

TRANSMITTAL

To: Bureau of Design and Environment
Attn: Thomas Brooks
From: Illinois Natural History Survey
Re: Mitigation Monitoring

Route and Location

Project Title: Cahokia Site
Route: FAP 999 /New River Crossing
Location: east of IL 3 in Cahokia, IL
County: St. Clair

Survey Conducted By: Allen Plocher, David Ketzner, Dennis Keene, Brad Zercher
Illinois Natural History Survey
Division for Ecology and Conservation Science
1816 S. Oak St.
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Date Conducted: 8 October 2008

Project Summary:

The project area for the proposed multi-use wetland compensation site was examined. Vegetation community composition, soils and hydrology are described. Surrounding land use is addressed. All existing wetlands within the project area have been described and mapped.

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

Date: _____

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

Date: _____

Mitigation Monitoring

To: Thomas Brooks
From: Allen Plocher, David Ketzner, Dennis Keene, Brad Zercher
Date: 24 November 2008
Re: Mitigation Monitoring– Cahokia Site/Multi-Use Wetland Compensation
St. Clair County
Date Investigated: 8 October 2008

Site Description

Wetland mitigation monitoring was carried out on a 26.3 ha (65 acre) tract near Cahokia, IL in St. Clair Co. (Legal location: T 1 N, R 10 W, Sect. 10, W/2 NE/4, E/2, NW/4. The site occurs on the Mississippi River floodplain and the presettlement environment consisted of mesic and hydric floodplain forest, wet shrubland, marsh and backwater ponds and sloughs. The surrounding land use is primarily cropland and developed land. A mitigation site assessment was carried out at this location in March 2000. At that time the northern half of the site was in soybean and the southern half supported various wetlands. The NRCS mapped the agricultural portion of the property as Prior Converted Cropland (PC). The property was purchased for wetland mitigation in November 2000 and agricultural activities ceased at that time. The northern half of the site has been mowed periodically, most recently in 2005. As part of an effort to establish the State and Federally listed *Boltonia decurrens*, a 4 acre area in the northern part of the site was disked and seeded with *Boltonia* in August 2003. In September 2004, no *Boltonia* plants were located. In June 2005, 40 greenhouse reared *Boltonia* were planted at the site. In October 2006, seven of the planted *Boltonia* remained and one plant, presumably from seed, was located just outside the planted area. By October 2007, no *Boltonia decurrens* individuals survived at this site. Our current feelings are that the site was too wet when first disked, providing an unsuitably rough seedbed for this small seeded species. We also now feel that this site is not environmentally suited for *Boltonia decurrens*. The sort of severe riverine flooding necessary to scour soil and produce bare areas for establishment does not occur at this location. As of October 2008, the wetland restoration related activities at this site consist of taking cropland, mapped as Prior Converted, out of agriculture, periodic mowing to maintain an herbaceous plant community, and a (so far) unsuccessful attempt to establish State and Federally listed *Boltonia decurrens*.

Hydrology

The hydrologic inputs at this site are backflow from the Mississippi River, ditch overflow, precipitation, and runoff from adjacent uplands. Water leaves the site by evapotranspiration, sheetflow to the south and ditchflow to Harding Ditch. Backflow from the Mississippi deposits sediment on the site. The following hydrologic alterations are currently in effect: 1. Ditch/culvert system leads into a large canal to the south. 2. Levees separate the site from Harding Ditch and the Mississippi River. The topography of the site is level and elevation is 123 m (405 ft). In 2008, with precipitation 139% of normal, 56.5 out of 65 acres supported wetland hydrology. In 2007, with precipitation 91% of normal, 37 out of 65 acres had wetland hydrology (Sperling et al 2007, Benton et

al 2008). Hydrophytic vegetation is present on 35.92 acres. In general, the southern and northern parts of the site are wetland. Approximately 23 acres in the central part of the site are at a higher elevation and support nonwetland. The Mississippi has a watershed greater than 25,920 km² (10,000 mi²). The hydrologic basin unit code is 07140101, Mississippi Tribs, Hartford to Reily Lake, Mississippi River, Upper.

Soils

The St. Clair Co. Soil Survey shows Darwin silty clay, Fluvaquent and Borrow Pit mapped at this site. Cores were taken in the project area and Zipp silty clay, poorly drained, was determined to be present on most of the site. A portion of the site is underlain by soil disturbed by excavation (probably previously Zipp). This soil exhibits slow to very slow permeability. The potential for occasional flooding exists. Zipp is a floodplain soil formed in silty clay alluvium under forest conditions and is a hydric soil.

