrophytic vegetation: Yes: X 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: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 10YR 5/4 and 5/6
Redox Depletions? Yes: X No: Color: N 5/
Matrix color: 10YR 3.5/1
Other indicators: None.

Hydric soils? Yes: X 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 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: >0.56 m (22 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 km² (655 mi²) 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. 2007). 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 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Acer saccharinum</i>	silver maple	seedling	FACW	1
<i>Agrimonia parviflora</i>	swamp agrimony	herb	FAC+	5
<i>Amaranthus tuberculatus</i>	water hemp	herb	OBL	1+
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0+
<i>Asclepias incarnata</i>	swamp milkweed	herb	OBL	4
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0+
<i>Aster simplex</i>	panicled aster	herb	FACW	3
<i>Bidens aristosa</i>	swamp marigold	herb	FACW	1
<i>Bidens frondosa</i>	beggar's ticks	herb	FACW	1
<i>Calystegia sepium</i>	hedge bindweed	herb	FAC	1+
<i>Carex blanda</i>	woodland sedge	herb	FAC	2
<i>Carex cristatella</i>	sedge	herb	FACW+	3
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0+
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1+
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0+
<i>Eclipta prostrata</i>	yerba de tajo	herb	FACW	2
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erechtites hieracifolia</i>	fireweed	herb	FACU	2
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Fragaria virginiana</i>	wild strawberry	herb	FAC-	2
<i>Geum laciniatum</i>	rough avens	herb	FACW	2
<i>Gleditsia triacanthos</i>	honey locust	shrub	FAC	2
<i>Helenium autumnale</i>	sneezeweed	herb	FACW+	3
<i>Leersia oryzoides</i>	rice cutgrass	herb	OBL	3
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Lycopus virginicus</i>	bugleweed	herb	OBL	5
<i>Lysimachia nummularia</i>	moneywort	herb	FACW+	*+
<i>Morus alba</i>	white mulberry	shrub	FAC	*+
<i>Penthorum sedoides</i>	ditch stoncrop	herb	OBL	2
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*+
<i>Platanus occidentalis</i>	sycamore	sapling	FACW	3
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Polygonum punctatum</i>	dotted smartweed	herb	OBL	3
<i>Polygonum scandens</i>	climbing false buckwheat	herb	FAC	2
<i>Populus deltoides</i>	cottonwood	sapling	FAC+	2

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 2 (page 4 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Prunella vulgaris elongata</i>	self heal	herb	FAC	1+
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*+
<i>Rubus allegheniensis</i>	blackberry	shrub	FACU+	2
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*+
<i>Salix exigua</i>	sandbar willow	shrub	OBL	1+
<i>Salix nigra</i>	black willow	shrub	OBL	3
<i>Sambucus canadensis</i>	elderberry	shrub	FACW-	2
<i>Scirpus atrovirens</i>	dark green bulrush	herb	OBL	4
<i>Scirpus fluviatilis</i>	river bulrush	herb	OBL	3
<i>Sida spinosa</i>	prickly sida	herb	FACU	*+
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0+
<i>Solanum dulcamara</i>	climbing nightshade	herb	FAC	*+
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1+
<i>Teucrium canadense</i>	germander	herb	FACW-	3
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1+
<i>Ulmus americana</i>	American elm	seedling	FACW-	5
<i>Verbena urticifolia</i>	white vervain	herb	FAC+	3
<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

$$FQI = \sum C/\sqrt{N} = 105/\sqrt{51} = 14.7 \quad \bar{C} = \sum C/N = 105/51 = 2.1$$

Determined by: Scott Wiesbrook (soils and hydrology)
 Allen Plocher, Brian Wilm, and Jason Zylka
 (vegetation and hydrology)
 Brad Zercher (GPS/GIS)
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ROUTINE ONSITE WETLAND DETERMINATION

Site 3 (page 1 of 3)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007

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: X No:

