

Report Information

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Calumet Segment

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Floristic Quality Assessment

Marquette Greenway Trail, Calumet Section

1.0 Introduction

Soil Solutions, Inc. completed a floristic quality assessment of a 170-acre project area associated with the Marquette Greenway Trail project, Calumet Section (Appendix A, Figures 1 – 2). Porter County plans to develop about 6.8 miles of trail that will run between the Dune Park Train Station on State Road 149 and Lake Shore County Road along the NIPSCO/Calumet Trail corridor. A 200 to 300-foot corridor was assessed around the planned trail route. This area included the Great Marsh interdunal wetland complex and the Glenwood – Calumet Dunes Forest system just to the south. Within the Glenwood – Calumet Dunes are interdunal wetlands, depressional forested wetlands, and a mesic/floodplain forest complex along Dunes Creek/Munson Ditch. The project area has been divided into seven sections (Appendix A, Figure 3.0).

The west end of the project area is the most disturbed. This area is found between State Road 49 to Hadenfelt Road (Sections 1-3; Appendix A, Figure 3.0). This area has been impacted in the past with either residential development or possibly agricultural use. It was clear that some of the area had either been farmed or clearcut. Much of the dune forest in this area is heavily degraded. A tributary of Dunes Creek, Munson Ditch (Stream 3) runs through this area (Section 3). The creek meanders through a stream valley with diverse species along the floodplain and adjacent seeps. This area though diverse, is also threatened by invasive species (Japanese barberry, *Berberis thunbergii*). Overall, the west end of the project area is the most disturbed.

The central portion of the project area, between Highway 12 and Furnessville Road (Sections 4 and 5; Appendix A, Figure 3.0), encompasses dune forest along the Calumet Dunes as well as the interdunal wetland system to the south. Portions of this dune forest community were developed with roads and houses which fragmented the landscape. The areas around the USGS office on Kemil Road and east towards Oakwood Street (Section 6) have extensive areas dominated by invasive shrubs such as burning bush (*Euonymus alatus*). The portions of dune forest outside of the areas that were formerly residential development are still high quality with a largely open understory. Many locations of sensitive species have been identified within this portion of the project area.

The eastern end of the project area and trail route runs through the Great Marsh wetland complex from Lake Shore County Road to Kemil Road (Section 7; Appendix A, Figure 3.0). An extensive network of roads was developed and abandoned within the marsh over the past 100 years. The east end of the project area largely runs along these old roadbeds or within the existing NIPSCO utility corridor. Where the roadbeds run through forested wetland (hydromesophytic swamp forest), the adjacent wetlands are high quality with limited invasive species. However, the roadbeds within the wetlands are overgrown with a mixture of native and non-native shrubs. Where the roadbeds run through upland forest, the

roadbeds and adjacent dune forest are dominated by Asian bittersweet (*Celastrus orbiculatus*) and non-native shrubs such as autumn olive (*Elaeagnus umbellata*) or multiflora rose (*Rosa multiflora*).

This floristic quality assessment includes vegetation surveys for the hydromesophytic swamp forest, wet prairie and old field/dry prairie along the Calumet Trail, dune forest, forested wetland, and roadbeds. The hydromesophytic swamp forest is only found at the east end of the project area in Beverly Shores. Within the project area, the wet prairie community is only found along the Calumet Trail. Dry prairie/old field includes dry prairie along the trail as well as small prairie openings within dune forest or areas that are open because of past development. Dune forest includes all upland forest within the project area. Forested wetland includes the interdunal wetlands south of the Calumet Dunes, forested wetland seeps adjacent to Munson Ditch, and forested wetland found along narrow drainage ways. The final community type is roadbed which includes the filled roadbeds within the Great Marsh wetland system as well as roadbeds that were developed and abandoned throughout the rest of the project area. Areas with grass lawn are mapped in the plant community maps but these areas were not surveyed.

Maps with locations of sensitive species found within the project area have been shared with Indiana Dunes National Park Resource Management staff. Details on species found are included in Section 3.2 below but mapped locations are not included in this report.

2.0 Methods

The project area is 170 acres in size but only about 157 acres was vegetated and surveyed (Appendix A). Areas developed with roadways, buildings, and adjacent lawns were not included. Six community types were identified on site. Dune forest makes up the largest percentage of the project area at 60%. Hydromesophytic swamp forest encompasses 20%, wet prairie is 7%, vegetated roadbeds are 6%, forested wetland is 4%, and dry prairie makes up the remaining 2% of the project area. Communities were surveyed using a meander survey within each community type during visits from May through October 2022. Photos were taken of each community type and are included in this report. The community types are mapped in Appendix A. The Floristic Quality Index (FQI) was calculated for each community type using the U.S. Army Corps of Engineers – Chicago Districts' FQA Calculator (November 2017; Appendix B).

A review of the Indiana Department of Natural Resources, Natural Heritage Database identified a long list of species found within a half mile of the project area (Appendix C). The list includes amphibians, arachnids, birds, insects, mammals, reptiles, plants, and natural communities. Soil Solutions, Inc. met with U.S. Geological Survey (USGS) and National Park Service (NPS) staff to review known threatened, endangered, and sensitive plant species locations near the project area. These combined lists were used to survey for threatened and endangered plant species within the project area.

2.1 Floristic Quality Assessment and Coefficient of Conservation

The Floristic Quality Assessment includes data on the coefficient of conservation (C value) for each plant species. The C value is an integral value from 0 to 10 that was initially developed by Floyd Swink and Gerould Wilhelm in the 4th edition of *Plants of the Chicago Region*, 1996. The C value is based on the fact that remnant natural plant communities (prairie, savanna, forest, etc.) tend to be inhabited by groups of species faithful to those specific community types. Plants have varying degrees of fidelity to specific community types and varying tolerances to habitat disturbance. The floristic quality of an areas is reflected by the inhabitance of higher quality (higher value) plant species. Plants and animals live in places where they have adapted or evolved to grow. If the habitat changes the groups of plants and animals living there will change as well.

The C value is a number assigned to indicate how certain one can be that a specific plant species was found in a remnant natural plant community. Plants that have a higher fidelity to a certain community type are assigned a higher value on a scale of 1 to 10. For example, flowering dogwood (Cornus florida) is assigned a C value of 8. It is a characteristic species of mesic forests. If flowering dogwood is observed in a forest, one can be reasonably sure that the forest is part of a remnant natural community. If this species is observed with a variety of other high C value species, it indicates that this area has had limited disturbance since European settlement. On the other hand, a species like poison ivy (Rhus radicans) has a C value of 2. This species can tolerate disturbance and grows in a variety of community types. If this species was observed growing in a forest community with a variety of other low C value species, it would indicate that the forest had a significant amount of disturbance from events such as clear cutting, cattle grazing, land clearing and subsequent re-growth, etc. Non-native plants are assigned a C value of 0 because they did not evolve in a native landscape. Weedy, ruderal species are assigned C values at the lowest end of the scale; species that would grow in a sidewalk crack, an industrial site, or along the edge of a highway would have a C value of 0 or 1. A middle value of 5 would be applied to species that are generally found in high quality areas but can tolerate higher levels of disturbance than some of the higher quality species.

Assignment of C values allows for the use of the Floristic Quality Index (FQI), a tool to assess the quality of natural or remnant plant communities. The FQI allows for a comparison between plant communities, between sites, or at an individual site over time. The FQI is a single number that can be used to compare floristic quality and is calculated by multiplying the mean C value (C) by the square root of the total number (N) of species observed: FQI =CVN. According to *Plants of the Chicago Region*:

"Generally, if the C value for the site is 3.5 or higher or has an *I* value of 35 or more, one can be fairly confident that the site has sufficient floristic quality to be at least of marginal natural area quality. If the C value is 4.5 or higher, or has an *I* value of 45 or more, then it is almost certain that the remnant has natural area potential."

2.2 National Wetland Categories

The U.S. Fish and Wildlife Service has assigned national wetland categories to each plant species. Plants are designated as obligate wetland, facultative wetland, facultative, facultative upland, or upland. The wetland category indicates the percent probability of the species occurrence in wetlands as follows:

- OBL Obligate Wetland, occurs with an estimated 99 percent probability of occurrence in wetlands
- FACW Facultative Wetland, estimated 67 to 99 percent probability of occurrence in wetlands
- FAC Facultative equally likely to occur in wetlands and non-wetlands (34 to 66 percent probability)
- FACU Facultative Upland, 67 to 99 percent probability in non-wetlands, 1 to 33 percent in wetlands
- UPL Obligate upland, greater than 99 percent probability in non-wetlands in this region.

For purposes of calculating an average wetness value, a numerical value is assigned for each wetland category ranging from -2 for obligate wetland species to +2 for upland species. This number is represented as W in the data tables below. Plant communities with an average wetland value in the FAC, FACW, to OBL (0 to -2) range would likely be classified as wetland.

2.3 Summary Data

Each plant community type is summarized in the Results section below. All of the species observed in each plant community are listed Appendix B. The data for each community also includes summary data on the floristic quality measures as calculated by the Chicago District's USACE Chicago Region Floristic Quality Assessment Calculator (version 11 – November 17, 2017). The table below defines each measure.

TABLE 1. FLORISTIC QUALITY SUMMARY DATA

FLORISTIC QUALITY DATA	DEFINITION
Native species	Total number of native species observed
Total Species	Total number of plant species observed
% Native	The percent of native species observed out of the total number of species observed
Mean C (native species)	The mean coefficient of conservatism(C) value for the plant community. This number is calculated without including the non-native (adventive) species observed.
Mean C (all species)	The mean coefficient of conservatism(C) value for the plant community. This number is calculated with all of the non-native (adventive) species included.
FQAI (native species)	The FQI value calculated using only the native species observed.
FQAI (all species)	The FQI value calculated using all the species observed.
Species Richness (all)	Total number of species observed.

FLORISTIC QUALITY DATA	DEFINITION
Species Richness (native)	Total number of native species observed.
% Non-native	Percent of non-native species observed.
Wet Indicator (native)	The mean wetness value of the community. Calculated excluding all nonnative (adventive) species.
Wet Indicator (all)	The mean wetness value of the community. Calculated including all species.

3.0 Results

3.1 Floristic Quality Assessment

3.1.1 Dune Forest

The Dune Forest community type makes up the majority of the project area (60% of the total). This community type includes intact dune woodland forest dominated by oak (Quercus) species with a native understory, disturbed upland forest with a canopy of native tree species but a disturbed understory, as well as upland forest that has little native integrity left and is almost completely dominated by non-native species. This community type is primarily found south of U.S. Highway 12 within the Calumet Dune/Glenwood Dune system (Appendix A, Figures 3.1 - 3.4). Each of the plant communities was assigned a quality value of either high, moderate, or low quality (Appendix A, Figures 4.1 - 4.4).

Dune forest with an intact canopy of oaks with a diverse native understory with limited invasive species was categorized as high quality (Photo 1 below). High quality dune forest had a canopy of oaks (*Quercus* spp.), hickory (*Carya ovata*), sassafras (*Sassafras albidum*), and red maple (*Acer rubrum*) with a variety of small trees and shrubs in the understory including American witch-hazel (*Hamamelis virginiana*), Maplewood viburnum (*Viburnum acerifolium*), and blueberry (*Vaccinium* spp.).

Dune forest with an intact canopy and understory but with moderate levels of invasive species was considered moderate quality (Photo 2). This forest had similar diversity of species but the understory had invasive species such as Asian bittersweet (*Celastrus orbiculatus*), burning bush (*Euonymus alatus*), or multiflora rose (*Rosa mulitflora*). Native understory trees, shrubs, as well as native herbaceous species are still present in these areas.

Dune forest that was dominated by non-native or ruderal species (Photo 3) or areas that had intact canopy but an understory that was dominated by non-native species (Photo 4) were categorized as low quality. These areas had been significantly disturbed in the past. Some of the low quality dune forest areas had a forest canopy dominated by black locust (*Robinia pseudoacacia*) with a groundcover of common periwinkle (*Vinca minor*) or climbing euonymus (*Euonymus hederaceus*). Other areas of low quality dune forest still had some canopy of native trees such as red oak (*Quercus rubra*) and black cherry (*Prunus serotina*) but had an understory dominated by invasive shrubs or vines such as burning bush or Asian bittersweet.

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Photo 1. Representative view of high quality dune forest with an intact understory and limited invasive species (facing W; October 14, 2022).



Photo 2. Moderate quality dune forest along Furnessville Road (facing N; June 1, 2022).



Photo 3. Low quality dune forest in an area that had been cleared in the past. Black locust and invasive ground cover species dominate here (facing N; October 20, 2022).



Photo 4. Low quality dune forest in an area where the understory is dominated by a thicket of burning bush (facing S; October 14, 2022).

3.1.2 Swamp Forest

The Swamp Forest community type makes up the next largest percentage of the project area (20%). Swamp Forest is found north of U.S. Highway 12 (Appendix A, Figures 3.5 – 3.7). This community type includes the hydromesophytic swamp forest within the Great Marsh wetland complex. This diverse community type is almost all considered high quality within the project area (Photo 1 below). Within the high quality swamp forest, the canopy included species such as pin oak (*Quercus palustris*), black tupelo (*Nyssa sylvatica*), and red maple (*Acer rubrum*). Common understory shrubs included spice bush (*Lindera benzoin*) and winterberry holly (*Ilex verticillata*). A small amount of Swamp Forest near the Beverly Shores town buildings is degraded with an understory of reed canary grass (*Phalaris arundinacea*) (Photo 2). The floristic quality data for this community type is included in Appendix B. Representative photos of the swamp forest community type are below.



Photo 5. Representative view of high quality Swamp Forest with an understory of lizard tail (*Saururus cernuus*), royal fern (*Osmunda spectabilis*), sedges (*Carex* spp.) and rushes (*Juncus* spp.) (facing W; June 17, 2022).



Photo 6. Low quality swamp forest adjacent to Service Avenue and near the Beverly Shores town buildings. Here the understory was dominated by reed canary grass (*Phalaris arundinacea*) with a canopy of green ash (*Fraxinus pennsylvanica*) (facing N; June 2, 2022).

3.1.3 Wet Prairie

The Wet Prairie community type cover about 7% of the project area and includes wet-mesic prairie. This community type is found exclusively along the existing Calumet Trail and south of the hydromesophytic swamp forest (Appendix A, Figures 3.5 - 3.7). This is a diverse community type but much of it within the project area is degraded. It is adjacent to the Calumet Trail on land owned by NIPSCO. Installation of a utility line within the past five years disturbed portions of the project area. Wet prairie was assigned a quality value of either high, moderate, or low quality (Appendix A, Figures 4.5 - 4.7). Wet prairie with a diversity of herbaceous species but with moderate levels of invasive species is considered moderate quality (Photo 6).

Moderate quality wet prairie was dominated by a variety of species in the Asteraceae including parasol white-top (*Doellingeria umbellata*), flat-top goldentop (*Euthamia graminifolia*), spotted trumpetweed (*Eupatorium maculatum*), sunflowers (*Helianthus* spp.), goldenrods (*Solidago* spp.), and asters (*Symphyotrichum* spp.). Other dominant species included rushes (*Juncus* spp.), sedges (*Carex* spp.), and

the invasive species purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis ssp. australis*), and cattail (*Typha x glauca*).

Wet prairie that was dominated by non-native/invasive species was categorized as low quality (Photo 7). The floristic quality data for this community type is included in Appendix B. These areas were dominated by either cattail, common reed, purple loosestrife, or a combination thereof.



Photo 7. Representative view of moderate quality wet prairie along the Calumet Trail (facing NW; October 4, 2022).



Photo 8. Low quality wet prairie along the Calumet Trail is dominated by either cattail (*Typha x glauca*) or common reed (*Phragmites australis*) (facing N; June 2, 2022).

3.1.4 Forested Wetland

The Forested Wetland community type covers about 4% of the project area. This includes small areas of forested wetland located in depressional areas between dunes, forested wetlands along streams and drainage ways and forested seeps along the base of hill slopes (Appendix A, Figures 3.1 - 3.4). Most of the forested wetland on site was moderate quality. The most degraded forested wetland was in Section 1 at the far west end of the project area near State Road 49. This community type was assigned a quality value of either high, moderate, or low quality (Appendix A, Figures 4.1 - 4.4).

Forested Wetland with a diversity of species and limited cover of invasive species was considered high quality (Photo 8). This community type was dominated by red maple, button bush (*Cephalanthus occidentalis*), sedges, and rushes and ferns such as cinnamon fern (*Osmunda cinnamomeum*) and royal fern (*Osmunda spectabilis*).

Areas with limited herbaceous diversity or moderate invasive species cover were considered moderate quality (Photo 9). Moderate quality forested wetland included similar species but with less diversity,

cover, or with moderate levels of invasive species present.

Forested Wetland that was dominated by non-native species was categorized as low quality (Photo 10). This forested wetland (see Section 1; Figure 4.1, Appendix A) was dominated by invasive species in the understory with limited floristic diversity. Floristic quality data for the forested wetland community type is included in Appendix B. Representative photos of each are below.



Photo 9. Representative view of high-quality forested wetland within an interdunal wetland system south of the Calumet Dunes and north of Furnessville Road (facing SW; May 4, 2022).



Photo 10. Moderate quality forested wetland in a depression between Highway 12 and the Calumet Dune system (facing W; June 3, 2022).



Photo 11. Low quality forested wetland along an ephemeral stream channel near SR 49. The understory was dominated by reed canary grass (*Phalaris arundinacea*) (facing W; June 3, 2022).

3.1.5 Roadbed

The Roadbed community type includes vegetated and abandoned road beds within the project area. The community makes up about 6% of the project area. This includes Wendell Street, Manning Avenue, Service Avenue, and Mertz Avenue in Beverly Shores and Teale Drive between the Tremont and Furnessville areas. (Appendix A, Figures 3.3-3.7). The roadbeds within Beverly Shores have a sandy/gravel/slag surface and have some native vegetation mixed with invasive/non-native species. Teale Drive has a more solid, compacted gravel surface and so is more sparsely vegetated with non-native and weedy species. This community type is considered low quality throughout the project area aside from a small section of moderate quality roadbed along Wendell Street in Beverly Shores (Appendix A, Figures 4.0-4.7). Photos along different sections of roadbed are included below. The floristic quality data for this community type is included in Appendix B.



Photo 12. Representative view of moderate quality roadbed running through hydromesophytic swamp forest in Beverly Shores along Wendell Street. Vegetation in this area included a mixture of native species as well as non-natives. Spice bush (*Lindera benzoin*) was a dominant shrub in this section of roadbed along with multiflora rose (*Rosa multiflora*), and autumn olive (*Elaeagnus umbellata*) (facing E; October 5, 2022).