Vegetation

The southern portion of this site supports marsh, floodplain forest and wet shrubland. These communities are little changed since the area was first investigated in 2000 and occupy about 15.3 acres. The marsh is of good natural quality (FQI = 23.8), while the quality of the forest and shrubland is fair (FQI 14.6 – 15.6). Most of this area appears to have been excavated for fill material many years ago. The northern part of the marsh was apparently disked and cropped in drier years. Since cessation of agriculture, part of this area has reverted to young floodplain forest. Part of the northern part of the site has developed into wet forbland, due to the cessation of agriculture followed by periodic mowing. Dominant vegetation here is *Bidens aristosa* and *Echinochloa muricata* and natural quality is fair (FQI = 12.7). The southwestern and northeastern parts of this area are dominated by *Setaria faberi* and *Solidago canadensis* and are not wetland. A sizable area in the center of the site has not been mowed, is at higher elevation, and is rapidly developing into nonwetland mesic forest. It seems clear that without periodic mowing, almost all of the site that was previously affected by agriculture will become either mesic forest or wet floodplain forest (two or three acres of the wettest occasionally previously cropped area currently support marsh).

Summary

In the eight years after agricultural activity ceased, it appears as if about half of the area previously cropped has developed into wetland (20.7 acres). Part of the area periodically mowed is an herbaceous community (wet forbland). Part of the unmown area is young floodplain forest while the wettest part is a marsh. Natural quality of these communities is fair (12.7 – 14.6). Percent weedy/non-native species ranges from 21% in the unmown areas to 38% in the mowed areas. A number of undesirable species are fairly abundant, however – *Lonicera maackii*, *Eleagnus umbellata* and *Sorghum halapense* in the non-wetland shrubland, and *Typha angustifolia* and *Phragmites australis* in the marsh. All but the wettest areas will become forest without vegetation management.

Table 1. Plant Communities within the Project Area

1. Wet Forbland - 20.66 acres (northern third of tract)

Dominant Species

Understory – *Bidens aristosa*, *Echinochloa muricata*

2. Marsh – 5.79 acres (southern portion of tract)

Dominant Species

Understory – *Typha angustifolia*, *Typha latifolia*, *Polygonum amphibium*,
Carex hyalinolepis, *Hibiscus laevis*

3. Wet Floodplain Forest – 3.18 acres (southern portion of tract)

Dominant Species

Overstory – *Populus deltoides*

Sapling Layer – *Acer saccharinum*

Understory- *Carex hyalinolepis*, *Aster simplex*, *Equisetum arvense*

4. Young Floodplain Forest - 2.37 acres (southern portion of tract)

Dominant Species

Overstory – *Acer negundo*

Sapling Layer – *Acer saccharinum*, *Acer negundo*

Understory- *Carex hyalinolepis*, *Boehmeria cylindrica*, *Equisetum arvense*

5. Wet Shrubland – 3.92 acres (southern portion of tract)

Dominant Species

Sapling/Shrub Layer- *Salix exigua*, *Salix nigra*, *Cephalanthus occidentalis*

Understory – *Phalaris arundinacea*, *Polygonum amphibium*, *Carex hyalinolepis*

6. Forbland – 15.12 acres (northwestern and northern portions of tract)

Dominant Species

Understory – *Solidago canadensis*, *Setaria faberi*

7. Shrubland - 9.23 acres (west central portion of tract)

Dominant Species

Sapling/Shrub Layer – *Acer saccharinum*, *Lonicera maackii*, *Cornus drummondii*

Understory – *Sorghum halapense*, *Solidago canadensis*, *Setaria faberi*

Literature Cited

- Benton, S., C. Fucciolo, K. Bryant, K. Carr, C. Knight, J. Miner, E. Plankell, and G. Pociask. 2008. Annual Report for Active IDOT Wetland Compensation and Monitoring Sites: Former Tiernan Site– 2008. Submitted to Illinois Department of Transportation. Illinois State Geological Survey, Champaign, IL. 18 pp.
- Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1, U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MI. 207 pp.
- Plocher, A. and D. Keene. 2000. Mitigation Site Assessment for Tiernan Property. Report for the IDOT. 20 pp.
- Sperling, B., C. Fucciolo, S. Benton, K. Carr, C. Knight, J. Miner, E. Plankell, and G. Pociask. 2007. Annual Report for Active IDOT Wetland Compensation and Monitoring Sites: Former Tiernan Site– 2007. Submitted to Illinois Department of Transportation. Illinois State Geological Survey, Champaign, IL. 18 pp.
- Reed, P. B. 1988. National list of plants that occur in wetlands: North Central. USFWS, National Wetlands Inventory. NERC-88/18.13. 117 pp.
- Taft, J., G. Wilhelm, D. Ladd and L. Masters. 1997. Floristic Quality Assessment for vegetation of Illinois: a method for assessing vegetation integrity. *Erignia* 15: 3-95.