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Lindernia dubia</i>	Herb	FACW+
2. <i>Panicum dichotomiflorum</i>	Herb	FACW-
3. <i>Polygonum pensylvanicum</i>	Herb	FACW+

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

Hydrophytic vegetation: Yes: X No:

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

SOILS

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

On county hydric soils list? Yes: No: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

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

Redox Depletions? Yes: No: X 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: X 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 3)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: X Depth of standing water: N/A

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 km² (655 mi²) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS did not have monitoring equipment within this newly excavated depression this year, but ISGS staff noticed inundation during April and at least part of May (S. Benton, personal communication, January 7, 2008). Wetland drainage patterns, water-borne sediment deposits, bare surface areas, and drift were observed.

Wetland hydrology: Yes: X 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: 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 3 (page 3 of 3)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Abutilon theophrasti</i>	velvet leaf	herb	FACU-	*+
<i>Alisma plantago aquatica</i>	water plantain	herb	OBL	2
<i>Amaranthus tuberculatus</i>	water hemp	herb	OBL	1+
<i>Ammannia coccinea</i>	ammannia	herb	OBL	5
<i>Cyperus acuminatus</i>	taperleaf flatsedge	herb	OBL	2
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Datura stramonium</i>	jimson weed	herb	FACU-	*+
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0+
<i>Eclipta prostrata</i>	yerba de tajo	herb	FACW	2
<i>Eleocharis acicularis</i>	needle spikerush	herb	OBL	3
<i>Eleocharis erythropoda</i>	red rooted spikerush	herb	OBL	3
<i>Eleocharis obtusa</i>	spikerush	herb	OBL	2
<i>Eleocharis smallii</i>	spikerush	herb	OBL	5
<i>Eragrostis hypnoides</i>	creeping lovegrass	herb	OBL	5
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Lindernia dubia</i>	false pimpernel	herb	OBL	5
<i>Ludwigia alternifolia</i>	alternate leaf seedbox	herb	OBL	5
<i>Mollugo verticillata</i>	carpet weed	herb	FAC	*+
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0+
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*+
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Salix nigra</i>	black willow	seedling	OBL	3
<i>Scirpus fluviatilis</i>	river bulrush	herb	OBL	3
<i>Typha angustifolia</i>	narrow leaf cattail	herb	OBL	*+

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

$$FQI = \sum C/\sqrt{N} = 52/\sqrt{20} = 11.6$$

$$\bar{c} = \sum C/N = 52/20 = 2.6$$

Determined by: Scott Wiesbrook (soils and hydrology)
 Allen Plocher, 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)

ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 1 of 5)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Agrostis alba</i>	Herb	FACW
2. <i>Amaranthus tuberculatus</i>	Herb	OBL
3. <i>Phalaris arundinacea</i>	Herb	FACW+
4. <i>Polygonum pensylvanicum</i>	Herb	FACW+
5. <i>Setaria faberi</i>	Herb	FACU+

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 80%

Hydrophytic vegetation: Yes: X 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: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 7.5YR 4/6, 10YR 4/3 and 5/6
Redox Depletions? Yes: No: X Color: N/A
Matrix color: 10YR 3/1 over 10YR 4/2

Other indicators: None.

Hydric soils? Yes: X 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, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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 0.51->0.99 m (20->39 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 km² (655 mi²) for the LaMoine River approximately 10 river miles downstream at Colmar, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that a portion of this area met the wetland hydrology criterion (Fucciolo et al. 2007). 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 a portion 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 this area; therefore, we determined that a portion of this area is a wetland. This site will likely be divided into two areas (wet and non-wet portions) for study next year.

ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 3 of 5)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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	sapling	FACW-	1+
<i>Acer saccharinum</i>	silver maple	seedling	FACW	1
<i>Agrostis alba</i>	red top	herb	FACW	0+
<i>Amaranthus tuberculatus</i>	water hemp	herb	OBL	1+
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0+
<i>Amorpha fruticosa</i>	false indigo bush	shrub	FACW+	6
<i>Apocynum sibiricum</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 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>	beggar's ticks	herb	OBL	2
<i>Bidens frondosa</i>	beggar's ticks	herb	FACW	1
<i>Boltonia asteroides</i>	false aster	herb	FACW	5
<i>Calystegia sepium</i>	hedge bindweed	herb	FAC	1+
<i>Capsella bursa pastoris</i>	shepherd's purse	herb	FAC-	*+
<i>Carex vulpinoidea</i>	fox sedge	herb	OBL	3
<i>Carya illinoensis</i>	pecan	shrub	(planted)	6
<i>Cephalanthus occidentalis</i>	buttonbush	shrub	OBL	4
<i>Cirsium discolor</i>	field thistle	herb	UPL	3
<i>Clematis virginiana</i>	virgin's bower	herb	FAC	3
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0+
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1+
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0+
<i>Eclipta prostrata</i>	yerba de tajo	herb	FACW	2
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erechtites hieracifolia</i>	fireweed	herb	FACU	2
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1+
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Fraxinus pennsylvanica</i>	green ash	shrub	(planted)	2
<i>Geranium carolinianum</i>	wild cranesbill	herb	UPL	2
<i>Ipomaea lacunosa</i>	small flowered morning glory	herb	FACW	1+
<i>Juglans nigra</i>	black walnut	seedling	FACU	4
<i>Laportea canadensis</i>	wood nettle	herb	FACW	2
<i>Leersia virginica</i>	white grass	herb	FACW	4

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 4 of 5)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Lobelia siphilitica</i>	blue lobelia	herb	FACW+	4
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Melilotus alba</i>	tall white clover	herb	FACU	*+
<i>Mollugo verticillata</i>	carpetweed	herb	FAC	*+
<i>Muhlenbergia frondosa</i>	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>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*+
<i>Phyla lanceolata</i>	fog fruit	herb	OBL	1
<i>Phytolacca americana</i>	pokeweed	herb	FAC-	1+
<i>Platanus occidentalis</i>	sycamore	shrub	(planted)	3
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Polygonum punctatum</i>	dotted smartweed	herb	OBL	3
<i>Polygonum scandens</i>	climbing false buckwheat	herb	FAC	2
<i>Quercus bicolor</i>	swamp white oak	shrub	(planted)	7
<i>Quercus palustris</i>	pin oak	shrub	(planted)	4
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*+
<i>Rudbeckia hirta</i>	black eyed Susan	herb	FACU	2
<i>Rudbeckia laciniata</i>	cutleaf coneflower	herb	FACW+	3
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*+
<i>Sambucus canadensis</i>	elderberry	shrub	FACW-	2
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*+
<i>Sida spinosa</i>	prickly sida	herb	FACU	*+
<i>Solanum dulcamara</i>	climbing nightshade	herb	FAC	*+
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1+
<i>Taraxacum officinale</i>	dandelion	herb	FACU	*+
<i>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1+
<i>Urtica dioica</i>	stinging nettle	herb	FAC+	2
<i>Verbesina alternifolia</i>	wingstem	herb	FACW	4
<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	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

$$FQI = \sum C / \sqrt{N} = 138 / \sqrt{63} = 17.4 \quad \bar{c} = \sum C / N = 138 / 63 = 2.2$$

ROUTINE ONSITE WETLAND DETERMINATION

Site 4 (page 5 of 5)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007

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.

Determined by: Scott Wiesbrook (soils and hydrology)
Allen Plocher, Brian Wilm, and Jason Zylka
(vegetation and hydrology)
Brad Zercher (GPS/GIS)
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ROUTINE ONSITE WETLAND DETERMINATION

Site 5 (page 1 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Ambrosia trifida</i>	Herb	FAC+
3. <i>Polygonum pensylvanicum</i>	Herb	FACW+
4. <i>Setaria faberi</i>	Herb	FACU+

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

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 (Udollic 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 Udollic 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, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: >0.66 m (26 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 km² (655 mi²) 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 did not meet the wetland hydrology criterion (Fucciolo et al. 2007). No field evidence was observed.