Photo 13. A short section of paved roadway within Beverly Shores and the trail route (Manning Avenue) (facing N; October 5, 2022).



Photo 14. Representative view of low-quality roadbed community type on Service Avenue in Beverly Shores. The adjacent community is dune forest, and the roadbed and adjacent upland forest is dominated by Asian bittersweet (*Celastrus orbiculatus*) (October 5, 2022).



Photo 15. A representative view of low-quality roadbed community type along Teale Drive (facing SE; October 14, 2022).

3.1.6 Dry Prairie

The Dry Prairie community type covers about 2% of the project area. This community type is found along the Calumet Trail and in open clearings or old homesite areas within dune forest (Appendix A, Figures 3.1-3.7). This community type has only moderate diversity as much of this dry community is dominated by Asian bittersweet (*Celastrus orbiculatus*). Dry prairie was assigned a quality value of either moderate or low quality (Appendix A, Figures 4.0-4.7). Dry prairie that was not dominated by invasive species is considered moderate quality (Photo 15). Dry prairie that was dominated by non-native/invasive species was categorized as low quality (Photo 16). The floristic quality data for this community type is included in Appendix B. Representative photos of each are below.



Photo 16. Representative view of moderate quality dry prairie along the Calumet Trail (facing SW; October 5, 2022).



Photo 17. Low quality dry prairie in a former homesite along Hadenfelt Road (facing S; October 20, 2022).

3.2 Threatened and Endangered Species

An Indiana DNR Natural Heritage Database review request returned a list of 62 Endangered, Threatened, and Rare (ETR) plants documented within 0.5 miles of the project area. Plants on this list are identified in Table 2 below and in Appendix C.

TABLE 2. ETR SPECIES DOCUMENTED WITHIN 0.5 MILES OF THE PROJECT AREA.

Scientific Name	Common Name	State Listing
Aralia hispida	bristly sarsaparilla	SE
Carex atherodes	awned sedge	SE
Carex leptonervia	finely-nerved sedge	SE
Cornus rugosa	roundleaf dogwood	SE
Dryopteris clintoniana	Clinton's woodfern	SE
Juncus pelocarpus	brown-fruited rush	SE
Lathyrus japonicus	beach peavine	SE
Lathyrus ochroleucus	pale vetchling peavine	SE
Lycopodiella inundata	northern bog clubmoss	SE
Lycopodiella subappressa	northern appressed bog clubmoss	SE
Orobanche fasciculata	clustered broomrape	SE
Piptatheropsis pungens	slender mountain-ricegrass	SE
Polygala paucifolia	gay-wing milkwort	SE
Populus balsamifera	balsam poplar	SE
Schoenoplectiella hallii	Hall's bulrush	SE
Scirpus expansus	bulrush	SE
Sisyrinchium montanum	strict blue-eyed-grass	SE
Trillium cernuum var. macranthum	nodding trillium	SE
Actaea rubra ssp. rubra	red baneberry	ST
Arctostaphylos uva-ursi	bearberry	ST
Aristida tuberculosa	seabeach needlegrass	ST
Botrychium matricariifolium	chamomile grape-fern	ST
Carex flava	yellow sedge	ST
Carex folliculata	long sedge	ST
Carex seorsa	weak stellate sedge	ST
Chrysosplenium americanum	American golden-saxifrage	ST
Circaea alpina	small enchanter's nightshade	ST
Cypripedium candidum	small white lady's-slipper	ST
Dichanthelium boreale	northern witchgrass	ST
Dichanthelium lucidum	shining panic-grass	ST
Diphasiastrum tristachyum	deep-root clubmoss	ST

Scientific Name	Common Name	State Listing
Eleocharis geniculata	capitate spike-rush	ST
Eleocharis melanocarpa	black-fruited spike-rush	ST
Epigaea repens	trailing arbutus	ST
Eurybia furcata	forked aster	ST
Hudsonia tomentosa	sand-heather	ST
Juglans cinerea	butternut	ST
Juncus scirpoides	scirpus-like rush	ST
Milium effusum	tall millet-grass	ST
Myosotis laxa	smaller forget-me-not	ST
Pinus banksiana	jack pine	ST
Pinus strobus	eastern white pine	ST
Piptochaetium avenaceum	blackseed needlegrass	ST
Platanthera psycodes	small purple-fringe orchid	ST
Poa paludigena	bog bluegrass	ST
Polygonum articulatum	eastern jointweed	ST
Potamogeton pulcher	spotted pondweed	ST
Potentilla anserina	silverweed	ST
Prunus pensylvanica	fire cherry	ST
Pyrola americana	American wintergreen	ST
Rhexia mariana var. mariana	Maryland meadow beauty	ST
Schoenoplectiella purshiana	weakstalk bulrush	ST
Schoenoplectiella smithii	Smith's Bulrush	ST
Scleria reticularis	reticulated nutrush	ST
Sparganium androcladum	branching bur-reed	ST
Symphyotrichum boreale	rushlike aster	ST
Thalictrum pubescens	tall meadowrue	ST
Viola primulifolia	primrose-leaf violet	ST
Clintonia borealis	Clinton's lily	SX
Dichanthelium mattamuskeetense	panic-grass	SX
Platanthera hookeri	Hooker's orchid	SX
Sceptridium multifidum	leathery grape-fern	SX

3.2.1 Sensitive Plant Species

Several threatened, endangered, or sensitive plant species were found within the project area during site visits in 2022 (Table 3 below). The largest concentration of sensitive species was found in the Calumet Dunes and Furnessville areas (Sections 4 and 6) where multiple populations have been mapped

and monitored in the past. Plant locations have been shared with NPS staff and coordination is ongoing for trail routing near and around the species within the impact area.

TABLE 3. THREATENED, ENDANGERED, AND SENSITIVE SPECIES IDENTIFIED DURING FIELD SURVEYS IN 2022.

SPECIES NAME (NWPL/MOHLENBROCK)	COMMON NAME		NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	
Adiantum pedatum	Northern Maidenhair fern	10	FACU	1	
Aristida tuberculosa	Beach Three-Awn	9	UPL	2	
Asplenium platyneuron	Ebony Spleenwort	3	FACU	1	
Botrypus virginianus	Rattlesnake Fern	5	FACU	1	
Carex folliculata	Northern Long Sedge	10	OBL	-2	
Chimaphila maculata	Spotted Wintergreen	10	UPL	2	
Chrysosplenium americanum	American Golden-Saxifrage	10	OBL	-2	
Gaultheria procumbens	Eastern Teaberry	9	FACU	1	
Heserostipa spartea	Porcupine Grass	8	UPL	2	
Mitchella repens	Partridge-Berry	10	FACU	1	
Pyrola americana	American Wintergreen	10	FAC	1	
Pyrola elliptica	Shinleaf	10	FACU	1	
Tradescantia subaspera	Broad-Leaf Spiderwort	7	UPL	2	

3.2.2 Federally Listed Species

According to the U.S. Fish and Wildlife Service's Information for Planning and Consultation website, the federally listed threatened and endangered species present in the project area includes the Indiana bat, northern long-eared bat, and eastern massasauga. About 5.5 miles of the route will run through forest which includes potential roosting habitat for both bat species. The wet prairie habitat along the existing Calumet Trail is the appropriate habitat for the eastern massasauga and this species has been identified along the trail in Beverly Shores within the last 20 year (personal communication, USGS).

4.0 Summary and Conclusions

4.1 Summary

TABLE 4. COMPARISON OF MEAN C VALUES AND FQI VALUES FOR ALL COMMUNITIES.

CONSERVATISM- BASED METRICS	Dune Forest	Swamp Forest	Wet/Mesic Prairie	Forested Wetland	Roadbed	Dry Prairie
ACRES	94	31	11	9	7	4
MEAN C (NATIVE SPECIES)	4.80	6.05	4.39	5.04	3.52	3.97
MEAN C (ALL SPECIES)	3.75	5.77	3.73	4.41	2.42	2.54
FQAI (NATIVE SPECIES)	54.36	48.00	39.04	46.42	30.88	22.45
FQAI (ALL SPECIES)	48.02	46.90	35.98	43.46	25.61	17.96
SPECIES RICHNESS (ALL)	164	66	93	97	112	50
SPECIES RICHNESS (NATIVE)	128	63	79	85	77	32
% NON-NATIVE	22%	5%	15%	12%	31%	36%
WET INDICATOR (ALL)	0.69	-0.62	-0.90	-0.46	0.41	0.78
WET INDICATOR (NATIVE)	0.54	-0.68	-1.04	-0.54	0.16	0.59

4.2 Conclusions

Soil Solutions, Inc. completed a floristic quality analysis of a 200 – 300 foot wide corridor along the planned route for the Marquette Greenway Trail – Calumet Section. The trail project runs through the Great Marsh interdunal wetland complex and then south through the Calumet-Glenwood Dunes system. The vegetation inventory identified six community types: dune forest, swamp forest, wet/mesic prairie, forested wetland, roadbeds, and dry prairie. Each community type was then classified based on quality as either high, moderate, or low quality where diverse communities with limited invasive species cover were considered high quality; diverse or moderately diverse communities with moderate invasive species cover were considered moderate quality; and plant communities dominated by invasive or non-native species were considered low quality.

Dune forest made up the largest percentage of the survey area at 94 acres. This community type had the highest floristic quality assessment index value (48.02) and the highest concentration of known ETR and sensitive species. The swamp forest (31 acres), forested wetland (9 acres), and wet mesic prairie (11 acres) were also diverse all with FQI values over 35.0 which is the minimum value to be considered natural area quality. The two lowest quality communities, roadbeds (7 acres) and dry prairie (4 acres), are found in disturbed, fragmented landscapes. These areas are dominated by invasive, non-native, and ruderal species and have the lowest FQI values. The Indiana Dunes National Park was originally protected and dedicated in part because of the floristic diversity here and that is reflected in the vegetation survey within the project area.

Quality varies across each of the community types with the highest quality areas found furthest from past disturbance. It appears based on the areas surveyed within the project limits that the areas with the most coverage of non-native and invasive species were found near and around areas that were formerly residential development. Additionally, wet/mesic prairie along the existing Calumet Trail has been repeatedly disturbed because of its location within a utility line corridor. Large sections of wetland within this area were dominated by invasive species while wetland outside of this corridor (swamp forest, forested wetland) was higher quality.

The highest quality areas were located in the eastern half of the project area within Sections 6 and 7 and included dune forest south of U.S. Highway 12 and the hydromesophytic swamp forest in Beverly Shores. The largest concentration of ETR and sensitive species were found in high and moderate quality dune forest in Sections 4 and 6. The project engineer has been coordinating closely with the National Park Service to minimize impacts to these high quality plant communities and sensitive species as much as possible.

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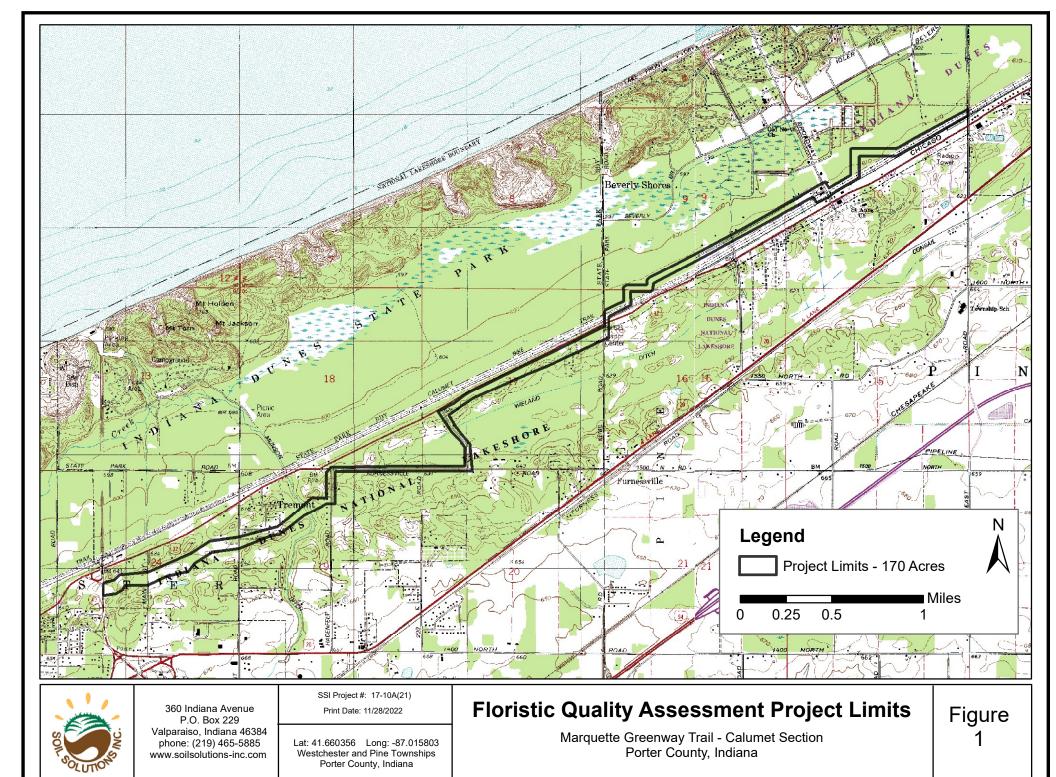
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APPENDIX A REPORT FIGURES





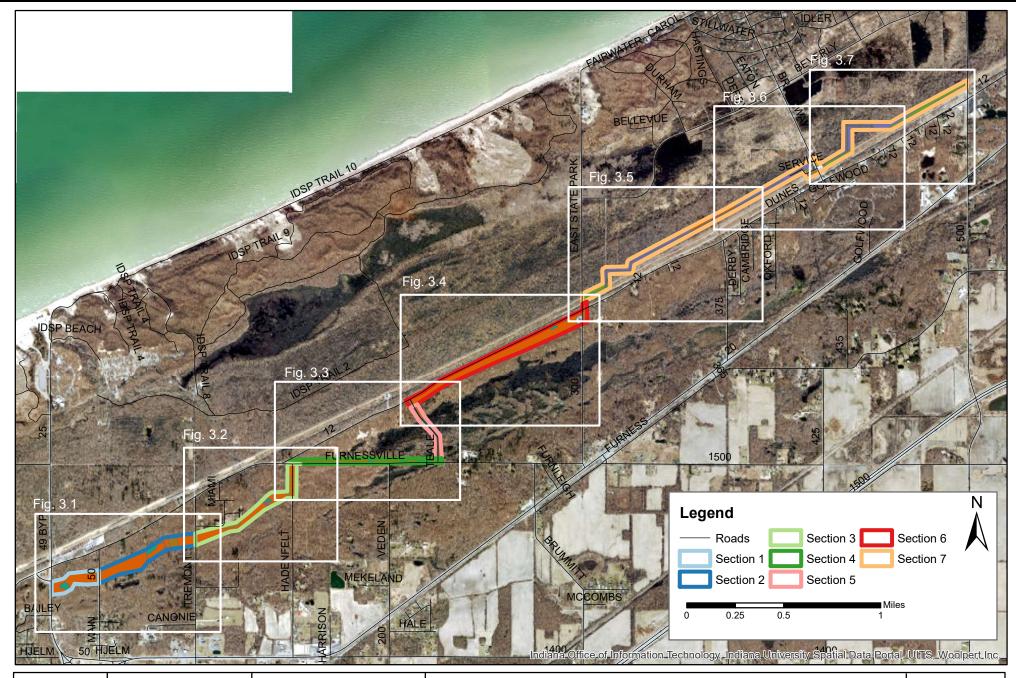


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Floristic Quality Assessment Project Limits