Wetland Assessment

The following sources were examined while surveying the project area to determine wetland locations and boundaries: United States Geologic Survey topographic map and National Wetland Inventory map (Cahokia 7.5 minute quadrangle); *Soil Survey of St. Clair Co.*; aerial photographs; *National List of Plant Species That Occur in Wetlands*; *The 1987 Corps of Engineers Wetland Delineation Manual*; and on-site vegetation, soil, and hydrologic indicators. Five sites were investigated and all met the criteria of wetlands. Results of these determinations are summarized on the following pages and are described in more detail on the accompanying forms. Wetland site boundaries were mapped using Trimble GPS (Global Positioning System). The locations of the sites were overlain on Digital Ortho Quads using Arc View 3.2. Printouts of these DOQ's showing the locations of the wetland determination sites are included and the report and shape files of the GIS data are posted on the IDOT ftp site.

A brief functional assessment of each wetland is provided in this report. However, this assessment is not an exhaustive description of the values of the site. The Floristic Quality Index (FQI), Developed by Taft, Ladd, Wilhelm and Masters (*Floristic Quality Assessment for Vegetation in Illinois*, 1997), was applied to the vegetation of the sites not in cultivation. This index should not be used as a substitute for quantitative analysis, but it does provide a measure of floristic integrity. The FQI is calculated as follows: $FQI = R/\sqrt{N}$, where R represents the sum of the numerical ratings for all species recorded in the area, and N represents the number of recorded native species. The mean C is calculated as: $mean\ C = R/N$. FQI values of less than 10 indicate low natural quality, while sites with values of 20 or more have at least some evidence of native character and may be considered environmental assets (Appendix 1).

Site Summaries

Site 1: This wet forbland occupies the northern third of the tract. Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. The NRCS classified the site as Prior Converted Cropland (PC). Hydrologic inputs are precipitation, runoff from surrounding uplands, and ditch overflow. Water leaves by evapotranspiration, sheetflow and ditchflow. The site occupies 8.36 ha (20.66 acres) and is uncoded by the NWI. The FQI is 12.7, which is indicative of fair natural quality.

Site 2: This marsh occurs in the southern half of the tract. Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. Hydrologic inputs are precipitation, runoff from surrounding uplands and ditch overflow. Water leaves by evapotranspiration. This site appears to have been excavated. The site occupies 2.34 ha (5.79 acres). The NWI codes the site as PEMC (palustrine, emergent, seasonally flooded). The FQI is 23.8, which is indicative of good natural quality and that the site can be considered an environmental asset.

Site 3: This wet floodplain forest occurs in several areas in the southern half of the tract. Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. Hydrologic inputs are precipitation, runoff from surrounding uplands

and ditch overflow. Water leaves by evapotranspiration, sheetflow and ditchflow. This site appears to have been shallowly excavated. The site is 1.29 ha (3.18 acres). The NWI codes the site as PEMC (palustrine, emergent, seasonally flooded). The FQI is 15.5, which is indicative of fair natural quality.

Site 4: This young floodplain forest occurs in the southern half of the tract. Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. Hydrologic inputs are precipitation, runoff from surrounding uplands and ditch overflow. Water leaves by evapotranspiration and sheetflow. The site is 0.96 ha (2.37 acres). The NWI codes the site as PEMC (palustrine, emergent, seasonally flooded). The FQI is 14.6, which is indicative of fair natural quality.

Site 5: This wet shrubland occurs in the southern portion of the tract. Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. Hydrologic inputs are precipitation, runoff from surrounding uplands and ditch overflow. Water leaves by evapotranspiration and ditchflow. This site appears to have been shallowly excavated. The site is 1.59 ha (3.92 acres). The NWI codes the site as PEMC (palustrine, emergent, seasonally flooded). The FQI is 15.6, which is indicative of fair natural quality.

**Appendix 1: Wetland Determinations
and Species Lists**

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 1 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Forbland
Legal Description: T 1 N, R 10 W, Sect.10, NW/4 NE/4
Location: northern third of tract

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Bidens aristosa</i>	herb	FACW
2. <i>Echinochloa muricata</i>	herb	OBL

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

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

SOILS

Series and phase: Zipp silty clay
On St. Clair County hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox concentrations: Yes: X No:
Redox depletions: Yes: No: X
Matrix color: N 5/
Other indicators: This soil is found in a low area.