Wetland hydrology: Yes: No: X

Rationale: Field evidence cited above and ISGS data indicate that this area is not inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the area a wetland? Yes: No: X

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

ROUTINE ONSITE WETLAND DETERMINATION

Site 5 (page 3 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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).

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Abutilon theophrasti</i>	velvet leaf	herb	FACU-	*+
<i>Achillea millefolium</i>	yarrow	herb	FACU	*+
<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 pilosus</i>	hairy aster	herb	FACU+	0+
<i>Bidens aristosa</i>	swamp marigold	herb	FACW	1
<i>Calystegia sepium</i>	hedge bindweed	herb	FAC	1+
<i>Carya illinoensis</i>	pecan	shrub	(planted)	6
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0+
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*+
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1+
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Fraxinus pennsylvanica</i>	green ash	shrub	(planted)	2
<i>Oenothera biennis</i>	evening primrose	herb	FACU	1+
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0+
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0+
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*+
<i>Platanus occidentalis</i>	sycamore	shrub	(planted)	3
<i>Polygonum aviculare</i>	knotweed	herb	FAC-	*+
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Prunella vulgaris elongata</i>	self heal	herb	FAC	1+
<i>Quercus bicolor</i>	swamp white oak	shrub	(planted)	7
<i>Quercus palustris</i>	pin oak	shrub	(planted)	4
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*+
<i>Setaria glauca</i>	yellow foxtail	herb	FAC	*+
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1+
<i>Trifolium pratense</i>	red clover	herb	FACU+	*+
<i>Trifolium repens</i>	white clover	herb	FACU+	*+
<i>Vernonia missurica</i>	Missouri ironweed	herb	FAC+	5

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

$$FQI = \sum C/\sqrt{N} = 39/\sqrt{24} = 8.0$$

$$\bar{c} = \sum C/N = 39/24 = 1.6$$

ROUTINE ONSITE WETLAND DETERMINATION

Site 5 (page 4 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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).

Determined by: Scott Wiesbrook (soils and hydrology)
Allen Plocher, 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)

ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 1 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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).

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>Ambrosia artemisiifolia</i>	Herb	FACU
2. <i>Poa pratensis</i>	Herb	FAC-
3. <i>Setaria faberi</i>	Herb	FACU+
4. <i>Solidago canadensis</i>	Herb	FACU
5. <i>Tridens flavus</i>	Herb	UPL

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 0%

Hydrophytic vegetation: Yes: No:

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

SOILS

Series and phase: NRCS mapped as Lawson and Keomah silt loams and Sawmill silty clay loam; revised to Keomah silt loam (Aeric 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 5/6 and 4/6

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

Matrix color: 10YR 4/2 over 10YR 5/3

Other indicators: None.

Hydric soils? Yes: No:

Rationale: The Natural Resources Conservation Service identifies Keomah silt loam as an Aeric 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 6 (page 2 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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: >0.76 m (30 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 km² (655 mi²) 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 did not meet the wetland hydrology criterion (Fucciolo et al. 2007). No field evidence was observed.

Wetland hydrology: Yes: No: X

Rationale: Field evidence cited above and ISGS data indicate that this area is not inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the area a wetland? Yes: No: X