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 2



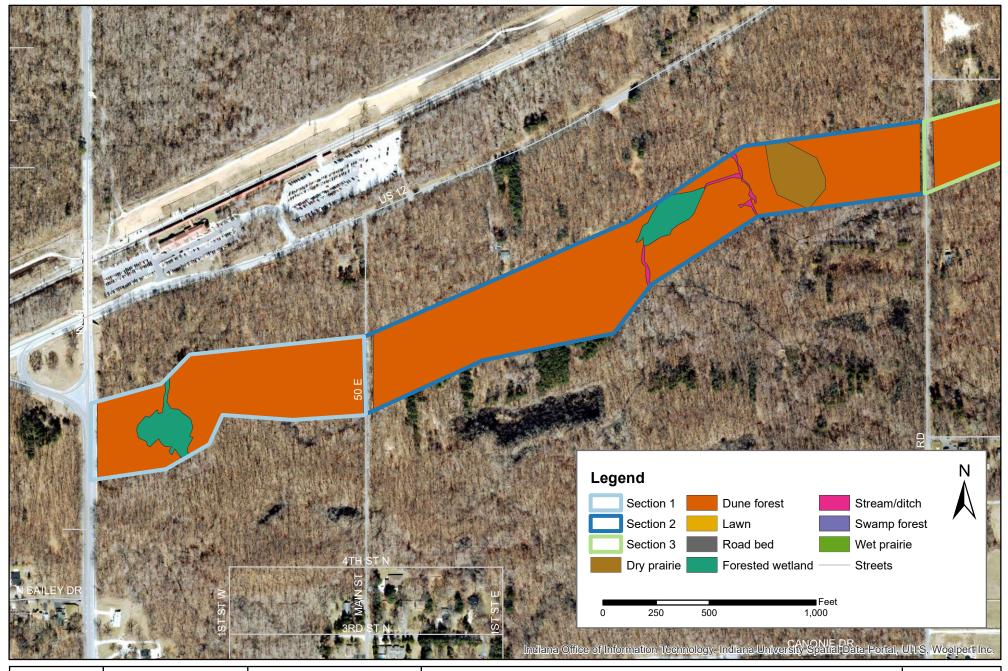


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana



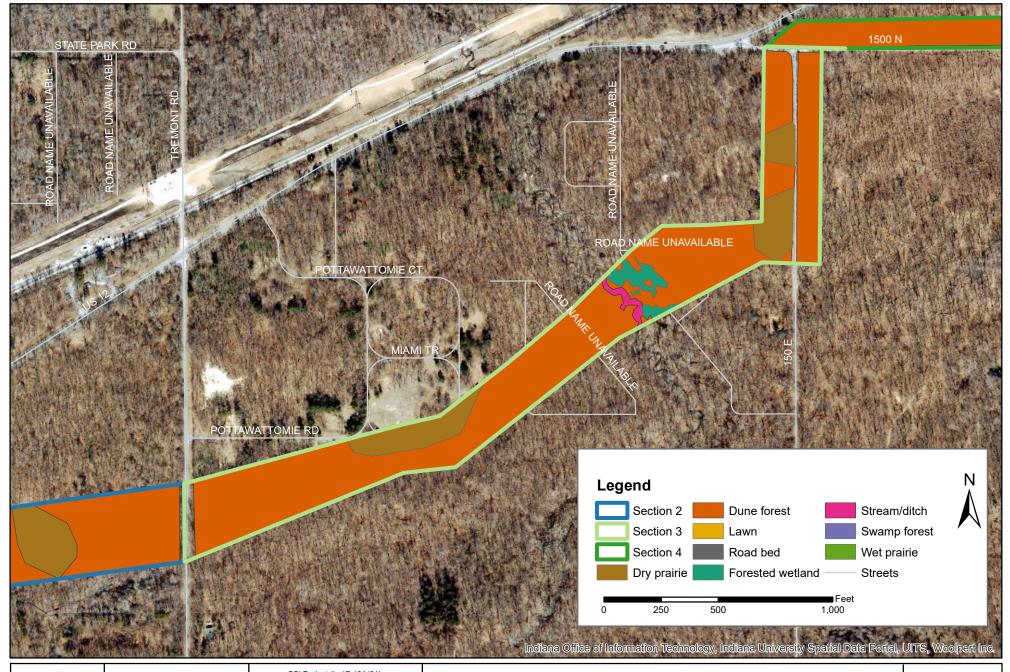


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana



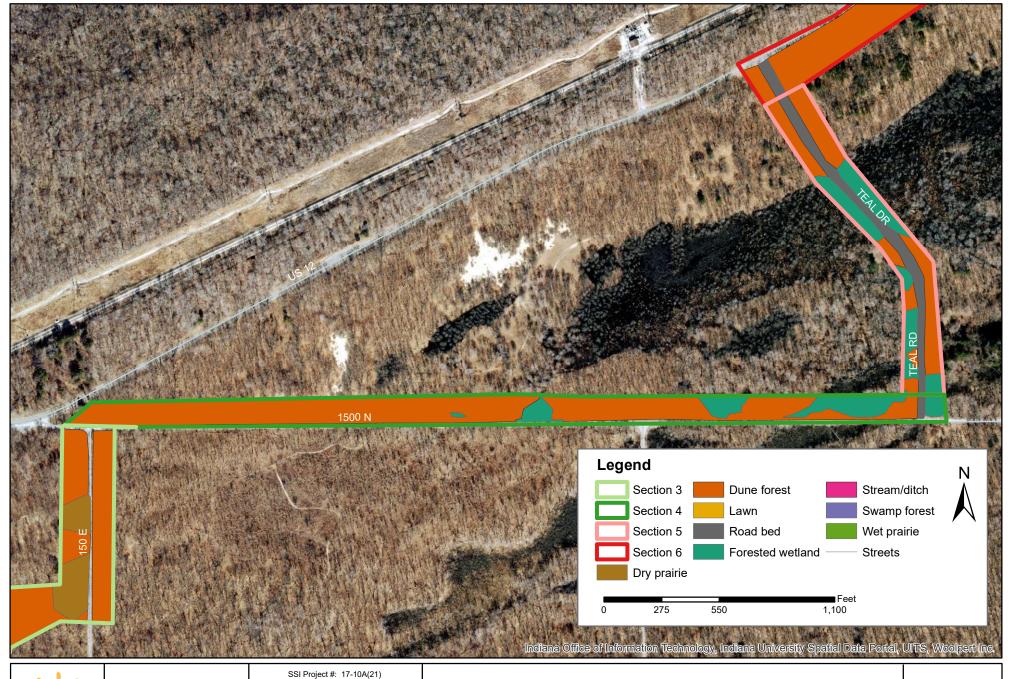


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana



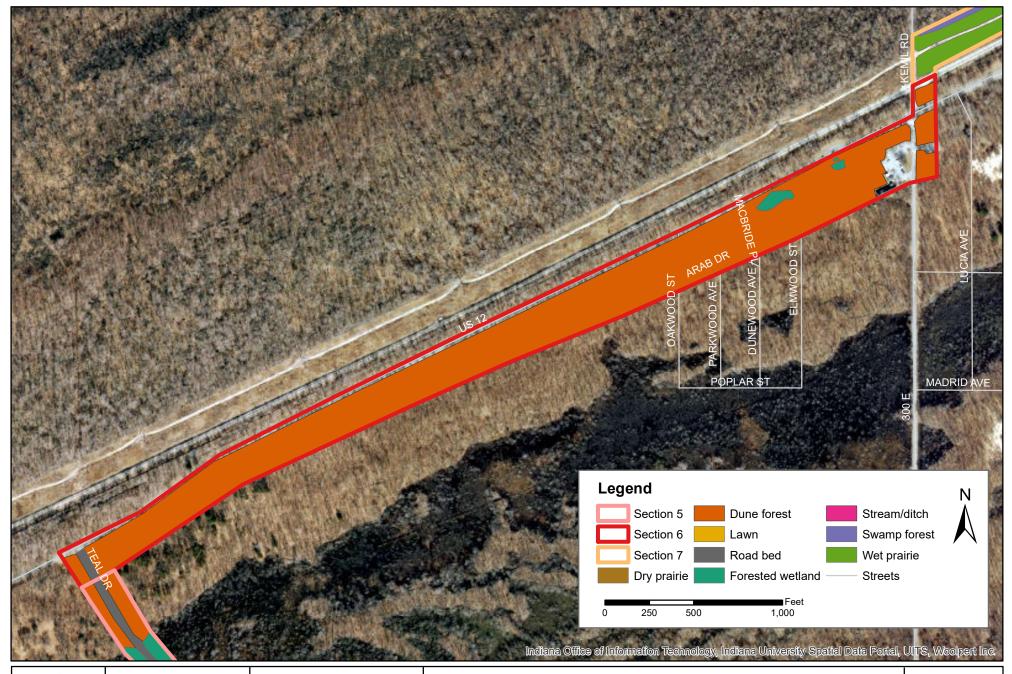


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Plant Community Types

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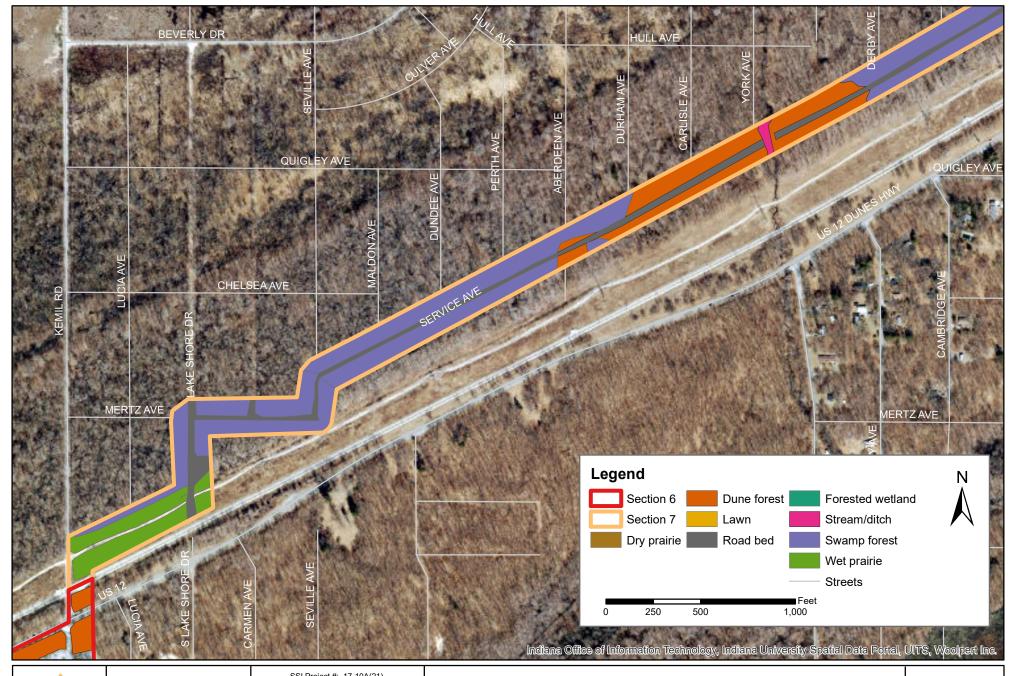


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana



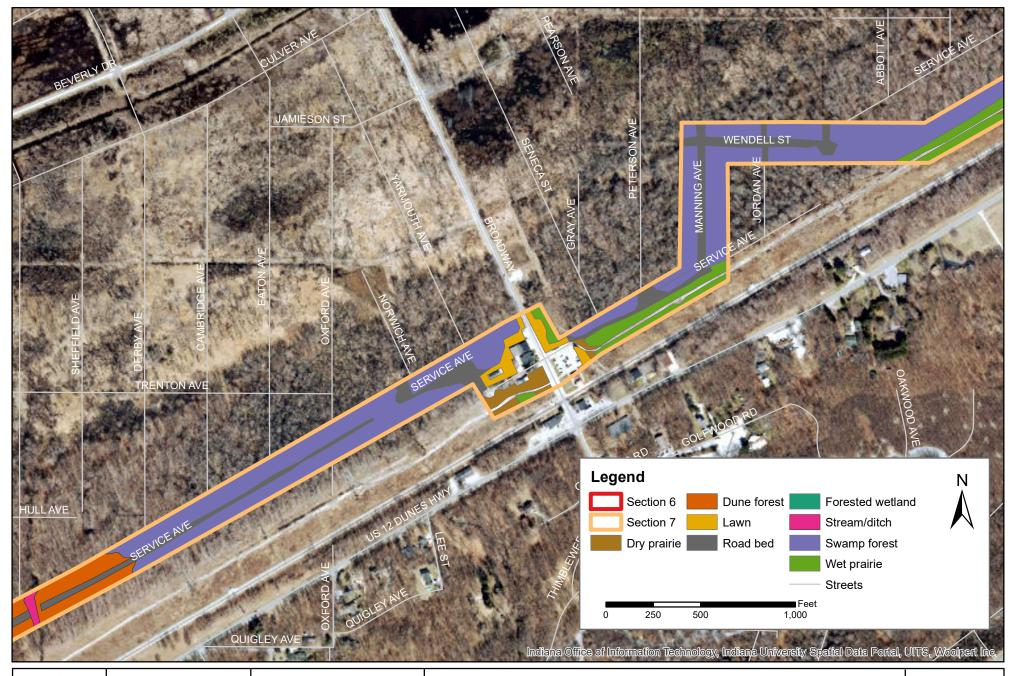


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Plant Community Types

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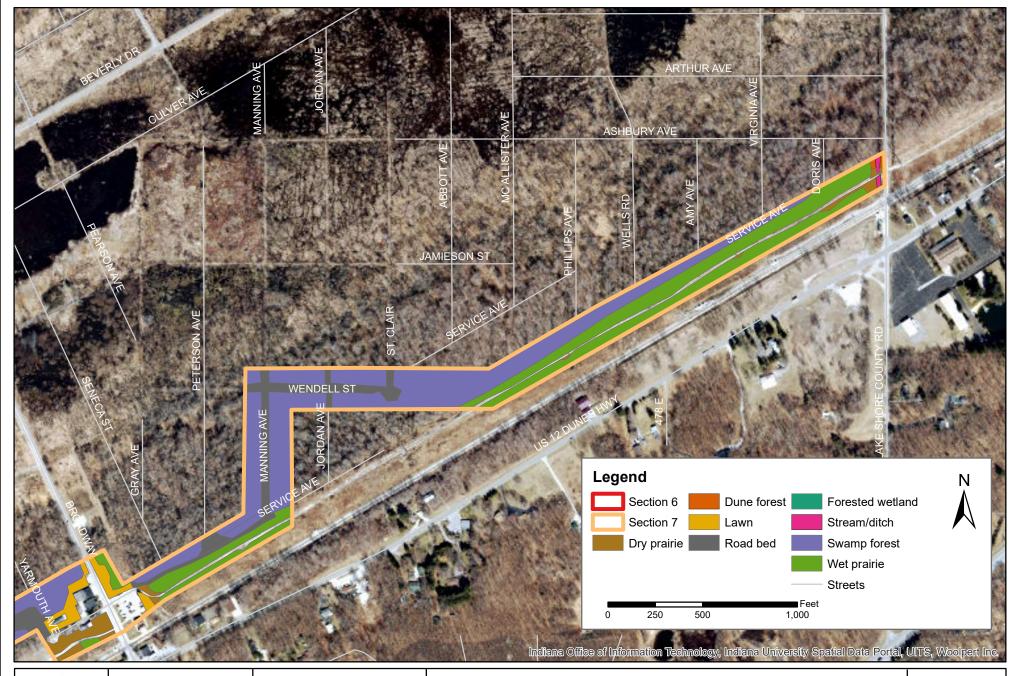