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service classifies Zipp silty clay loam as having aquic conditions. This soil has iron masses and a gleyed matrix. Furthermore, this soil meets the NRCS hydric soil indicator F2 (loamy gleyed matrix). These characteristics are evidence of a hydric soil.

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 2 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Forbland
Legal Description: T 1 N, R 10 W, Sect.10, NW/4 NE/4
Location: northern third of tract

HYDROLOGY

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

Depth to saturated soil: > 1 m (> 3.3 ft)

Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow.

Evapotranspiration and sheetflow are the major outputs.

Size of watershed: < 2.59 km² (< 1 mi²)

Other field evidence observed: Level landscape position on floodplain

Wetland hydrology: Yes: X No:

Rationale: Field evidence indicates that this site is inundated or saturated for a sufficient duration to support wetland hydrology

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:

Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is not coded as wetland by the NWI. The NRCS coded the site PC (prior converted).

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 3 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Forbland
Legal Description: T 1 N, R 10 W, Sect.10, NW/4 NE/4
Location: northern third of tract

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C*
<i>Acer saccharinum</i>	silver maple	shrub/seedling	FACW	1
<i>Andropogon virginicus</i>	broomsedge	herb	FAC-	1
<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>	panicked aster	herb	FACW	3
<i>Bidens aristosa</i>	swamp marigold	herb	FACW	1
<i>Bidens frondosa</i>	beggar's ticks	herb	FACW	1
<i>Boltonia asteroides</i>	false aster	herb	FACW	5
<i>Cardiospermum halicacabum</i>	balloon vine	herb	FAC	*
<i>Carex tribuloides</i>	sedge	herb	FACW+	3
<i>Carya illinoensis</i>	pecan	shrub	FACW	6
<i>Cassia fasciculata</i>	partridge pea	herb	FACU-	1
<i>Commelina diffusa</i>	dayflower	herb	FACW	3
<i>Cornus drummondii</i>	rough leaf dogwood	shrub	FAC	2
<i>Cyperus strigosus</i>	straw colored flatsedge	herb	FACW	0
<i>Desmanthus illinoensis</i>	Illinois bundleflower	herb	FAC-	4
<i>Desmodium paniculatum</i>	tick trefoil	herb	FACU	2
<i>Digitaria ischaemum</i>	smooth crabgrass	herb	FACU	*
<i>Diospyros virginiana</i>	persimmon	seedling	FAC	2

*Coefficient of Conservatism, as developed by Taft, Ladd, Wilhelm and Masters (1997)

Continued on following page

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 4 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Forbland
Legal Description: T 1 N, R 10 W, Sect.10, NW/4 NE/4
Location: northern third of tract

SPECIES LIST (continued)

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Erechtites hieracifolia</i>	fireweed	herb	FACU	2
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1
<i>Fraxinus pennsylvanica</i>	green ash	sapling	FACW	2
<i>Iva annua</i>	sumpweed	herb	FAC	0
<i>Juglans nigra</i>	black walnut	sapling	FACU	4
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Polygonum ramosissimum</i>	bushy knotweed	herb	FAC-	3
<i>Pyrus calleryana</i>	Bradford pear	shrub	UPL	*
<i>Quercus palustris</i>	pin oak	shrub	FACW	4
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<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>Toxicodendron radicans</i>	poison ivy	herb	FAC+	1
<i>Ulmus americana</i>	American elm	shrub	FACW-	5
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2

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

$$mCv = \sum C/N = 73/33 = 2.21$$

* Non-native species

$$FQI = \sum C/\sqrt{N} = 73/\sqrt{33} = 12.7 \quad \text{Quality} = \text{fair}$$

Percent weedy or non-native: 15/39 = 38.5%

ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 1 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Marsh
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4
Location: southern half of tract

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Typha angustifolia</i>	herb	OBL
2. <i>Typha latifolia</i>	herb	OBL
3. <i>Polygonum amphibium</i>	herb	OBL
4. <i>Carex hyalinolepis</i>	herb	OBL
5. <i>Hibiscus laevis</i>	herb	OBL

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

Hydrophytic vegetation: Yes: X No:

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

SOILS

Series and phase: Undetermined (inundated)

On St. Clair County hydric soils list?: Yes: No: Undet: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

Redox concentrations: Yes: No: Undet: X

Redox depletions: Yes: No: Undet: X

Matrix color: NA

Other hydric soil indicators: Soil is saturated and had a hydrogen sulfide odor.

Hydric soils: Yes: X No:

Rationale: This site was inundated. This soil is ponded for a long duration or a very long duration during the growing season. This characteristic is evidence of a hydric soil.

ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 2 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Marsh
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4
Location: southern half of tract

HYDROLOGY

Inundated: Yes: X No: Depth of standing water: 0.152 – 0.51 m (6 – 20 in)

Depth to saturated soil: at surface

Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow.

Evapotranspiration is the major output.

Size of watershed: < 2.59 km² (< 1 mi²)

Other field evidence observed: This site is depressional. Driftlines and bare ground were observed.

Wetland hydrology: Yes: X No:

Rationale: Field evidence sited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:

Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is coded by the NWI as PEMC (palustrine, emergent, seasonally flooded).

Determined by: Allen Plocher (vegetation and hydrology)
David Ketzner (vegetation and hydrology)
Dennis Keene (soils and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 3 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Marsh
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4
Location: southern half of tract

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Acer negundo</i>	box elder	shrub	FACW-	1
<i>Acer saccharinum</i>	silver maple	sapling	FACW	1
<i>Alisma plantago aquatica</i>	water plantain	herb	OBL	2
<i>Ammannia coccinea</i>	ammannia	herb	OBL	5
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Asclepias incarnata</i>	swamp milkweed	herb	OBL	4
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Bidens aristosa</i>	swamp marigold	herb	FACW	1
<i>Bidens frondosa</i>	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>Campsis radicans</i>	trumpet creeper	herb	FAC	2
<i>Cardiospermum halicacabum</i>	balloon vine	herb	FAC	*
<i>Carex hyalinolepis</i>	sedge	herb	OBL	4
<i>Carex tribuloides</i>	sedge	herb	FACW+	3
<i>Carya illinoensis</i>	pecan	sapling	FACW	6
<i>Cephalanthus occidentalis</i>	buttonbush	shrub	OBL	4
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1
<i>Cyperus strigosus</i>	straw colored flatsedge	herb	FACW	0
<i>Diospyros virginiana</i>	persimmon	sapling	FAC	2
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Eclipta prostrata</i>	yerba de tajo	herb	FACW	2
<i>Equisetum arvense</i>	horsetail	herb	FAC	0
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1
<i>Fraxinus pennsylvanica</i>	green ash	shrub	FACW	2
<i>Heliannthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hibiscus laevis</i>	halberd leaf rose mallow	herb	OBL	4
<i>Hibiscus lasiocarpus</i>	hairy rose mallow	herb	FACW+	5
<i>Juniperus virginiana</i>	eastern red cedar	shrub	FACU	1
<i>Leersia oryzoides</i>	rice cutgrass	herb	OBL	3
<i>Lemna minor</i>	duckweed	herb	OBL	3
<i>Liquidambar styraciflua</i>	sweet gum	shrub	FACW	6

**Coefficient of Conservatism, as developed by Taft, Ladd, Wilhelm and Masters (1997)

Continued on following page

ROUTINE ON-SITE WETLAND DETERMINATION

Site 2 (page 4 of 4)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Marsh
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4
Location: southern half of tract

SPECIES LIST (continued)

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Ludwigia palustris</i>	marsh seedbox	herb	OBL	4
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Lycopus virginicus</i>	bugleweed	herb	OBL	5
<i>Lysimachia ciliata</i>	fringed loosestrife	herb	FACW	4
<i>Lythrum alatum</i>	winged loosestrife	herb	OBL	5
<i>Mimulus alatus</i>	winged monkey flower	herb	OBL	6
<i>Penthorum sedoides</i>	ditch stonecrop	herb	OBL	2
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*
<i>Phragmites australis</i>	common reed	herb	FACW+	1
<i>Phyla lanceolata</i>	fog fruit	herb	OBL	1
<i>Phytolacca americana</i>	pokeweed	herb	FAC-	1
<i>Pilea pumila</i>	clearweed	herb	FACW	3
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum hydropiperoides</i>	water pepper	herb	OBL	4
<i>Polygonum punctatum</i>	dotted smartweed	herb	OBL	3
<i>Populus deltoides</i>	cottonwood	tree	FAC+	2
<i>Rosa palustris</i>	swamp rose	shrub	OBL	7
<i>Rotala ramosier</i>	tooth cup	herb	OBL	4
<i>Rubus flagellaris</i>	dewberry	herb	FACU-	2
<i>Rumex verticillatus</i>	swamp dock	herb	OBL	5
<i>Sagittaria latifolia</i>	arrow head	herb	OBL	4
<i>Salix amygdaloides</i>	peach leaf willow	tree/sapling	FACW	4
<i>Salix exigua</i>	sandbar willow	sapling	OBL	1
<i>Salix nigra</i>	black willow	tree	OBL	3
<i>Scutellaria lateriflora</i>	mad dog skullcap	herb	OBL	4
<i>Sium suave</i>	water parsnip	herb	OBL	5
<i>Spermacoce glabra</i>	buttonweed	herb	FACW+	4
<i>Spirodela polyrhiza</i>	big duckweed	herb	OBL	5
<i>Stachys tenuifolia</i>	slenderleaf betony	herb	OBL	5
<i>Toxicodendron radicans</i>	poison ivy	herb/woody vine	FAC+	1
<i>Typha angustifolia</i>	narrowleaf cattail	herb	OBL	*
<i>Typha latifolia</i>	common cattail	herb	OBL	1
<i>Ulmus americana</i>	American elm	tree	FACW-	5
<i>Vitis riparia</i>	riverbank grape	herb/woody vine	FACW-	2