Rationale: Dominant hydrophytic vegetation, hydric soil and wetland hydrology are absent at this area; therefore, we determined that this area is not a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 3 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Acalypha rhomboidea</i>	three seeded Mercury	herb	FACU	0+
<i>Acer saccharinum</i>	silver maple	sapling	FACW	1
<i>Achillea millefolium</i>	yarrow	herb	FACU	*+
<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>Andropogon virginicus</i>	broomsedge	herb	FAC-	1+
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0+
<i>Aster pilosus</i>	hairy aster	herb	FACU+	0+
<i>Bidens aristosa</i>	swamp marigold	herb	FACW	1
<i>Carya illinoensis</i>	pecan	shrub	(planted)	6
<i>Carya cordiformis</i>	bitternut hickory	sapling	FAC	4
<i>Cassia fasciculata</i>	partridge pea	herb	FACU-	1+
<i>Cirsium discolor</i>	field thistle	herb	UPL	3
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0+
<i>Cyperus esculentus</i>	chufa	herb	FACW	0+
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*+
<i>Desmodium paniculatum</i>	panicled tick trefoil	herb	FACU	2
<i>Eleagnus umbellata</i>	autumn olive	shrub	UPL	*+
<i>Elymus canadensis</i>	Canada wild rye	herb	FAC-	4
<i>Erechtites hieracifolia</i>	fireweed	herb	FACU	2
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1+
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1+
<i>Euthamia graminifolia</i>	grass leaf goldenrod	herb	FACW-	3
<i>Festuca pratensis</i>	English bluegrass	herb	FACU-	*+
<i>Fragaria virginiana</i>	wild strawberry	herb	FAC-	2
<i>Fraxinus pennsylvanica</i>	green ash	shrub	(planted)	2
<i>Gleditsia triacanthos</i>	honey locust	sapling	FAC	2
<i>Hordeum jubatum</i>	squirrel tail barley	herb	FAC+	*+
<i>Humulus lupulus</i>	common hops	herb	FACU	3
<i>Monarda fistulosa</i>	wild bergamot	herb	FACU	4
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0+
<i>Panicum capillare</i>	witch grass	herb	FAC	0+
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0+
<i>Pastinaca sativa</i>	wild parsnip	herb	UPL	*+
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*+
<i>Platanus occidentalis</i>	sycamore	shrub/seedling	FACW	3

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 6 (page 4 of 4)

Field Investigators: Wiesbrook, Plocher, Wilm, and Zylka **Date:** Sept. 13 & 26, 2007
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>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*+
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1+
<i>Populus deltoides</i>	cottonwood	sapling	FAC+	2
<i>Prunella vulgaris elongata</i>	self heal	herb	FAC	1+
<i>Prunus serotina</i>	black cherry	seedling	FACU	1+
<i>Quercus bicolor</i>	swamp white oak	shrub	(planted)	7
<i>Quercus imbricaria</i>	shingle oak	sapling	FAC-	2
<i>Quercus palustris</i>	pin oak	shrub	(planted)	4
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*+
<i>Rubus allegheniensis</i>	blackberry	shrub	FACU+	2
<i>Rudbeckia hirta</i>	black eyed Susan	herb	FACU	2
<i>Salix exigua</i>	sandbar willow	sapling	OBL	1+
<i>Salix nigra</i>	black willow	sapling	OBL	3
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*+
<i>Setaria glauca</i>	yellow foxtail	herb	FAC	*+
<i>Sida spinosa</i>	prickly sida	herb	FACU	*+
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0+
<i>Solidago canadensis</i>	Canada goldenrod	herb	FACU	1+
<i>Tridens flavus</i>	grease grass	shrub	UPL	1+
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*+
<i>Trifolium pratense</i>	red clover	herb	FACU+	*+
<i>Trifolium repens</i>	white clover	herb	FACU+	*+
<i>Vernonia missurica</i>	Missouri ironweed	herb	FAC+	5
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0+

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

$$FQI = \sum C/\sqrt{N} = 84/\sqrt{47} = 12.3 \quad \bar{C} = \sum C/N = 84/47 = 1.8$$

Determined by: Scott Wiesbrook (soils and hydrology)
 Allen Plocher, Brian Wilm, and Jason Zylka
 (vegetation and hydrology)
 Brad Zercher (GPS/GIS)
 Illinois Natural History Survey
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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).