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 3.6



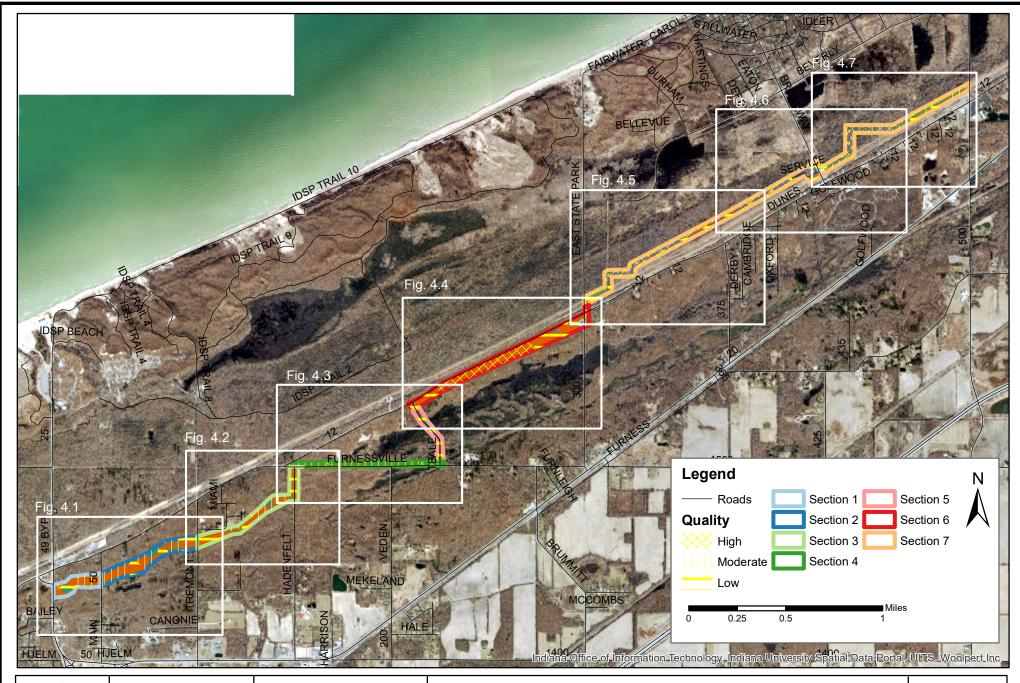


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Plant Community Types

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 3.7



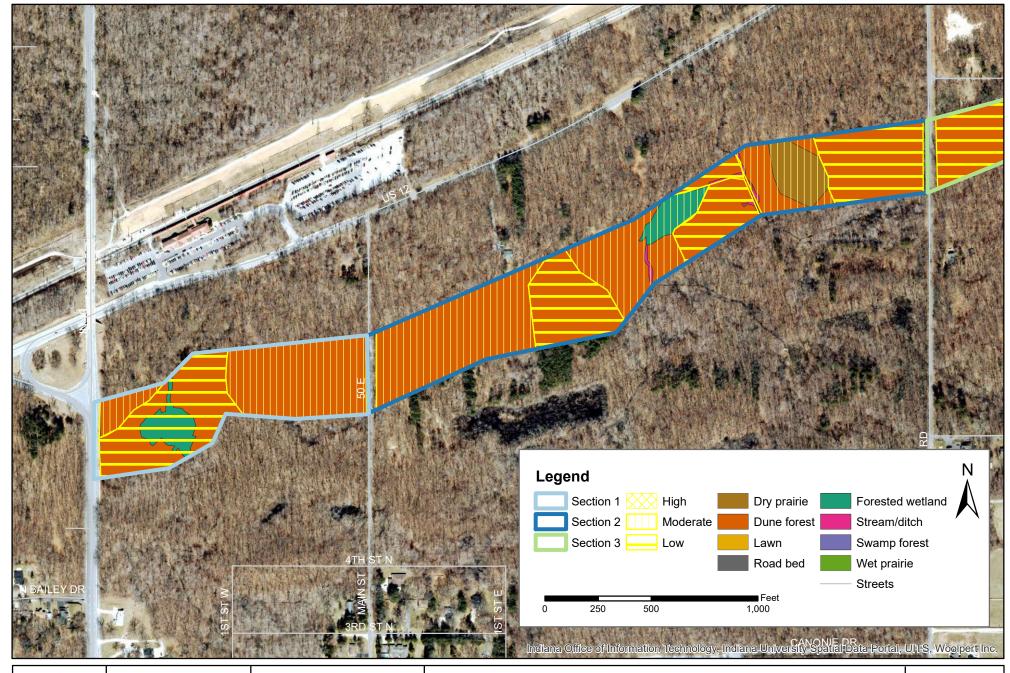


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Plant Community Quality

Marquette Greenway Trail - Calumet Section Porter County, Indiana



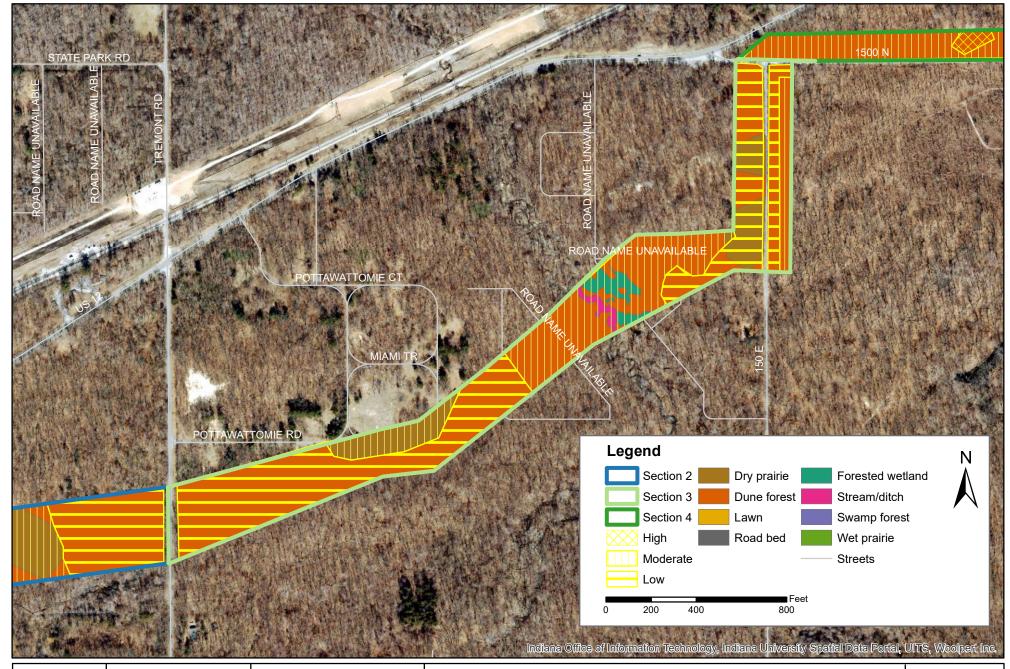


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Plant Community Quality

Marquette Greenway Trail - Calumet Section Porter County, Indiana



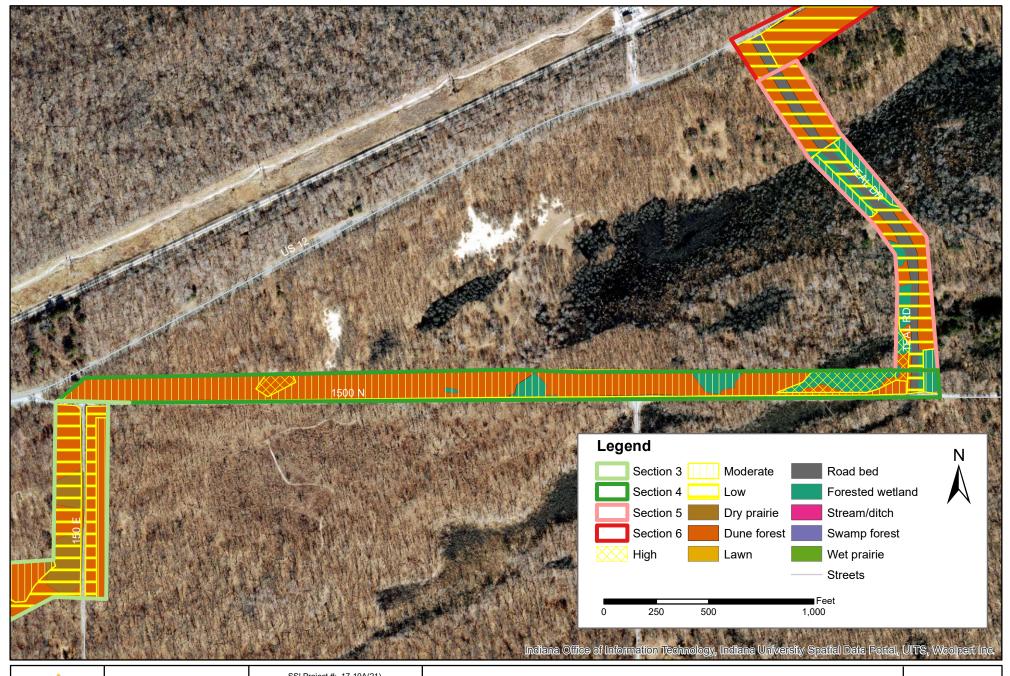


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Plant Community Quality

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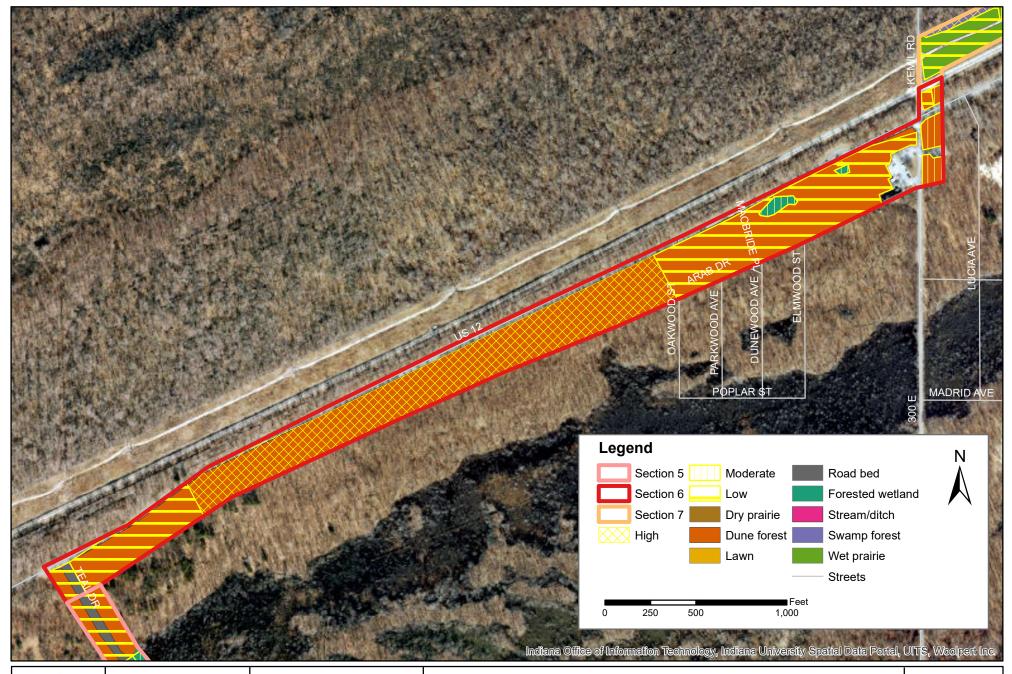


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Plant Community Quality

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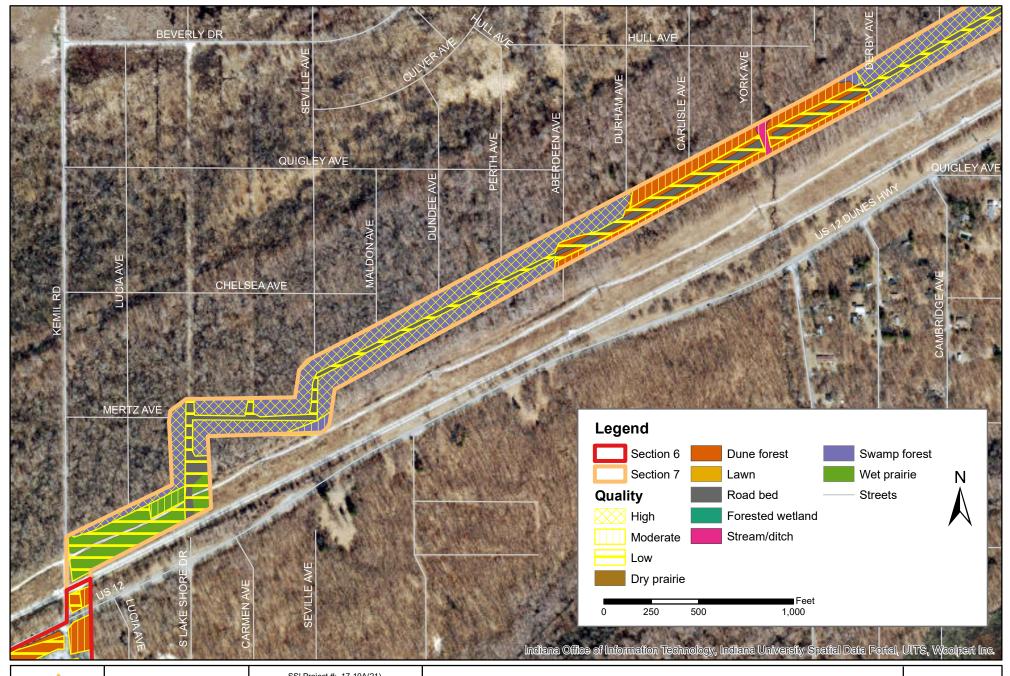


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Plant Community Quality

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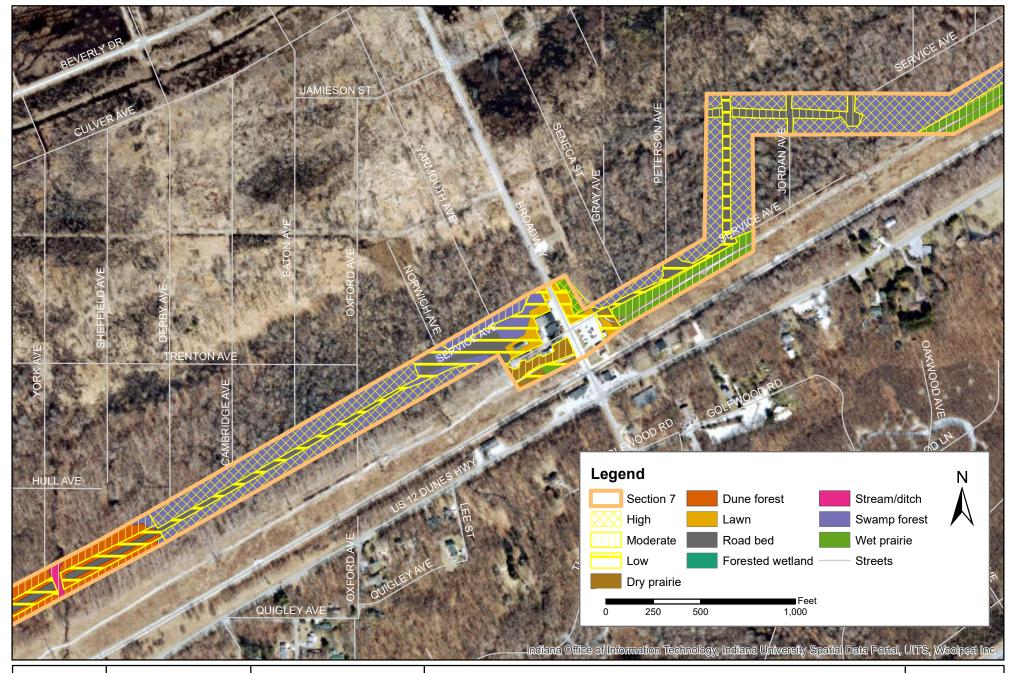


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Plant Community Quantity

Marquette Greenway Trail - Calumet Section Porter County, Indiana



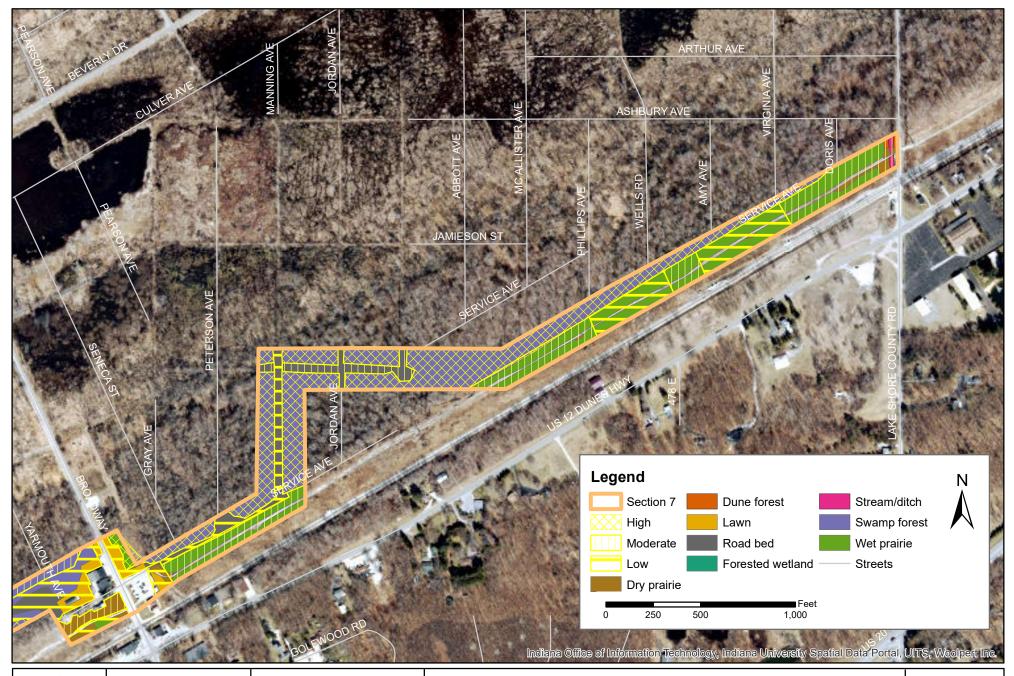


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Plant Community Quantity

Marquette Greenway Trail - Calumet Section Porter County, Indiana



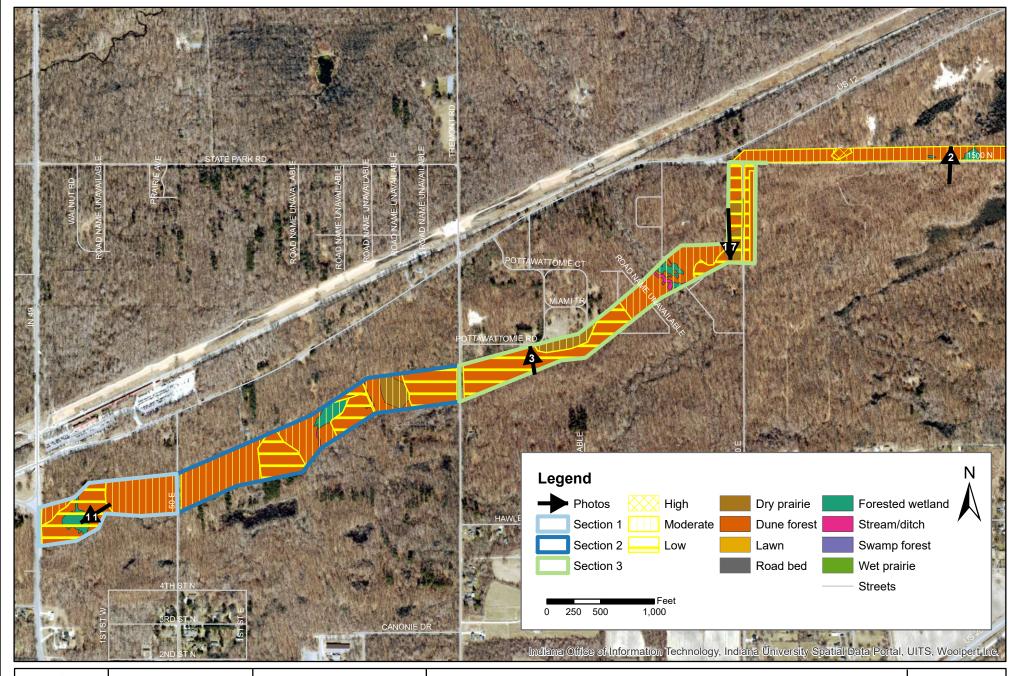


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Plant Community Quantity

Marquette Greenway Trail - Calumet Section Porter County, Indiana



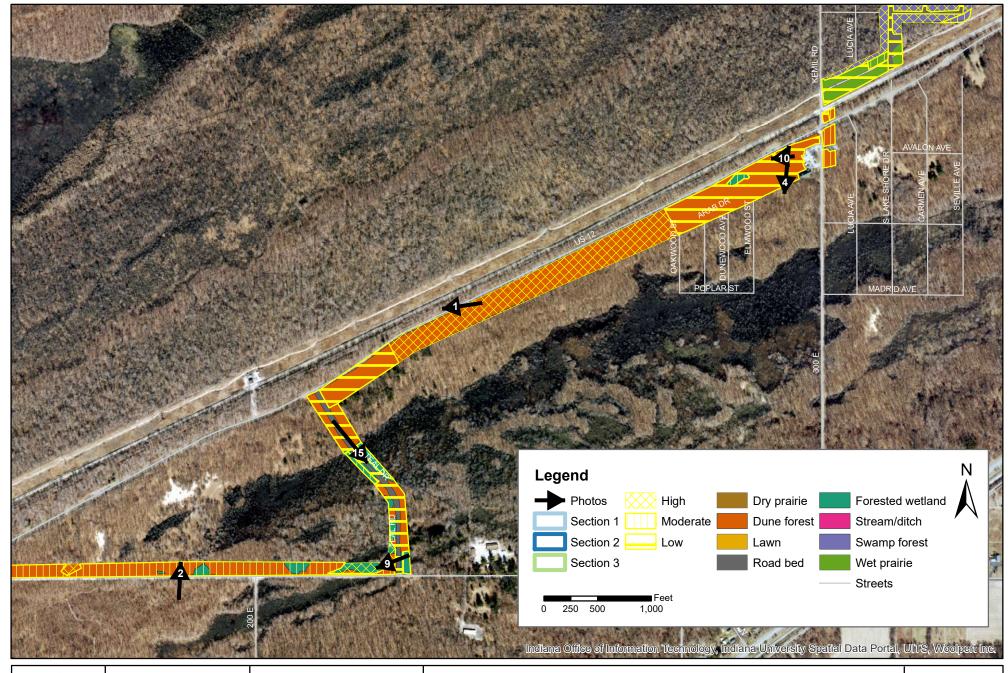


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Plant Community Quality

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 5.1



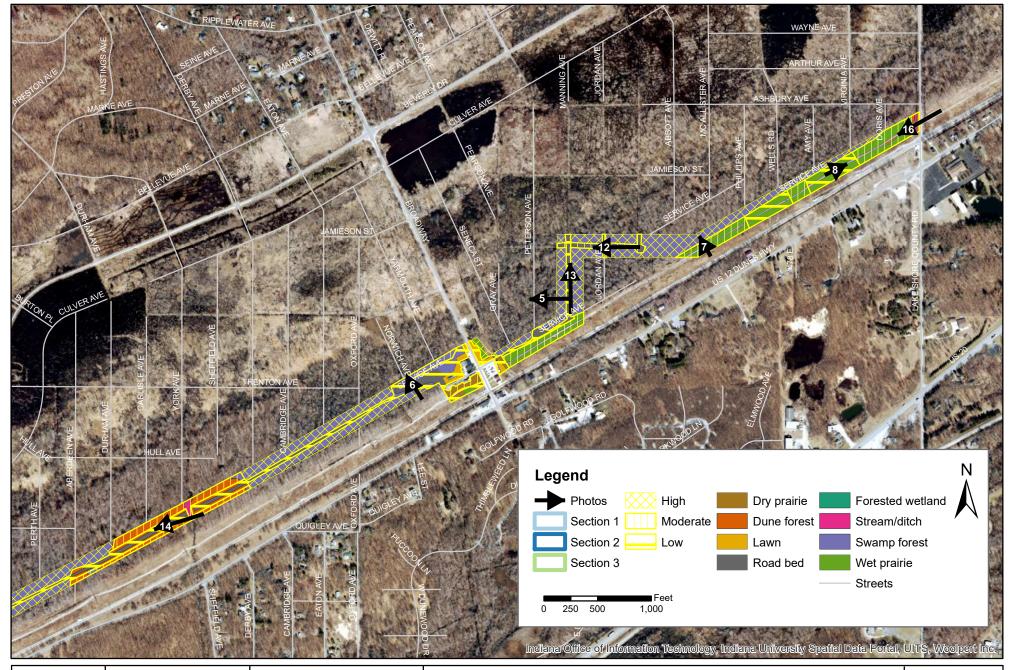


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Plant Community Quality

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 5.2





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Plant Community Quality

Marquette Greenway Trail - Calumet Section Porter County, Indiana Figure 5.3

APPENDIX B FLORISTIC QUALITY DATA

Soil Solutions, Inc. Page 29

1. Dune Forest

	Marquette Greenway Project - Upland forest, includes dune forest and
SITE:	disturbed 2nd growth forest
LOCALE:	Porter Co
BY:	Lydia Miramontes Loyd
NOTES:	June - October, 2022

CONSERVATISM-		1	
BASED			ADDITIONAL
METRICS			
METRICS MEAN C		SPECIES	METRICS
(NATIVE		RICHNESS	
SPECIES)	4.80	(ALL)	164
		SPECIES	
MEAN C		RICHNESS	
(ALL SPECIES)	3.75	(NATIVE)	128
MEAN C			
(NATIVE TREES)	5.40	% NON-NATIVE	0.22
MEAN C			
(NATIVE		WET INDICATOR	
SHRUBS)	5.69	(ALL)	0.69
MEAN C			
(NATIVE		WET INDICATOR	
HERBACEOUS)	4.53	(NATIVE)	0.54
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	54.36	(MIDWEST)	0.34
FQAI		% NATIVE	
(ALL SPECIES)	48.02	PERENNIAL	0.75
ADJUSTED FQAI	42.45	% NATIVE ANNUA	0.02
% C VALUE 0	0.29	% ANNUAL	0.02
% C VALUE 1-3	0.16	% PERENNIAL	0.96
% C VALUE 4-6	0.34		
% C VALUE 7-10	0.21		

Dominant species are listed in bold below.