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

$$mCv = \sum C/N = 189/63 = 3.00$$

* Non-native species

$$FQI = \sum C/\sqrt{N} = 189/\sqrt{63} = 23.8 \quad \text{Quality} = \text{good}$$

Percent weedy or nonnative: 14/66 = 21.2%

ROUTINE ON-SITE WETLAND DETERMINATION

Site 3 (page 1 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Populus deltoides</i>	tree	FAC+
2. <i>Acer saccharinum</i>	sapling	FACW
3. <i>Carex hyalinolepis</i>	herb	OBL
4. <i>Aster simplex</i>	herb	FACW
5. <i>Equisetum arvense</i>	herb	FAC

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

Hydrophytic vegetation: Yes: X No:

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

SOILS

Series and phase: Fluvaquent

On St. Clair County hydric soils list? Yes: No: Undet: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

Redox concentrations: Yes: X No:

Redox depletions: Yes: No: X

Matrix color: N 5/ and N 6/

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

Hydric soils: Yes: X No:

Rationale: This soil has iron masses and a gleyed matrix. Furthermore, this soil meets the NRCS hydric soil indicator F2 (loamy gleyed matrix). These characteristics are evidence of a hydric soil.

ROUTINE ON-SITE WETLAND DETERMINATION

Site 3 (page 2 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

HYDROLOGY

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

Depth to saturated soil: 0 - 0.51 m (0 - 20 in)

Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow.

Evapotranspiration, sheetflow and ditchflow are the major outputs.

Size of watershed: < 2.59 km² (< 1 mi²)

Other field evidence observed: This site is depressional. Bare areas were observed.

Wetland hydrology: Yes: X No:

Rationale: Field evidence sited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:

Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is coded by the NWI as PEMC (palustrine, emergent, seasonally flooded).

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 3 (page 3 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Acer rubrum</i>	red maple	shrub	FAC	5
<i>Acer saccharinum</i>	silver maple	tree/sapl	FACW	1
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Aster simplex</i>	panicled aster	herb	FACW	3
<i>Boehmeria cylindrica</i>	false nettle	herb	OBL	3
<i>Boltonia asteroides</i>	false aster	herb	FACW	5
<i>Carex hyalinolepis</i>	sedge	herb	OBL	4
<i>Catalpa</i> sp.	catalpa	sapling	FACU	--
<i>Celtis occidentalis</i>	hackberry	seedling	FAC-	3
<i>Cephalanthus occidentalis</i>	buttonbush	shrub	OBL	4
<i>Cornus drummondii</i>	rough leaf dogwood	shrub	FAC	2
<i>Desmanthus illinoensis</i>	Illinois bundleflower	herb	FAC-	4
<i>Desmodium paniculatum</i>	tick trefoil	herb	FACU	2
<i>Diospyros virginiana</i>	persimmon	tree/sapling	FAC	2
<i>Equisetum arvense</i>	horsetail	herb	FAC	0
<i>Eupatorium serotinum</i>	late flowering thoroughwort	herb	FAC+	1
<i>Hibiscus laevis</i>	halberd leaf rose mallow	herb	OBL	4
<i>Liquidambar styraciflua</i>	sweet gum	seedling	FACW	6
<i>Lonicera maackii</i>	Amur honeysuckle	shrub	UPL	*
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*
<i>Polygonum punctatum</i>	dotted smartweed	herb	OBL	3
<i>Populus deltoides</i>	cottonwood	tree	FAC+	2
<i>Quercus palustris</i>	pin oak	sapling/seedling	FACW	4
<i>Sagittaria latifolia</i>	arrowhead	herb	OBL	4
<i>Smilax hispida</i>	bristly greenbriar	herb/woody vine	FAC	3
<i>Spermacoce glabra</i>	buttonweed	herb	FACW+	4
<i>Toxicodendron radicans</i>	poison ivy	herb/woody vine	FAC+	1
<i>Ulmus americana</i>	American elm	tree/sapling	FACW-	5
<i>Vitis riparia</i>	riverbank grape	woody vine	FACW-	2