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	NC-NE WET INDICATOR	INDICATO R (NUMERIC)	HABIT	DURATIO N	NATIVITY
acerub	Acer rubrum	rubrum	Red Maple	5	FAC	0	Tree	Perennial	Native
		Actaea							
actpac	Actaea pachypoda	pachypoda	White Baneberry	8	UPL	1	Forb	Perennial	Native
	Agrimonia	Agrimonia	l	_					
agrpar	parviflora	parviflora	Harvestlice	4	FAC	-1	Forb	Perennial	Native
-:1-14	A:1	ALLICCIA	T 6 11		LIDI		T	Danamaia!	A -d
ailalt	Ailanthus altissima	ALTISSIMA ALLIARIA	Tree-of-Heaven	0	UPL	1	Tree	Perennial	Adventive
allpet	Alliaria petiolata	PETIOLATA	Garlic-Mustard	0	FACU	0	Forb	Biennial	Adventive
апрес	Alliaria petiolata	Allium	Garric-Musicaru	0	TACO	0	1010	Dieminai	Adventive
allcan	Allium canadense	canadense	Meadow Garlic	3	FACU	1	Forb	Perennial	Native
uncun	7 illum canadense	Ambrosia	ricadow darric		17100	_	1010	rereminar	Hutive
	Ambrosia	artemisiifolia							
ambart	artemisiifolia	elatior	Annual Ragweed	0	FACU	1	Forb	Annual	Native
	Amelanchier	Amelanchier	Downy Service-						
amearb	arborea	arborea	Berry	8	FACU	1	Tree	Perennial	Native
	Amphicarpaea	Amphicarpae	American Hog-						
ampbra	bracteata	a bracteata	Peanut	5	FAC	0	Vine	Annual	Native
	Anemone	Anemone							
anequi	quinquefolia	quinquefolia	Nightcaps	7	FACU	0	Forb	Perennial	Native
		Arisaema							
		triphyllum							
	Arisaema	ssp.							
aritri	triphyllum	pusillum;	Jack-In-The-Pulpit	5	FAC	-1	Forb	Perennial	Native
	_	Aronia							
aromel	Aronia melanocarpa		Black Chokeberry	7	FACW	-1	Shrub	Perennial	Native
		ARTEMISIA		_		_		l	
artvul	Artemisia vulgaris	VULGARIS	Common Mugwort	0	UPL	2	Forb	Perennial	Adventive
		Asimina		4.0	540		_		
asitri	Asimina triloba	triloba	Common Pawpaw	10	FAC	0	Tree	Perennial	Native
	Asplenium	Asplenium	Fhan Calana	3	FACU		F	D	NI-Air
asppla	platyneuron	platyneuron BERBERIS	Ebony Spleenwort	3	FACU	1	Fern	Perennial	Native
berthu	Berberis thunbergii	THUNBERGII	Japanese Barberry	0	FACU	1	Shrub	Perennial	Adventive
betnig	Betula nigra	Betula nigra	River Birch	5	FACW	-1	Tree	Perennial	Native
Deting	Botrypus	Botrypus	KIVEI DIICII	J	TACW	-1	1166	refellillal	INALIVE
botvir	virginianus	virginianus	Rattlesnake Fern	5	FACU	1	Fern	Perennial	Native
DOCVII	Virginianus	BROMUS	Rattieshake Ferri	J	TACO	1	1 6111	referinal	ivative
broine	Bromus inermis	INERMIS	Smooth Brome	0	UPL	1	Grass	Perennial	Adventive
DIGNIC	Dromus mermis	Bromus	SHOOLII DI OITIC		012	-	01033	, ciciniai	/ dvciidve
		pubescens;							
		Bromus							
		nottowayanu	Hairy Woodland						
bropub	Bromus pubescens	s	Brome	5	FACU	1	Grass	Perennial	Native

camrad	Campsis radicans	CAMPSIS RADICANS	Trumpet-Creeper	0	FAC	1	Vine	Perennial	Adventive
cxblan	Carex blanda	Carex blanda	Eastern Woodland	1	FAC	0	Sedge	Perennial	Native
CXDIAII	Carex bialida	Carex	Seage	1	FAC	U	Seage	Pereilliai	Native
cxpens	Carex pensylvanica		Pennsylvania Sedge	5 5	UPL	2	Sedge	Perennial	Native
cxswan	Carex swanii Carpinus	Carex swanii Carpinus	Swan's Sedge	5	FACU	1	Sedge	Perennial	Native
carcar	caroliniana ssp. virginiana	caroliniana virginiana	American Hornbeam	8	FAC	0	Tree	Perennial	Native
Carcai		Carya							
carcor	Carya cordiformis Catalpa	cordiformis Catalpa	Bitter-Nut Hickory	5	FAC	1	Tree	Perennial	Native
catbig	bignonioides	bignonioides CELASTRUS	Southern Catalpa	0	FACU	1	Tree	Perennial	Adventive
	Celastrus	ORBICULAT							
celorb	orbiculatus Chimanhila	Chimanhila	Asian Bittersweet Spotted	0	UPL	2	Vine	Perennial	Adventive
chimac	Chimaphila maculata	Chimaphila maculata	Wintergreen	10	UPL	2	Shrub	Perennial	Native
		Circaea	Broad-Leaf						
circan	Circaea canadensis	lutetiana canadensis	Enchanter's- Nightshade	3	FACU	1	Forb	Perennial	Native
	Clin and divina	Satureja	_						
clivul	Clinopodium vulgare	vulgaris neogaea	Wild Basil	4	UPL	2	Forb	Perennial	Native
samumb	Comandra	Comandra	Pastard Tandflay	9	FACIL	1	Fowls	Downwinl	Nativo
comumb	umbellata Conopholis	umbellata Conopholis	Bastard-Toadflax	9	FACU	1	Forb	Perennial	Native
coname	americana	americana	Cancer-Root	8	UPL	2	Forb	Perennial	Native
conmaj	Convallaria majalis	CONVALLARI A MAJALIS	Lily-of-the-Valley	0	UPL	2	Forb	Perennial	Adventive
corflo	Cornus florida	Cornus florida	Flowering Dogwood	8	FACU	1	Tree	Perennial	Native
COITIO	Corrius rioriua	Cornus	Prowering Dogwood		FACO	1	nee	refellillal	Native
corrac	Cornus racemosa	racemosa Corylus	Gray Dogwood	1	FAC	0	Shrub	Perennial	Native
corame	Corylus americana	américana	American Hazelnut	5	FACU	1	Shrub	Perennial	Native
dacglo	Dactylis glomerata	DACTYLIS GLOMERATA	Orchard Grass	0	FACU	1	Grass	Perennial	Adventive
dacgio	Desmodium		Bare-Stem Tick-		TACO		Grass	refellillal	Adventive
desnud	nudiflorum Desmodium	nudiflorum Desmodium	Trefoil Panicled-Leaf Tick-	9	UPL	2	Forb	Perennial	Native
despan	paniculatum	paniculatum	Trefoil	6	FACU	1	Forb	Perennial	Native
dicacu	Dichanthelium acuminatum	Panicum implicatum;	Tapered Rosette Grass	4	FAC	0	Grass	Perennial	Native
	Dichanthelium	Dichantheliu	Old-Field Rosette						
dichua	huachucae Elaeagnus	m huachucae ELAEAGNUS	Grass	2	UPL	2	Grass	Perennial	Native
elaumb	umbellata	UMBELLATA	Autumn-Olive	0	UPL	2	Shrub	Perennial	Adventive
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	0	Fern	Perennial	Native
equhye	Equisetum hyemale	Equisetum	Tall Scouring-Rush	1	FAC	-1	Fern	Perennial	Native
equilye	Lquisetuiii iiyeiiiale	Erigeron	Eastern Daisy	1	FAC	-1	rem	refellillal	Native
eriann	Erigeron annuus	annuus EUONYMUS	Fleabane	0	FACU	1	Forb	Biennial	Native
euoala	Euonymus alatus	ALATUS	Winged Euonymus	0	UPL	2	Shrub	Perennial	Adventive
euofor	Euonymus hederaceus	EUONYMUS FORTUNEI	Climbing Euonymus	0	UPL	2	Shrub	Perennial	Adventive
Cuoror	Eurybia	Aster	Large-Leaf Wood-						
astmac	macrophylla Euthamia	macrophyllus Solidago	Aster	9	UPL	11	Forb	Perennial	Native
eutgra	graminifolia	graminifolia;	Flat-Top Goldentop	4	FAC	-1	Forb	Perennial	Native
faggra	Fagus grandifolia	Fagus grandifolia	American Beech	5	FACU	1	Tree	Perennial	Native
		FORSYTHIA	Japanese Golden						
forsus	Forsythia suspensa	SUSPENSA Fragaria	Bell	0	UPL	2	Shrub	Perennial	Adventive
fravir	Fragaria virginiana	virginiana Fraxinus	Virginia Strawberry	0	FACU	1	Forb	Perennial	Native
		americana							
		biltmoreana;							
fraame	Fraxinus americana	Fraxinus biltmoreana	White Ash	5	FACU	1	Tree	Perennial	Native
		Fraxinus							
		pennsylvanic a							
	Fravious	subintegerri							
frapen	Fraxinus pennsylvanica	ma; Fraxinus lanceolata	Green Ash	4	FACW	-1	Tree	Perennial	Native
		Galium				1	Forb	Annual	Native
galana	Calium anarina	courium					· FOED	LAUDUAL	ı ıvative l
galapa	Galium aparine	spurium Galium	Sticky-Willy	0	FACU		1015	74111441	
galapa	Galium aparine		Sticky-Willy	U	FACU	1	1015	7 iiiiddi	

	la w				T .				
	Gaultheria	Gaultheria			FACIL	_	G		N
gaupro	procumbens	procumbens Geranium	Eastern Teaberry	9	FACU	1	Shrub	Perennial	Native
gormac	Geranium maculatum	maculatum	Spotted Crane's-Bill	5	FACU	1	Forb	Perennial	Nativo
germac	maculatum	Geum	Spotted Crane S-Bill		FACU	1	FOID	Perenniai	Native
geucan	Geum canadense	canadense	White Avens	1	FAC	0	Forb	Perennial	Native
gcacan	Hamamelis	Hamamelis	American Witch-		TAC	0	1010	rerennar	Native
hamvir	virginiana	virginiana	Hazel	8	FACU	1	Shrub	Perennial	Native
namvn	virginiana	Helianthus	Tidzei		17100	-	Siliub	rerennar	racive
helhir	Helianthus hirsutus	hirsutus	Hispid Sunflower	7	UPL	2	Forb	Perennial	Native
	Helianthus	Helianthus	Jerusalem-		1				
heltub	tuberosus	tuberosus	Artichoke	3	FACU	1	Forb	Perennial	Native
		HEMEROCALL			111100				
hemful	Hemerocallis fulva	IS FULVA	Orange Day-Lily	0	UPL	2	Forb	Perennial	Adventive
		HESPERIS	Mother-of-the-						
hesmat	Hesperis matronalis	MATRONALIS	Evening	0	FACU	1	Forb	Perennial	Adventive
	·	HIBISCUS							
hibsyr	Hibiscus syriacus	SYRIACUS	Rose-of-Sharon	0	UPL	2	Shrub	Perennial	Adventive
,	Hypericum	Hypericum	Spotted St. John's-						
hyppun	punctatum	punctatum	Wort	4	FAC	0	Forb	Perennial	Native
ileopa	Ilex opaca	ILEX OPACA	American Holly	0	FACU	1	Shrub	Perennial	Adventive
jugnig	Juglans nigra		Black Walnut	3	FACU	1	Tree	Perennial	Native
		Juncus							
jundud	Juncus dudleyi	dudleyi	Dudley's Rush	2	FACW	-1	Forb	Perennial	Native
junten	Juncus tenuis	Juncus tenuis	Lesser Poverty	0	FAC	0	Forb	Perennial	Native
		Leersia							
leevir	Leersia virginica	virginica	White Grass	5	FACW	-1	Grass	Perennial	Native
		LIGUSTRUM							
ligvul	Ligustrum vulgare	VULGARE	European Privet	0	FACU	1	Shrub	Perennial	Adventive
	Lilium	Lilium							
lilmic	michiganense	michiganense		8	FACW	-1	Forb	Perennial	Native
		Lindera	Northern						
linben	Lindera benzoin	benzoin	Spicebush	5	FACW	-1	Shrub	Perennial	Native
	Liriodendron	Liriodendron							
lirtul	tulipifera	tulipifera	Tuliptree	5	FACU	1	Tree	Perennial	Native
		LONICERA	Japanese						
lonjap	Lonicera japonica	JAPONICA	Honeysuckle	0	FACU	1	Vine	Perennial	Adventive
		LONICERA X	Showy Fly	_					
Ionbel	Lonicera X bella	BELLA	Honeysuckle	0	FACU	1	Shrub	Perennial	Adventive
		Luzula	[]	_			l		
luzbul	Luzula bulbosa	bulbosa	Bulbous Wood-Rush	8	FACU	1	Forb	Perennial	Native
		Maianthemu							
	Maianthemum		False Lily-of-the-	_					
maican	canadense	interius	Valley	7	FACU	0	Forb	Perennial	Native
	Maianthemum	Smilacina	Feathery False	_		_			
smirac	racemosum	racemosa	Solomon's-Seal	5	FACU	1	Forb	Perennial	Native
	Maianthemum	Smilacina	Starry False	_					
smiste	stellatum	stellata	Solomon's-Seal	5	FAC	0	Forb	Perennial	Native
		MALUS	Plum-Leaf Crab				_		
malpru	Malus prunifolia	PRUNIFOLIA	Apple	0	UPL	2	Tree	Perennial	Adventive
:	Mitale alla managa	Mitchella	Dantaidea Dania	10	FACU		Chh	Di-I	N-+i
mitrep	Mitchella repens	repens	Partridge-Berry	10	FACU	1	Shrub	Perennial	Native
11. 1		MONARDA			FACU	2			
mondid	Monarda didyma	DIDYMA	Scarlet Beebalm	0	FACU	2	Forb		
ç.		Monarda	i l					Perennial	Adventive
monfis	Monarda fistulosa		'o - I						
		fistulosa	Oswego-Tea	4	FACU	1	Forb	Perennial	Native
		Monotropa	One-Flower Indian-		FACU	1		Perennial	Native
monuni	Monotropa uniflora	Monotropa uniflora		4 7			Forb		
	Monotropa uniflora Muhlenbergia	Monotropa uniflora Muhlenbergia	One-Flower Indian- Pipe	7	FACU FACU	1	Forb	Perennial Perennial	Native Native
monuni muhmex	Monotropa uniflora	Monotropa uniflora Muhlenbergia mexicana	One-Flower Indian- Pipe Mexican Muhly		FACU	1		Perennial	Native
muhmex	Monotropa uniflora Muhlenbergia mexicana	Monotropa uniflora Muhlenbergia mexicana Prenanthes	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake-	7 5	FACU FACU FACW	1 1 -1	Forb Grass	Perennial Perennial	Native Native Native
	Monotropa uniflora Muhlenbergia	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba	One-Flower Indian- Pipe Mexican Muhly	7	FACU FACU	1	Forb	Perennial Perennial	Native Native
muhmex nabalb	Monotropa uniflora Muhlenbergia mexicana Nabalus albus	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root	7 5 5	FACU FACU FACW FACU	1 1 -1 1	Forb Grass Forb	Perennial Perennial Perennial	Native Native Native
muhmex	Monotropa uniflora Muhlenbergia mexicana	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake-	7 5	FACU FACU FACW	1 1 -1	Forb Grass	Perennial Perennial	Native Native Native
muhmex nabalb nyssyl	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo	7 5 5 7	FACU FACU FACU FACU FAC	1 1 -1 1 0	Forb Grass Forb Tree	Perennial Perennial Perennial Perennial	Native Native Native Native Native
muhmex nabalb	Monotropa uniflora Muhlenbergia mexicana Nabalus albus	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root	7 5 5	FACU FACU FACW FACU	1 1 -1 1	Forb Grass Forb	Perennial Perennial Perennial	Native Native Native
muhmex nabalb nyssyl oenbie	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall	7 5 5 7 0	FACU FACW FACU FACU FACU FACU	1 1 -1 1 0	Forb Grass Forb Tree Forb	Perennial Perennial Perennial Perennial Perennial Biennial	Native Native Native Native Native Native
muhmex nabalb nyssyl	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo	7 5 5 7	FACU FACU FACU FACU FAC	1 1 -1 1 0	Forb Grass Forb Tree	Perennial Perennial Perennial Perennial	Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa Oenothera biennis Onoclea sensibilis Osmorhiza	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern	7 5 5 7 0 5	FACU FACW FACU FACU FACU FACU FACU	1 1 -1 1 0 1	Forb Grass Forb Tree Forb Fern	Perennial Perennial Perennial Perennial Perennial Biennial Perennial	Native Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall	7 5 5 7 0	FACU FACW FACU FACU FACU FACU	1 1 -1 1 0	Forb Grass Forb Tree Forb	Perennial Perennial Perennial Perennial Perennial Biennial	Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen osmcli	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely	7 5 5 7 0 5 4	FACU FACW FACU FACU FACU FACU FACU FACU FACW	1 1 1 -1 1 0 1 -1 1 1	Forb Grass Forb Tree Forb Fern Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial	Native Native Native Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern	7 5 5 7 0 5	FACU FACW FACU FACU FACU FACU FACU	1 1 -1 1 0 1	Forb Grass Forb Tree Forb Fern	Perennial Perennial Perennial Perennial Perennial Biennial Perennial	Native Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen osmcli	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely	7 5 5 7 0 5 4	FACU FACW FACU FACU FACU FACU FACU FACU FACW	1 1 1 -1 1 0 1 -1 1 1	Forb Grass Forb Tree Forb Fern Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial	Native Native Native Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen osmcli	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely	7 5 5 7 0 5 4	FACU FACW FACU FACU FACU FACU FACU FACU FACW	1 1 1 -1 1 0 1 -1 1 1	Forb Grass Forb Tree Forb Fern Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial	Native Native Native Native Native Native Native Native Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern	7 5 5 7 0 5 4 8	FACU FACW FACU FACU FACU FACU FACW FACW FACW	1 1 -1 1 0 1 -1 1	Forb Grass Forb Tree Forb Fern Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern	7 5 5 7 0 5 4 8	FACU FACW FACU FACU FACU FACU FACW FACW FACW	1 1 -1 1 0 1 -1 1	Forb Grass Forb Tree Forb Fern Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop-	7 5 5 7 0 5 4 8	FACU FACW FACU FACU FACU FACU FACW FACW FACW OBL	1 1 1 1 0 1 -1 1 1 -1 -1 -1 -2	Forb Grass Forb Tree Forb Fern Forb Fern	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam	7 5 5 7 0 5 4 8	FACU FACW FACU FACU FACU FACU FACW FACW FACW OBL	1 1 1 1 0 1 -1 1 1 -1 -1 -1 -2	Forb Grass Forb Tree Forb Fern Forb Fern	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow	7 5 5 7 0 5 4 8 8 5	FACU FACW FACU FACU FACU FACW FACW FACW FACW FACW FACW FACW	1 1 -1 1 0 1 -1 1 -1 1 -1 1 -1	Forb Grass Forb Tree Forb Fern Forb Fern Tree	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana Oxalis dillenii	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow	7 5 5 7 0 5 4 8	FACU FACW FACU FACU FACU FACW FACW FACW FACW FACW FACW FACW	1 1 -1 1 0 1 -1 1 -1 1 -1 1 -1	Forb Grass Forb Tree Forb Fern Forb Fern Tree	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana Oxalis dillenii	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana Oxalis dillenii Senecio aureus Panicum	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow Wood-Sorrel Golden Groundsel	7 5 5 7 0 5 4 8 8 5 0	FACU FACU FACU FACU FACU FACW FACW FACU FACW FACW FACW FACW FACW FACW FACU FACW	1 1 1 0 1 -1 1 -1 1 -1 -1 -1 -1 -1	Forb Grass Forb Tree Forb Fern Forb Tern Tree Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana Oxalis dillenii	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana Oxalis dillenii Senecio aureus Panicum virgatum	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow Wood-Sorrel	7 5 5 7 0 5 4 8 8 5	FACU FACW FACU FACU FACU FACU FACW FACU FACU FACW FACU FACW OBL FACU FACU	1 1 1 1 0 1 -1 1 1 -1 1 -1 1 -1 -1 1 1 1	Forb Grass Forb Tree Forb Fern Forb Tern Tree Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir oxadil pacaur	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana Oxalis dillenii Packera aurea Panicum virgatum	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa sylvatica Oenothera biennis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana Oxalis dillenii Senecio aureus Panicum virgatum Parthenociss	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow Wood-Sorrel Golden Groundsel	7 5 5 7 0 5 4 8 8 5 0	FACU FACU FACU FACU FACU FACW FACW FACU FACW FACW FACW FACW FACW FACW FACU FACW	1 1 1 0 1 -1 1 -1 1 -1 -1 -1 -1 -1	Forb Grass Forb Tree Forb Fern Forb Fern Forb Fern Forb Fern Tree Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial Perennial	Native
muhmex nabalb nyssyl oenbie onosen osmcli osmcin osmspe ostvir oxadil pacaur	Monotropa uniflora Muhlenbergia mexicana Nabalus albus Nyssa sylvatica Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomeum Osmunda spectabilis Ostrya virginiana Oxalis dillenii Packera aurea	Monotropa uniflora Muhlenbergia mexicana Prenanthes alba Nyssa Oenothera biennis Onoclea sensibilis Osmorhiza claytonii Osmunda cinnamomea Osmunda regalis spectabilis Ostrya virginiana Oxalis dillenii Senecio aureus Panicum virgatum Parthenociss us	One-Flower Indian- Pipe Mexican Muhly White Rattlesnake- Root Black Tupelo King's-Cureall Sensitive Fern Hairy Sweet-Cicely Cinnamon Fern Royal Fern Eastern Hop- Hornbeam Slender Yellow Wood-Sorrel Golden Groundsel	7 5 5 7 0 5 4 8 8 5 0	FACU FACU FACU FACU FACU FACW FACW FACU FACW FACW FACW FACW FACW FACW FACU FACW	1 1 1 0 1 -1 1 -1 1 -1 -1 -1 -1 -1	Forb Grass Forb Tree Forb Fern Forb Fern Forb Fern Forb Fern Tree Forb	Perennial Perennial Perennial Perennial Biennial Perennial Perennial Perennial Perennial Perennial Perennial	Native

	D- 4: 1: -	In-di-di-	C di				1	1	
pedcan	Pedicularis canadensis	Pedicularis canadensis	Canadian Lousewort	9	FACU	1	Forb	Perennial	Native
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Persicaria	Polygonum		-	11100				
pervir	virginiana	virginianum	Jumpseed	4	FAC	0	Forb	Perennial	Native
	Phalaris	PHALARIS ARUNDINACE							
phaaru	arundinacea	A	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
	DI I	PHLEUM	G T !!	•	FACIL				
phlpra	Phleum pratense	PRATENSE PHLOX	Common Timothy	0	FACU	1	Grass	Perennial	Adventive
phlpan	Phlox paniculata	PANICULATA	Fall Phlox	1	FACU	1	Forb	Perennial	Native
	Phryma	Phryma		_		_			
PHRLEP	leptostachya Phytolacca	leptostachya Phytolacca	Lopseed	6	FACU	2	Forb	Perennial	Native
phyame	americana	americana	American Pokeweed	0	FACU	1	Forb	Perennial	Native
picabi	Picea abies	PICEA ABIES	Norway Spruce	0	UPL	2	Tree	Perennial	Adventive
pinres	Pinus resinosa	Pinus resinosa	Red Pine	10	FACU	1	Tree	Perennial	Native
pinstr	Pinus strobus	Pinus strobus	Eastern White Pine	10	FACU	1	Tree	Perennial	Native
		PLANTAGO		_		_			
plamaj	Plantago major	MAJOR POA	Great Plantain Flat-Stem Blue	0	FACU	0	Forb	Perennial	Adventive
poacom	Poa compressa	COMPRESSA	Grass	0	FACU	1	Grass	Perennial	Adventive
		POA	Kentucky Blue						
poapra	Poa pratensis	PRATENSIS Polygonatum	Grass	0	FACU	0	Grass	Perennial	Adventive
	Polygonatum	canaliculatu	King Solomon's-						
polcan	biflorum	m	Seal	4	FACU	1	Forb	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
рориеі	Populus	Populus	Lastern Cottonwood	0	FAC	U	Tiee	refellillal	ivative
poptre	tremuloides	tremuloides	Quaking Aspen	3	FAC	0	Tree	Perennial	Native
		Potentilla simplex							
potsim	Potentilla simplex	argyrisma	Oldfield Cinquefoil	3	FACU	1	Forb	Perennial	Native
	·	Prunella	·						
pruvull	Prunella vulgaris ssp. lanceolata	vulgaris lanceolata	Common Selfheal	1	FAC	0	Forb	Perennial	Native
pravan	ssp. ianceolata	Prunus	Common Semiear		TAC	0	1010	refellillal	INGLIVE
pruser	Prunus serotina	serotina	Black Cherry	0	FACU	1	Shrub	Perennial	Native
pruvir	Prunus virginiana	Prunus virginiana	Choke Cherry	3	FACU	1	Shrub	Perennial	Native
pruvii	Pteridium	Pteridium	Choke Cherry	J	TACO		Siliub	refellillal	INGLIVE
	aquilinum var.	aquilinum	Northern Bracken						
pteaqu	latiusculum	Pyrola	Fern	5	FACU	1	Fern	Perennial	Native
pyrell	Pyrola elliptica	elliptica	Shinleaf	10	FACU	1	Forb	Perennial	Native
		Quercus	Northern White						
quealb									
-,	Quercus alba	alba Ouercus	Oak	5	FACU	1	Tree	Perennial	Native
	Quercus alba Quercus palustris	Quercus palustris	Pin Oak	5 5	FACU FACW	1 -1	Tree Tree	Perennial Perennial	Native Native
quepau	Quercus palustris	Quercus palustris Quercus	Pin Oak	5	FACW	-1	Tree	Perennial	Native
		Quercus palustris Quercus rubra							
quepau querub	Quercus palustris Quercus rubra	Quercus palustris Quercus rubra Quercus	Pin Oak Northern Red Oak	5 5	FACW	-1 1	Tree	Perennial Perennial	Native Native
quepau	Quercus palustris	Quercus palustris Quercus rubra Quercus velutina Rhus typhina	Pin Oak Northern Red Oak Black Oak Staghorn Sumac	5	FACU FACU	-1	Tree	Perennial	Native
querub quevel rhutyp	Quercus palustris Quercus rubra Quercus velutina Rhus hirta	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri	5 5 5	FACU UPL UPL	-1 1 2 2	Tree Tree Tree Tree	Perennial Perennial Perennial Perennial	Native Native Native
quepau querub quevel	Quercus palustris Quercus rubra Quercus velutina	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri	5 5	FACU UPL	-1 1	Tree Tree	Perennial Perennial	Native Native
quepau querub quevel rhutyp ribmis	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry	5 5 5 1 2	FACU UPL UPL UPL	-1 1 2 2 2	Tree Tree Tree Tree Shrub	Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native
quepau querub quevel rhutyp	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry	5 5 5	FACU UPL UPL	-1 1 2 2	Tree Tree Tree Tree	Perennial Perennial Perennial Perennial	Native Native Native
quepau querub quevel rhutyp ribmis	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust	5 5 5 1 2	FACW FACU UPL UPL UPL FACU	-1 1 2 2 2	Tree Tree Tree Shrub Tree	Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Adventive
quepau querub quevel rhutyp ribmis	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose	5 5 5 1 2	FACU UPL UPL UPL	-1 1 2 2 2	Tree Tree Tree Tree Shrub	Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native
quepau querub quevel rhutyp ribmis robpse rosmul	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny	5 5 5 1 2 0	FACU UPL UPL UPL FACU FACU	-1 1 2 2 2 2 1	Tree Tree Tree Tree Shrub	Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose	5 5 5 1 2	FACW FACU UPL UPL UPL FACU	-1 1 2 2 2	Tree Tree Tree Shrub Tree	Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Adventive
quepau querub quevel rhutyp ribmis robpse rosmul	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry	5 5 5 1 2 0	FACU UPL UPL UPL FACU FACU	-1 1 2 2 2 2 1	Tree Tree Tree Tree Shrub	Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis robpse rosmul ruball	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus	Quercus palustris Quercus rubra Quercus velutina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black-	5 5 1 2 0 0 3 7	FACU PACU UPL UPL UPL FACU FACU FACU FACU	-1 1 2 2 2 1 1 1 -1	Tree Tree Tree Tree Shrub Tree Shrub Shrub	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Adventive Adventive Native Native
querub quevel rhutyp ribmis robpse rosmul	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry	5 5 5 1 2 0 0	FACW FACU UPL UPL UPL FACU FACU FACU	-1 1 2 2 2 2 1 1	Tree Tree Tree Tree Shrub Tree Shrub	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Adventive Adventive Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black-	5 5 1 2 0 0 3 7	FACU PACU UPL UPL UPL FACU FACU FACU FACU	-1 1 2 2 2 1 1 1 -1	Tree Tree Tree Tree Shrub Tree Shrub Shrub	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Adventive Adventive Native Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis	Quercus palustris Quercus rubra Quercus velutina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett	5 5 1 2 0 0 3 7 3 0	FACW PACU UPL UPL FACU FACU FACU FACU FACU FACU FACU FACW FAC	-1 1 2 2 2 1 1 1 0 1	Tree Tree Tree Tree Shrub Tree Shrub Forb	Perennial	Native Native Native Native Native Adventive Adventive Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras Salbidum	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot	5 5 1 2 0 0 3 7 3	FACW FACU UPL UPL FACU FACU FACU FACU FACU FACW FAC	-1 1 2 2 2 2 1 1 1 0	Tree Tree Tree Shrub Tree Shrub Shrub Shrub Forb	Perennial	Native Native Native Native Native Adventive Adventive Native Native Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACACI IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras	5 5 1 2 0 0 3 7 3 0	FACW PACU UPL UPL FACU FACU FACU FACU FACU FACU FACU FACW FAC	-1 1 2 2 2 1 1 1 0 1	Tree Tree Tree Tree Shrub Tree Shrub Forb	Perennial	Native Native Native Native Native Adventive Adventive Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum	Quercus palustris Quercus rubra Quercus velutina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye	5 5 5 1 2 0 0 3 7 3 0 3	FACW PACU UPL UPL FACU FACU FACU FACU FACW FAC FACU FACU	-1 1 2 2 2 1 1 1 0 1 1	Tree Tree Tree Shrub Tree Shrub Tree Shrub Tree Tree Tree Tree Tree Tree Tree Tre	Perennial	Native Native Native Native Native Adventive Adventive Native Native Native Native Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum Schedonorus arundinaceus	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye Grass	5 5 1 2 0 0 3 7 3 0	FACW PACU UPL UPL FACU FACU FACU FACU FACU FACU FACU FACW FAC	-1 1 2 2 2 1 1 1 0 1	Tree Tree Tree Tree Shrub Tree Shrub Forb	Perennial	Native Native Native Native Native Adventive Adventive Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US Andropogon scoparius	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye	5 5 5 1 2 0 0 3 7 3 0 3	FACW PACU UPL UPL FACU FACU FACU FACU FACW FAC FACU FACU	-1 1 2 2 2 1 1 1 0 1 1	Tree Tree Tree Shrub Tree Shrub Tree Shrub Tree Tree Tree Tree Tree Tree Tree Tre	Perennial	Native Native Native Native Native Adventive Adventive Native Native Native Native Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff sasalb	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum Schedonorus arundinaceus Schizachyrium	Quercus palustris Quercus rubra Quercus velutina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US Andropogon scoparius	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye Grass Little False	5 5 5 1 2 0 0 3 7 3 0 3	FACW FACU UPL UPL FACU	-1 1 2 2 2 1 1 1 -1 0 1 1	Tree Tree Tree Shrub Tree Shrub Tree Shrub Tree Shrub Grass	Perennial	Native Native Native Native Native Adventive Adventive Native Native Native Native Adventive Adventive
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff sasalb	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum Schedonorus arundinaceus Schizachyrium scoparium	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US Andropogon scoparius Smilax tamnoides	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye Grass Little False Bluestem	5 5 5 1 2 0 0 3 7 3 0 3 0 5	FACW FACU UPL UPL FACU	-1 1 2 2 1 1 1 1 1 -1 0 1 1 1	Tree Tree Tree Shrub Tree Shrub Shrub Tree Shrub Grass Grass	Perennial	Native Native Native Native Native Adventive Native Native Native Native Adventive Adventive Adventive Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff sasalb	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum Schedonorus arundinaceus Schizachyrium	Quercus palustris Quercus rubra Quercus velutina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US Andropogon scoparius	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye Grass Little False	5 5 5 1 2 0 0 3 7 3 0 3 0 5	FACW FACU UPL UPL FACU FACU	-1 1 2 2 2 1 1 1 1 1 1 1 0 1 1 1 0	Tree Tree Tree Shrub Tree Shrub Tree Shrub Tree Shrub Grass	Perennial	Native Native Native Native Native Adventive Adventive Native Native Native Adventive Adventive Native Native Native
quepau querub quevel rhutyp ribmis robpse rosmul ruball rubhis sangre sapoff sasalb	Quercus palustris Quercus rubra Quercus velutina Rhus hirta Ribes missouriense Robinia pseudoacacia Rosa multiflora Rubus allegheniensis Rubus hispidus Sanicula odorata Saponaria officinalis Sassafras albidum Schedonorus arundinaceus Schizachyrium scoparium	Quercus palustris Quercus rubra Quercus velutina Rhus typhina Ribes missouriense ROBINIA PSEUDOACAC IA ROSA MULTIFLORA Rubus allegheniensi s Rubus hispidus Sanicula gregaria SAPONARIA OFFICINALIS Sassafras albidum SCHEDONOR US ARUNDINACE US Andropogon scoparius Smilax tamnoides hispida	Pin Oak Northern Red Oak Black Oak Staghorn Sumac Missouri Gooseberry Black Locust Rambler Rose Allegheny Blackberry Bristly Dewberry Clustered Black- Snakeroot Bouncing-Bett Sassafras Tall False Rye Grass Little False Bluestem Chinaroot	5 5 5 1 2 0 0 3 7 3 0 3 0 5	FACW FACU UPL UPL FACU	-1 1 2 2 1 1 1 1 1 -1 0 1 1 1	Tree Tree Tree Shrub Tree Shrub Shrub Tree Shrub Grass Grass	Perennial	Native Native Native Native Native Adventive Native Native Native Native Adventive Adventive Adventive Native