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

* Non-native species

Percent weedy or nonnative: 6/29 = 20.7%

$$mCv = \sum C/N = 79/26 = 3.0$$

$$FQI = \sum C/\sqrt{N} = 79/\sqrt{26} = 15.5$$

Quality = fair

ROUTINE ON-SITE WETLAND DETERMINATION

Site 4 (page 1 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Young Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Acer negundo</i>	tree	FACW-
2. <i>Acer negundo</i>	sapling	FACW-
3. <i>Acer saccharinum</i>	sapling	FACW
4. <i>Boehmeria cylindrica</i>	herb	OBL
5. <i>Carex hyalinolepis</i>	herb	OBL
6. <i>Equisetum arvense</i>	herb	FAC

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

Hydrophytic vegetation: Yes: X No: X

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

SOILS

Series and phase: Fluvaquent

On St. Clair County hydric soils list? Yes: No: Undet: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

Redox concentrations: Yes: X No:

Redox depletions: Yes: No: X

Matrix color: N 5/

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

Hydric soils: Yes: X No:

Rationale: This soil has iron masses and a gleyed matrix. Furthermore, this soil meets the NRCS hydric soil indicator F2 (loamy gleyed matrix). These characteristics are evidence of a hydric soil.

ROUTINE ON-SITE WETLAND DETERMINATION

Site 4 (page 2 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Young Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

HYDROLOGY

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

Depth to saturated soil: 0.51 m (20 in)

Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow.

Evapotranspiration and sheetflow are the major outputs.

Size of watershed: $< 2.59 \text{ km}^2$ ($< 1 \text{ mi}^2$)

Other field evidence observed: This site is depressional. Bare areas were observed.

Wetland hydrology: Yes: X No:

Rationale: Field evidence sited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:

Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. The site is coded by the NWI as PEMC (palustrine, emergent, seasonally flooded).

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 4 (page 3 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Young Floodplain Forest
Legal Description: T 1 N, R 10 W, Sect.10, SW/4 NE/4, SE/4 NW/4
Location: southern half of tract

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Acer negundo</i>	box elder	tree/sapling	FACW-	1
<i>Acer saccharinum</i>	silver maple	tree/sapling	FACW	1
<i>Alisma plantago aquatica</i>	water plantain	herb	OBL	2
<i>Apocynum cannabinum</i>	dogbane	herb	FAC	2
<i>Boehmeria cylindrica</i>	false nettle	herb	OBL	3
<i>Boltonia asteroides</i>	false aster	herb	FACW	5
<i>Carex hyalinolepis</i>	sedge	herb	OBL	4
<i>Carex tribuloides</i>	sedge	herb	FACW+	3
<i>Desmanthus illinoensis</i>	Illinois bundleflower	herb	FAC-	4
<i>Desmodium paniculatum</i>	tick trefoil	herb	FACU	2
<i>Equisetum arvense</i>	horsetail	herb	FAC	0
<i>Fraxinus pennsylvanica</i>	green ash	shrub	FACW	2
<i>Geum canadense</i>	white avens	herb	FAC	2
<i>Liquidambar styraciflua</i>	sweet gum	shrub	FACW	6
<i>Lonicera maackii</i>	Amur honeysuckle	shrub	UPL	*
<i>Lonicera tatarica</i>	Tartarian honeysuckle	shrub	FACU	*
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Platanus occidentalis</i>	sycamore	tree/sapling	FACW	3
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum punctatum</i>	dotted smartweed	herb	OBL	3
<i>Rosa multiflora</i>	multiflora rose	shrub	FACU	*
<i>Rosa palustris</i>	swamp rose	shrub	OBL	7
<i>Rubus allegheniensis</i>	blackberry	shrub	FACU+	2
<i>Rubus flagellaris</i>	dewberry	herb	FACU-	2
<i>Stachys tenuifolia</i>	slenderleaf betony	herb	OBL	5
<i>Toxicodendron radicans</i>	poison ivy	herb/woody vine	FAC+	1
<i>Ulmus americana</i>	American elm	seedling	FACW-	5
<i>Vitis riparia</i>	riverbank grape	herb	FACW-	2

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

* Non-native species

Percent weedy or nonnative: 6/28 = 21.4%

$$mCv = \sum C/N = 73/25 = 2.92$$

$$FQI = \sum C/\sqrt{N} = 73/\sqrt{25} = 14.6$$

Quality = fair

ROUTINE ON-SITE WETLAND DETERMINATION

Site 5 (page 1 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Shrubland
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4, NE/4 SW/4
Location: southern portion of tract