r		la			1				
		Solidago					l		
solcae	Solidago caesia	caesia	Wreath Goldenrod	8	FACU	1	Forb	Perennial	Native
	Solidago	Solidago	Canadian				l		
solcan	canadensis	canadensis	Goldenrod	1	FACU	1	Forb	Perennial	Native
		Solidago		_			l		
solgig	Solidago gigantea	gigantea	Late Goldenrod	4	FACW	-1	Forb	Perennial	Native
		Solidago	Wrinkle-Leaf	_		_	l		
solrug	Solidago rugosa	rugosa	Goldenrod	6	FAC	0	Forb	Perennial	Native
	Symphyotrichum	l	White Panicled	_		_	l		
astsim	lanceolatum		American-Aster	3	FACW	0	Forb	Perennial	Native
	Symphyotrichum	Aster		_			1		
astlat	lateriflorum	lateriflorus	Farewell-Summer	4	FAC	-1	Forb	Perennial	Native
	Symphyotrichum	Aster	Willow-Leaf	_	=		l		
astpra	praealtum	praealtus	American-Aster	7	FACW	-1	Forb	Perennial	Native
_	Symplocarpus	Symplocarpu	l	_		_	l		
symfoe	foetidus	s foetidus	Skunk-Cabbage	8	OBL	-2	Forb	Perennial	Native
		SYRINGA		_		_			
syrvul	Syringa vulgaris	VULGARIS	Common Lilac	0	UPL	2	Shrub	Perennial	Adventive
		Tilia .	ll	_			l _		
tilame	Tilia americana	americana	American Basswood	5	FACU	1	Tree	Perennial	Native
l	Toxicodendron	Rhus							
toxrad	radicans	radicans	Eastern Poison-Ivy	2	FAC	0	Vine	Perennial	Native
	Tradescantia	Tradescantia	<u></u>	2	FACIL		١		
traohi	ohiensis	ohiensis	Bluejacket	3	FACU	1	Forb	Perennial	Native
l	Tradescantia	Tradescantia	Broad-Leaf	-	LIBI	2	١		
trasub	subaspera	subaspera	Spiderwort	7	UPL	2	Forb	Perennial	Native
A!	Trillium	Trillium	Large White	9	LIDI	2	F	D	Netion
trigra	grandiflorum	grandiflorum Trillium	Trillium	9	UPL	2	Forb	Perennial	Native
twise o	Twilliams we saw actions	recurvatum	Bloody Butcher	5	FACIL	1	Forb	Downwini	Nativo
trirec	Trillium recurvatum	Vaccinium	Bloody-Butcher	3	FACU	1	FOID	Perennial	Native
	Vaccinium		Late Lowbush						
vacang	angustifolium	m	Blueberry	6	FACU	1	Shrub	Perennial	Native
vacalig	Vaccinium	Vaccinium	Low-Bush		FACU		Siliub	Pereilliai	Native
vacpal	pallidum	pallidum	Blueberry	6	UPL	2	Shrub	Perennial	Native
vacpai	Viburnum	Viburnum	Maple-Leaf Arrow-		UFL		Siliub	refellillal	Native
vibace	acerifolium	acerifolium	Wood	9	UPL	2	Shrub	Perennial	Native
VIDUCC	deemonam	VIBURNUM	VV000		0.2		Jiii ub	reremman	Hutive
		DENTATUM							
		VAR.	Southern Arrow-						
vibden	Viburnum dentatum			0	FAC	0	Shrub	Perennial	Adventive
VIBUCII	Vibarram dentatam	VINCA	Wood		1710		Siliub	rerenniai	Adventive
vinmin	Vinca minor	MINOR	Common Periwinkle	0	UPL	2	Shrub	Perennial	Adventive
***************************************	VIIIca IIIIIoi	Viola	Common renwinkle		012		Siliub	rerenniai	Adventive
		pubescens							
		var.	Downy Yellow						
viopub	Viola pubescens	scabriuscula	Violet	5	FACU	1	Forb	Perennial	Native
	Viola papescells	Vitis		<u>J</u>	17.00	•	1 0.5	· crciiiidi	1100110
vitaes	Vitis aestivalis	aestivalis	Summer Grape	5	FACU	1	Vine	Perennial	Native
	1	Vitis riparia	3.ups			-	1		
vitrip	Vitis riparia		River-Bank Grape	1	FAC	-1	Vine	Perennial	Native
vitvul	Vitis vulpina		Frost Grape	5	FAC	0	Vine	Perennial	Native
		, u.pu							

2. Swamp Forest

SITE:	Hydromesophytic swamp forest
LOCALE:	Porter County, INDP
BY:	Lydia Miramontes Loyd
NOTES:	June - October, 2022

CONSERVATISM-			
BASED			ADDITIONAL
METRICS			METRICS
MEAN C		SPECIES	
(NATIVE		RICHNESS	
SPECIES)	6.05	(ALL)	66
		SPECIES	
MEAN C		RICHNESS	
(ALL SPECIES)	5.77	(NATIVE)	63
MEAN C			
(NATIVE TREES)	5.36	% NON-NATIVE	0.05
MEAN C			
(NATIVE		WET INDICATOR	
SHRUBS)	5.43	(ALL)	-0.62
MEAN C			
(NATIVE		WET INDICATOR	
HERBACEOUS)	6.40	(NATIVE)	-0.68
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	48.00	(MIDWEST)	0.76
FQAI		% NATIVE	
(ALL SPECIES)	46.90	PERENNIAL	0.89
ADJUSTED FQAI	59.09	% NATIVE ANNUA	0.06
% C VALUE 0	0.06	% ANNUAL	0.08
% C VALUE 1-3	0.06	% PERENNIAL	0.92
% C VALUE 4-6	0.45		
% C VALUE 7-10	0.42		

Dominant species listed in bold below.

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	NC-NE WET	WET INDICATO R	HABIT	DURATION	NATIVITY
acerub	Acer rubrum	Acer	Red Maple	5	FAC	0	Tree	Perennial	Native
acerub	Acerrabiani	Apios	Reu Mapie		TAC	 	1166	refellillal	Native
apiame	Apios americana	americana	Groundnut	5	FACW	-1	Forb	Perennial	Native
аріатіс	Apios americana	Arisaema	Groundiac		TACW	-	1015	rerenna	IVALIVE
		triphyllum							
		ssp.							
		pusillum;							
		Arisaema							
		triphyllum							
	Arisaema	ssp.							
aritri	triphyllum	stewardsonii	Jack-In-The-Pulpit	5	FAC	-1	Forb	Perennial	Native
		Boehmeria				_			7.10.0.7.0
		cylindrica							
	Boehmeria	drummondia	Small-Spike False						
boecyl	cylindrica	na	Nettle	5	OBL	-2	Forb	Perennial	Native
,	Calamagrostis	Calamagrosti							
calcan	canadensis	s canadensis	Bluejoint	6	OBL	-2	Grass	Perennial	Native
		Caltha	Yellow Marsh-						
calpal	Caltha palustris	palustris	Marigold	8	OBL	-2	Forb	Perennial	Native
		Carex							
		aquatilis	Leafy Tussock						
cxaqua	Carex aquatilis	altior	Sedge	8	OBL	-2	Sedge	Perennial	Native
		Carex							
cxbrom	Carex bromoides	bromoides	Brome-Like Sedge	10	FACW	-1	Sedge	Perennial	Native
cxcrin	Carex crinita	Carex crinita	Fringed Sedge	7	OBL	-2	Sedge	Perennial	Native
		Carex	Northern Long						
cxfoll	Carex folliculata	folliculata	Sedge	10	OBL	-2	Sedge	Perennial	Native
cxgray	Carex grayi	Carex grayi	Gray's Sedge	7	FACW	-1	Sedge	Perennial	Native
		Carex	Greater Bladder		=	.		l	
cxintu	Carex intumescens	intumescens	Sedge	8	FACW	-1	Sedge	Perennial	Native
		Carex	l <u>.</u> .	_		_		l	
cxlacu	Carex lacustris	lacustris	Lakebank Sedge	5	OBL	-2	Sedge	Perennial	Native
cxradi	Carex radiata	Carex radiata		<u>5</u> 5	FAC UPL	2	Sedge	Perennial	Native
cxrose	Carex rosea	Carex rosea	Rosy Sedge	4	OBL	-2	Sedge	Perennial	Native
cxstip	Carex stipata	Carex stipata	Stalk-Grain Sedge	4	UBL	-2	Sedge	Perennial	Native
	Carpinus caroliniana ssp.	Carpinus caroliniana	American						
carcar	virginiana ssp.	virginiana	Hornbeam	8	FAC	0	Tree	Perennial	Native
carcar	virgillidild	Chelone	HUHDEAIII	0	FAC	U	rree	Perennial	ivative
cheala	Chelone glabra	glabra	White Turtlehead	8	OBL	-2	Forb	Perennial	Native
chegla	Cherone grapia	Chrysospleni	write furtienedu	0	UBL		FUID	refellillal	ivative
	Chrysosplenium	um	American Golden-						
chrame	americanum	americanum	Saxifrage	10	OBL	-2	Forb	Perennial	Native
Cinalite	amencanum	Cicuta	Spotted Water-	10	UDL		1010	reteiiiidi	ivative
cicmac	Cicuta maculata	maculata	Hemlock	6	OBL	-2	Forb	Perennial	Native
CICIIIaC	TCICULA IIIACUIALA	Imaculata	HIGHHOUK	U	UDL	-2	FULD	referrid	INALIVE

clevir	Clematis virginiana	Clematis virginiana	Devil's-Darning- Needles	4	FAC	0	Vine	Perennial	Native
corrac	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	0	Shrub	Perennial	Native
COLLAC		Cuscuta	, ,						
cusgro	Cuscuta gronovii Dichanthelium	gronovii Panicum	Common Dodder Tapered Rosette	5	UPL	2	Vine	Annual	Native
dicacu	acuminatum	implicatum;	Grass	4	FAC	0	Grass	Perennial	Native
astumb	Doellingeria umbellata	Aster umbellatus	Parasol White-Top	8	FACW	-1	Forb	Perennial	Native
dnycar	Dryopteris carthusiana	Dryopteris spinulosa	Spinulose Wood Fern	8	FACW	1	Fern	Perennial	Native
drycar	Elaeagnus	ELAEAGNUS				-1			
elaumb	umbellata	UMBELLATA Fagus	Autumn-Olive	0	UPL	2	Shrub	Perennial	Adventive
faggra	Fagus grandifolia	grandifolia	American Beech	5	FACU	1	Tree	Perennial	Native
		Fraxinus americana biltmoreana; Fraxinus biltmoreana; Fraxinus							
frabil	Fraxinus americana	smallii Fraxinus	White Ash	5	FACU	1	Tree	Perennial	Native
frapen	Fraxinus pennsylvanica	pennsylvanic a subintegerri ma; Fraxinus lanceolata	Green Ash	4	FACW	-1	Tree	Perennial	Native
galtrl	Galium triflorum	Galium triflorum	Fragrant Bedstraw	5	FACU	1	Forb	Perennial	Native
		Geum	_						
geucan	Geum canadense	canadense Glyceria	White Avens	1	FAC	0	Forb	Perennial	Native
glystr	Glyceria striata	striata var. stricta	Fowl Manna Grass	4	OBL	-2	Grass	Perennial	Native
	,	Ilex	Common						
ilever	Ilex verticillata	verticillata Leersia	Winterberry	10	FACW	-1	Shrub	Perennial	Native
leeory	Leersia oryzoides Lilium	oryzoides Lilium	Rice Cut Grass	3	OBL	-2	Grass	Perennial	Native
lilmic	michiganense	michiganense	Michigan Lily	8	FACW	-1	Forb	Perennial	Native
linben	Lindera benzoin	Lindera benzoin	Northern Spicebush	5	FACW	-1	Shrub	Perennial	Native
lirtul	Liriodendron tulipifera	Liriodendron tulipifera	Tuliptree	5	FACU	1	Tree	Perennial	Native
maican	Maianthemum canadense	Maianthemu m canadense interius	False Lily-of-the- Valley	7	FACU	0	Forb	Perennial	Native
mitrep	Mitchella repens	Mitchella repens	Partridge-Berry	10	FACU	1	Shrub	Perennial	Native
nyssyl	Nyssa sylvatica	Nyssa sylvatica	Black Tupelo	7	FAC	0	Tree	Perennial	Native
	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	-1	Fern		
onosen		Osmunda	Sensitive Ferri	<u>J</u>	FACW	-1	reili	Perennial	Native
osmcin	Osmunda cinnamomeum	cinnamome a	Cinnamon Fern	8	FACW	-1	Fern	Perennial	Native
	Osmunda	Osmunda regalis							
osmregs	spectabilis	spectabilis	Royal Fern	8	OBL	-2	Fern	Perennial	Native
pacgla	Packera glabella	SENECIO GLABELLUS	Cress-Leaf Groundsel	0	FACW	-1	Forb	Annual	Adventive
<u> poega</u>	, , , , , , , , , , , , , , , , , , ,	Polygonum arifolium pubescens;							
perari	Persicaria arifolia	Tracaulon arifolium	Halberd-Leaf Tearthumb	9	OBL	-2	Forb	Annual	Native
		Polygonum sagittatum; Tracaulon	Arrow-Leaf						
persag	Persicaria sagittata	sagittatum	Tearthumb	7	OBL	-2	Forb	Annual	Native
pervir	Persicaria virginiana	Polygonum virginianum	Jumpseed	4	FAC	0	Forb	Perennial	Native
pilpum	Pilea pumila	Pilea pumila	Canadian Clearweed	2	FACW	-1	Forb	Annual	Native
	Podophyllum	Podophyllum		4	FACU				
podpel	peltatum	peltatum Prunus	May-Apple			1	Forb	Perennial	Native
pruser quealb	Prunus serotina Quercus alba	serotina Quercus alba	Black Cherry Northern White Oak	<u>0</u> 5	FACU FACU	1 1	Shrub Tree	Perennial Perennial	Native Native
		Quercus		5					
quepau	Quercus palustris	palustris ROSA	Pin Oak		FACW	-1	Tree	Perennial	Native
rosmul	Rosa multiflora	MULTIFLORA Rubus	Rambler Rose	0	FACU	1	Shrub	Perennial	Adventive
rubfla	Rubus flagellaris	enslenii	Whiplash Dewberry	5	FACU	1	Shrub	Perennial	Native

		Rubus							
rubhis	Rubus hispidus	hispidus	Bristly Dewberry	7	FACW	-1	Shrub	Perennial	Native
salnig	Salix nigra	Salix nigra	Black Willow	5	OBL	-2	Tree	Perennial	Native
		Saururus							
saucer	Saururus cernuus	cernuus	Lizard's-Tail	7	OBL	-2	Forb	Perennial	Native
			Hemlock Water-						
siusua	Sium suave	Sium suave	Parsnip	7	OBL	-2	Forb	Perennial	Native
		Solidago	Round-Leaf						
solpat	Solidago patula	patula	Goldenrod	9	OBL	-2	Forb	Perennial	Native
		Solidago	Wrinkle-Leaf						
solrug	Solidago rugosa	rugosa	Goldenrod	6	FAC	0	Forb	Perennial	Native
	Symphyotrichum	Aster							
astlat	lateriflorum	lateriflorus	Farewell-Summer	4	FAC	-1	Forb	Perennial	Native
	Symplocarpus	Symplocarpu							
symfoe	foetidus	s foetidus	Skunk-Cabbage	8	OBL	-2	Forb	Perennial	Native
		Dryopteris							
	Thelypteris	noveboracens							
thenov	noveboracensis	is	New York Fern	10	UPL	2	Fern	Perennial	Native
	Thelypteris	Dryopteris							
	palustris var.	thelypteris							
thepal	pubescens	pubescens	Eastern Marsh Fern	7	FACW	-2	Fern	Perennial	Native
		Tilia							
tilame	Tilia americana	americana	American Basswood	5	FACU	1	Tree	Perennial	Native

3. Wet Prairie

SITE:	Marquette Greenway Project - Mesic prairie along the Calumet Trail
LOCALE:	Porter Co
BY:	Lydia Miramontes Loyd
NOTES:	June - October, 2022

CONSERVATISM-			
BASED			ADDITIONAL
METRICS			METRICS
MEAN C		SPECIES	
(NATIVE		RICHNESS	
SPECIES)	4.39	(ALL)	93
		SPECIES	
MEAN C		RICHNESS	
(ALL SPECIES)	3.73	(NATIVE)	79
MEAN C			
(NATIVE TREES)	3.33	% NON-NATIVE	0.15
MEAN C			
(NATIVE		WET INDICATOR	
SHRUBS)	4.40	(ALL)	-0.90
MEAN C			
(NATIVE		WET INDICATOR	
HERBACEOUS)	4.58	(NATIVE)	-1.04
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	39.04	(MIDWEST)	0.86
FQAI		% NATIVE	
(ALL SPECIES)	35.98	PERENNIAL	0.76
ADJUSTED FQAI	40.48	% NATIVE ANNUA	
% C VALUE 0	0.19	% ANNUAL	0.10
% C VALUE 1-3	0.22	% PERENNIAL	0.89
% C VALUE 4-6	0.45		
% C VALUE 7-10	0.14		

Dominant species listed in bold below.