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

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Salix exigua</i>	sapling/shrub	OBL
2. <i>Salix nigra</i>	sapling/shrub	OBL
3. <i>Cephalanthus occidentalis</i>	shrub	OBL
4. <i>Phalarus arundinacea</i>	herb	FACW+
5. <i>Polygonum amphibium</i>	herb	OBL
6. <i>Carex hyalinolepis</i>	herb	OBL

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

Hydrophytic vegetation: Yes: X No:

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

SOILS

Series and phase: Undetermined (inundated)

On St. Clair County hydric soils list?: Yes: No: Undet: X

Is the soil a histosol? Yes: No: X

Histic epipedon present? Yes: No: X

Redox concentrations: Yes: No: Undet: X

Redox depletions: Yes: No: Undet: X

Matrix color: NA

Other hydric soil indicators: Soil is saturated and had a hydrogen sulfide odor.

Hydric soils: Yes: X No:

Rationale: This site was inundated. This soil is ponded for a long duration or a very long duration during the growing season. This characteristic is evidence of a hydric soil.

ROUTINE ON-SITE WETLAND DETERMINATION

Site 5 (page 2 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Shrubland
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4, NE/4 SW/4
Location: southern portion of tract

HYDROLOGY

Inundated: Yes: X (in places) No: Depth of standing water: 0.15 – 0.41 m (6 - 16 in)

Depth to saturated soil: at surface

Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and ditch overflow.

Evapotranspiration is the major output.

Size of watershed: < 2.59 km² (< 1 mi²)

Other field evidence observed: This site is depressional. Bare areas were observed.

Wetland hydrology: Yes: X No:

Rationale: Field evidence cited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:

Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore the site is a wetland. The site is coded by the NWI as PEMC (palustrine, emergent, seasonally flooded).

Determined by: Allen Plocher (vegetation and hydrology)
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ROUTINE ON-SITE WETLAND DETERMINATION

Site 5 (page 3 of 3)

Field Investigators: Plocher, Keene, Ketzner, Zercher **Date:** 8 October 2008
Sequence No.: **Project Name:** Cahokia Compensation Site
State: Illinois **County:** St. Clair **Applicant:** IDOT District 8
Site Name: Wet Shrubland
Legal Description: T 1 N, R 10 W, Sect.10, SE/4 NW/4, NE/4 SW/4
Location: southern portion of tract

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	C**
<i>Acer negundo</i>	box elder	tree/sapling	FACW-	1
<i>Acer saccharinum</i>	silver maple	sapling	FACW	1
<i>Aster simplex</i>	panicked aster	herb	FACW	3
<i>Bidens frondosa</i>	beggar's ticks	herb	FACW	1
<i>Boltonia asteroides</i>	false aster	herb	FACW	5
<i>Carex hyalinolepis</i>	sedge	herb	OBL	4
<i>Cephalanthus occidentalis</i>	buttonbush	shrub	OBL	4
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Fraxinus pennsylvanica</i>	green ash	sapling	FACW	2
<i>Forestiera acuminata</i>	swamp privet	shrub	OBL	6
<i>Hibiscus laevis</i>	halberd leaf rose mallow	herb	OBL	4
<i>Leersia oryzoides</i>	rice cutgrass	herb	OBL	3
<i>Lycopus americanus</i>	water horehound	herb	OBL	3
<i>Phalaris arundinacea</i>	reed canarygrass	herb	FACW+	*
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Ranunculus sceleratus</i>	cursed crowfoot	herb	OBL	3
<i>Rubus flagellaris</i>	dewberry	herb	FACU-	2
<i>Rumex verticillatus</i>	swamp dock	herb	OBL	5
<i>Salix amygdaloides</i>	peach leaf willow	sapling	FACW	4
<i>Salix exigua</i>	sandbar willow	sapling	OBL	1
<i>Salix nigra</i>	black willow	tree/sapling	OBL	3
<i>Scirpus fluviatilis</i>	river bulrush	herb	OBL	3
<i>Sium suave</i>	water parsnip	herb	OBL	5
<i>Sparganium eurycarpum</i>	bur reed	herb	OBL	5
<i>Typha angustifolia</i>	narrow leaf cattail	herb	OBL	*

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

* Non-native species

Percent weedy or nonnative: 5/25 = 20.0%

$$mCv = \sum C/N = 75/23 = 3.26$$

$$FQI = \sum C/\sqrt{N} = 75/\sqrt{23} = 15.6$$

Quality = fair

Cahokia Mitigation Site St. Clair County



0 400 800 Feet

scale 1:4800
1 inch=400 ft

0 100 200 Meters

 Project and site boundaries