	SPECIES NAME					WET			
SPECIES ACRONYM	(NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	NC-NE WET INDICATOR	INDICATOR (NUMERIC)	HABI T	DURATION	NATIVITY
acerub	Acer rubrum	Acer rubrum	Red Maple	5	FAC	0	Tree	Perennial	Native
acerub	Acei Tubi uiii	ACHILLEA	Reu Mapie	J	FAC	·	nee	refellillal	ivative
achmil	Achillea millefolium		Common Yarrow	0	FACU	1	Forb	Perennial	Adventive
aciiiiii	Acrillea Illillerollulli	Agalinis	Purple False	U	FACU	1	FULD	refellillal	Adventive
aganur	Agalinis purpurea	purpurea	Foxglove	6	FACW	-1	Forb	Annual	Native
agapur	Agaillis purpurea	AGROSTIS	roxgiove	0	FACW	-1	FULD	Allitual	ivative
agrgig	Agrostis gigantea	ALBA	Black Bent	0	FACW	-1	Grass	Perennial	Adventive
agryrg	Agrostis gigantea	ALNUS	DIACK DEIIL	- 0	TACW	-1	Grass	refellillal	Adventive
aladu	Alnus glutinosa	GLUTINOSA	European Alder	0	FACW	-1	Tree	Perennial	Adventive
alnglu	Amphicarpaea	Amphicarpae	American Hog-	U	FACW	-1	Tree	Perenniai	Adventive
ampbra	bracteata	a bracteata	Peanut	5	FAC	0	Vine	Annual	Native
апрыа	Dracteata	Apios	reallut	J	FAC	·	VIIIe	Allitual	ivative
aniama	Apios americana	americana	Groundnut	5	FACW	-1	Forb	Perennial	Native
apiame		Apocynum	Groundilut	5	FACW	-1	FOLD	Perenniai	ivative
	Apocynum cannabinum	sibiricum	Indian Hama	2	FAC	0	Forb	Perennial	Native
apocan	Calillabillulli	Asclepias	Indian-Hemp		FAC	0	FOLD	Perenniai	ivative
accina	Asslanias insarmata	incarnata	Curama Millaused	3	OBL	-2	Forb	Perennial	Native
ascinc	Asclepias incarnata		Swamp Milkweed	3	UBL	-2	FOLD	Perenniai	Native
		Asclepias			LUDI				
ascsyr	Asclepias syriaca	syriaca	Common Milkweed	0	UPL	1	Forb	Perennial	Native
Lides.	Didana annon	Bidens	Nodding Burr-	3	OBL	_	F	A	NI-45
bidcer	Bidens cernua	cernua	Marigold	3	OBL	-2	Forb	Annual	Native
		Boehmeria							
		cylindrica	CII C-II F-I						
la a a a d	Darkerskie sudiaduisa	drummondia	Small-Spike False Nettle	5	OBL	-2	Forb	Danamaial	NI-45
boecyl	Boehmeria cylindrica	na Calamagrosti	Nettie	5	UBL	-2	FOLD	Perennial	Native
1	Calamagrostis		Diversions	6	ODI	-2	C	Danamaial	NI-45
calcan	canadensis	s canadensis Convolvulus	Bluejoint	В	OBL	-2	Grass	Perennial	Native
coloon	Calvatagia sanium		Hedge False	4	FAC	0	Fowh	Downwini	Nativo
calsep	Calystegia sepium	sepium Carex	Bindweed	1	FAC	0	Forb	Perennial	Native
avla av	Carex lacustris	lacustris	Lakabank Cadaa	5	OBL	١ ,	Codao	Perennial	Native
cxlacu	Carex lacustris	Carex	Lakebank Sedge	5	UBL	-2	Sedge	Perenniai	ivative
	Carran Innovitiana		 C- d		ODI	_	C	Danamaial	NI-45
cxlupn	Carex lupulina	lupulina	Hop Sedge Uptight Sedge	<u>6</u> 5	OBL OBL	-2 -2	Sedge	Perennial	Native
cxstri	Carex stricta	Carex stricta CELASTRUS	Optignt Seage	5	UBL	-2	Sedge	Perennial	Native
aalawb	Celastrus orbiculatus	ORBICULATU	Asian Dittarawast	0	UPL	2	Vino	Downwini	Advantiva
celorb	Centaurium	S CENTAURIUM	Asian Bittersweet	U	UPL		Vine	Perennial	Adventive
connul	pulchellum		Branchad Conta	0	FAC	1	Fork	Annual	Advantivi
cenpul	puicnellum		Branched Centaury	U	FAC	1	Forb	Annual	Adventive
-11-	Chalana alahua	Chelone	 	0	ODL	-2	F	Danamaial	N-4:
chegla	Chelone glabra	glabra Cicuta	White Turtlehead Spotted Water-	8	OBL	-2	Forb	Perennial	Native
ai ama a	Ciauta magulata		l '	6	OBL	,	Fork	Dovennia	Native
cicmac	Cicuta maculata	maculata	Hemlock	6	OBL	-2	Forb	Perennial	Native

		Circaea Iutetiana	Broad-Leaf Enchanter's-						
circan	Circaea canadensis	canadensis Clematis	Nightshade Devil's-Darning-	3	FACU	1	Forb	Perennial	Native
clevir	Clematis virginiana	virginiana Cornus	Needles	4	FAC	0	Vine	Perennial	Native
corrac	Cornus racemosa	racemosa	Gray Dogwood	1	FAC	0	Shrub	Perennial	Native
corame	Corylus americana	Corylus americana	American Hazelnut	5	FACU	1	Shrub	Perennial	Native
	Dichanthelium	Panicum	Tapered Rosette	4	54.6	•			N
dicacu	acuminatum Dichanthelium	implicatum; Panicum	Grass Deer-Tongue	4	FAC	0	Grass	Perennial	Native
diccla	clandestinum	clandestinum Dioscorea	Rosette Grass	4	FACW	-1	Grass	Perennial	Native
diovil	Dioscorea villosa	villosa Aster	Wild Yam	5	FAC	0	Vine	Perennial	Native
astumb	Doellingeria umbellata	umbellatus Echinocystis	Parasol White-Top	8	FACW	-1	Forb	Perennial	Native
echlob	Echinocystis lobata	lobata	Wild Cucumber	4	FACW	-1	Vine	Annual	Native
eupper	Eupatorium perfoliatum	Eupatorium perfoliatum	Common Boneset	4	FACW	-2	Forb	Perennial	Native
eupser	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	0	Forb	Perennial	Native
		Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia							
eutgra	Euthamia graminifolia	nuttallii	Flat-Top Goldentop	4	FAC	-1	Forb	Perennial	Native
eupmac	Eutrochium maculatum	Eupatorium maculatum	Spotted Trumpetweed	5	OBL	-2	Forb	Perennial	Native
	Fraxinus	Fraxinus pennsylvanic a subintegerri ma; Fraxinus							
frapen	pennsylvanica	lanceolata Helianthus	Green Ash	4	FACW	-1	Tree	Perennial	Native
helgro	Helianthus grosseserratus	grosseserratu s	Saw-Tooth Sunflower	4	FACW	-1	Forb	Perennial	Native
heltub	Helianthus tuberosus	Helianthus tuberosus	Jerusalem- Artichoke	3	FACU	1	Forb	Perennial	Native
_		Impatiens	Spotted Touch-	_		_			
impcap	Impatiens capensis Iris virginica var.	capensis Iris virginica	Me-Not	3	FACW	-1	Forb	Annual	Native
irivir	shrevei	shrevei Juncus	Virginia Blueflag	5	OBL	-2	Forb	Perennial	Native
junacu	Juncus acuminatus	acuminatus Juncus	Knotty-Leaf Rush	4	OBL	-2	Forb	Perennial	Native
junart	Juncus articulatus	articulatus Juncus	Joint-Leaf Rush	8	OBL	-2	Forb	Perennial	Native
juncan	Juncus canadensis	canadensis Juncus	Canadian Rush	5	OBL	-2	Forb	Perennial	Native
jundud	Juncus dudleyi	dudleyi	Dudley's Rush	2	FACW	-1	Forb	Perennial	Native
juneff	Juncus effusus ssp. solutus	Juncus effusus	Lamp Rush	5	OBL	-2	Forb	Perennial	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	-1	Forb	Perennial	Native
lapcan	Laportea canadensis	Laportea canadensis	Canadian Wood- Nettle	5	FACW	-1	Forb	Perennial	Native
leeory	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	3	OBL	-2	Grass	Perennial	Native
linben	Lindera benzoin	Lindera benzoin	Northern Spicebush	5	FACW	-1	Shrub	Perennial	Native
lobcar	Lobelia cardinalis	Lobelia cardinalis	Cardinal-Flower	7	OBL	-2	Forb	Perennial	Native
lobsip	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	4	FACW	-2	Forb	Perennial	Native
ludalt	Ludwigia alternifolia	Ludwigia alternifolia	Seedbox	6	OBL	-2	Forb	Perennial	Native
lycame	Lycopus americanus	Lycopus americanus	Cut-Leaf Water- Horehound	4	OBL	-2	Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	-2	Forb	Perennial	Adventive
i v LSQ1	Lycin um Salicaria	MELILOTUS							
	Malilator - 15		White Sweet-Clover	0	UPL	2	Forb	Biennial	Adventive
melalb	Melilotus albus	ALBA Mimulus	Allegheny Monkey-						
	Melilotus albus Mimulus ringens		Allegheny Monkey- Flower	4	OBL	-2	Forb	Perennial	Native
melalb		Mimulus ringens		5	OBL FACW	-2 -1	Forb Fern	Perennial Perennial	Native Native
melalb mimrin	Mimulus ringens	Mimulus ringens Onoclea sensibilis	Flower						

		la .	T T		1	1			
panvir	Panicum virgatum	Panicum virgatum	Wand Panic Grass	3	FAC	0	Grass	Perennial	Native
panvii	ranicum virgatum	Parthenociss	Wallu Fallic Grass	3	TAC	0	Grass	rerenniai	Native
	Parthenocissus	us							
parqui	quinquefolia	quinquefolia Polygonum	Virginia-Creeper	4	FACU	1	Vine	Perennial	Native
		coccineum;							
		Polygonum							
peramp	Persicaria amphibia	amphibium stipulaceum	Water Smartweed	4	OBL	-2	Forb	Perennial	Native
регаттр	r craicaria ampinbia	Polygonum	Water Smartweed		OBE		1015	rerennar	Native
		sagittatum;							
persag	Persicaria sagittata	Tracaulon sagittatum	Arrow-Leaf Tearthumb	7	OBL	-2	Forb	Annual	Native
persug	i ci sicuriu sugittutu	PHALARIS	reartifumb	,	OBE -		1015	7 iiii dai	Nutive
١.	DI I : II	ARUNDINACE		0	54 CW				
phaaru	Phalaris arundinacea Phragmites	A PHRAGMITE	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
	australis ssp.	s							
phrausu	australis	AUSTRALIS	Common Reed	0	FACW	-1	Grass	Perennial	Adventive
pilpum	Pilea pumila	Pilea pumila	Canadian Clearweed	2	FACW	-1	Forb	Annual	Native
FF		Populus					1 4.4		
popdel	Populus deltoides	deltoides	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
poptre	Populus tremuloides	Populus tremuloides	Quaking Aspen	3	FAC	0	Tree	Perennial	Native
	·	Quercus							
quepau	Quercus palustris	palustris ROSA	Pin Oak	5	FACW	-1	Tree	Perennial	Native
rosmul	Rosa multiflora		Rambler Rose	0	FACU	1	Shrub	Perennial	Adventive
		Rosa							
rospal saldis	Rosa palustris Salix discolor	palustris	Swamp Rose Pussy Willow	<u>8</u> 3	OBL FACW	-2 -1	Shrub Shrub	Perennial Perennial	Native Native
Saluis	Salix discolor	Scirpus	Pussy Willow	<u> </u>	FACW	-1	Siliub	refellillal	Native
sciatv	Scirpus atrovirens	atrovirens	Dark-Green Bulrush	4	OBL	-2	Sedge	Perennial	Native
scicyp	Scirpus cyperinus	Scirpus cyperinus	Cottongrass Bulrush	6	OBL	-2	Sedge	Perennial	Native
ЗСІСУР	Scripus cypermus	Scutellaria	Dali asii		OBE		Scage	rerennar	Native
sculat	Scutellaria lateriflora	lateriflora	Mad Dog Skullcap	4	OBL	-2	Forb	Perennial	Native
erehie	Senecio hieraciifolius	Erechtites hieracifolia	American Burnweed	0	FACU	0	Forb	Annual	Native
Creme	Schedo meraemonas	SOLANUM	Climbing		17.00		1015	7 iiii dai	Nutive
soldul	Solanum dulcamara	DULCAMARA	Nightshade	0	FAC	0	Vine	Perennial	Adventive
solcan	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1	Forb	Perennial	Native
oo.ca.r	Condago canadensis	Solidago	Round-Leaf		17100		10.5	. c. ca.	1101110
solpat	Solidago patula	patula	Goldenrod Wrinkle-Leaf	9	OBL	-2	Forb	Perennial	Native
solrug	Solidago rugosa	Solidago rugosa	Goldenrod	6	FAC	0	Forb	Perennial	Native
		SONCHUS							
sonarv	Sonchus arvensis	ARVENSIS Spiranthes	Field Sow-Thistle White Nodding	0	FACU	1	Forb	Perennial	Adventive
spicer	Spiranthes cernua	cernua	Ladies'-Tresses	4	FACW	-1	Forb	Perennial	Native
	Symphyotrichum		White Panicled						
astsim	lanceolatum Symphyotrichum	Aster simplex Aster	American-Aster	3	FACW	0	Forb	Perennial	Native
astlat	lateriflorum		Farewell-Summer	4	FAC	-1	Forb	Perennial	Native
	Symphyotrichum	Aster	Willow-Leaf	_	54.000				
astpra	praealtum	praealtus Aster	American-Aster	7	FACW	-1	Forb	Perennial	Native
		puniceus;							
	Cumphyotrial	Aster	Durnio Ctom						
astpun	Symphyotrichum puniceum	puniceus firmus	Purple-Stem American-Aster	8	OBL	-2	Forb	Perennial	Native
	İ	Symplocarpu							
symfoe	Symplocarpus foetidus	s foetidus Dryopteris	Skunk-Cabbage	8	OBL	-2	Forb	Perennial	Native
	Thelypteris palustris	thelypteris							
drythe	var. pubescens	pubescens	Eastern Marsh Fern	7	FACW	-2	Fern	Perennial	Native
toxrad	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	0	Vine	Perennial	Native
COATGU	Taurealis	TYPHA	Lustern Fulsull-1Vy		IAC	, , , , , , , , , , , , , , , , , , ,	VIIIE	i ci ciiillai	IAGUAG
l.	_ ,	ANGUSTIFOL	Narrow-Leaf Cat-	_		_			
typang	Typha angustifolia	IA TYPHA X	Tail	0	OBL	-2	Forb	Perennial	Adventive
typgla	Typha X glauca	GLAUCA	Hybrid Cat-Tail	0	OBL	-2	Forb	Perennial	Adventive
	Illmus providence	Ulmus	American Elec		FACIAL	4		Donoi-I	Neti
ulmame vitlab	Ulmus americana Vitis labrusca	americana Vitis labrusca	American Elm Fox Grape	<u>3</u> 5	FACW FACU	-1 1	Tree Vine	Perennial Perennial	Native Native
		Vitis riparia	·						
vitrip	Vitis riparia	var. syrticola	River-Bank Grape	1	FAC	-1	Vine	Perennial	Native

4. Forested Wetland

	Marquette Greenway Project - Forested wetlands not including
SITE:	hydromesophytic swamp forest in the Great Marsh
LOCALE:	Porter Co
BY:	Lydia Miramontes Loyd
NOTES:	June - October, 2022

CONSERVATISM-			
			ADDITIONAL
BASED			ADDITIONAL
METRICS			METRICS
MEAN C		SPECIES	
(NATIVE		RICHNESS	
SPECIES)	5.04	(ALL)	97
		SPECIES	
MEAN C		RICHNESS	
(ALL SPECIES)	4.41	(NATIVE)	85
MEAN C			
(NATIVE TREES)	4.94	% NON-NATIVE	0.12
MEAN C			
(NATIVE		WET INDICATOR	
SHRUBS)	5.78	(ALL)	-0.46
MEAN C			
(NATIVE		WET INDICATOR	
HERBACEOUS)	5.07	(NATIVE)	-0.54
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	46.42	(MIDWEST)	0.73
FQAI		% NATIVE	
(ALL SPECIES)	43.46	PERENNIAL	0.80
ADJUSTED FQAI	47.14	% NATIVE ANNUA	0.07
% C VALUE 0	0.14	% ANNUAL	0.08
% C VALUE 1-3	0.14	% PERENNIAL	0.91
% C VALUE 4-6	0.48		
% C VALUE 7-10	0.23		

Dominant species are listed in bold.

	SPECIES NAME				NC-NE WET	WET			
SPECIES	(NWPL/	SPECIES	соммон		INDICATO	INDICATOR	HABI		
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	R	(NUMERIC)	т	DURATION	NATIVITY
acerub	Acer rubrum	Acer	Red Maple	5	FAC	0	Tree	Perennial	Native
		Acer							
		saccharinu							
acesai	Acer saccharinum		Silver Maple	1	FACW	-1	Tree	Perennial	Native
		Adiantum	Northern						
adiped	Adiantum pedatum	pedatum	Maidenhair	10	FACU	1	Fern	Perennial	Native
		ALLIARIA							
allpet	Alliaria petiolata	PETIOLATA	Garlic-Mustard	0	FACU	0	Forb	Biennial	Adventive
	Amelanchier	Amelanchier	Downy Service-						
amearb	arborea	arborea	Berry	8	FACU	1	Tree	Perennial	Native
	Amphicarpaea	Amphicarpae	American Hog-						
ampbra	bracteata	a bracteata	Peanut	5	FAC	0	Vine	Annual	Native
		Apios							
apiame	Apios americana	americana	Groundnut	5	FACW	-1	Forb	Perennial	Native
		Arisaema							
		triphyllum							
		ssp.							
		pusillum;							
		Arisaema							
		triphyllum							
	Arisaema	ssp.							
aritri	triphyllum	stewardsonii	Jack-In-The-Pulpit	5	FAC	-1	Forb	Perennial	Native
		BERBERIS							
	Berberis	THUNBERGI							
berthu	thunbergii	I	Barberry	0	FACU	1	Shrub	Perennial	Adventive
		Bidens							
bidfro	Bidens frondosa	frondosa	Devil's-Pitchfork	1	FACW	-1	Forb	Annual	Native
		Boehmeria							
		cylindrica							
	Boehmeria	drummondia	Small-Spike False						
boecyl	cylindrica	na	Nettle	5	OBL	-2	Forb	Perennial	Native
		Bromus							
		pubescens;							
		Bromus							
		nottowayanu	Hairy Woodland						
bropub	Bromus pubescens	S	Brome	5	FACU	1	Grass	Perennial	Native
	L		Eastern Woodland		1	_	l		L
cxblan	Carex blanda	Carex blanda	Sedge	1	FAC	0	Sedge	Perennial	Native
		Carex							
cxbrom	Carex bromoides	bromoides	Brome-Like Sedge	10	FACW	-1	Sedge	Perennial	Native
cxradi	Carex radiata		Eastern Star Sedge	5	FAC	2	Sedge	Perennial	Native
cxrose	Carex rosea	Carex rosea	Rosy Sedge	5	UPL	2	Sedge	Perennial	Native
cxstip	Carex stipata	Carex stipata	Stalk-Grain Sedge	4	OBL	-2	Sedge	Perennial	Native

	C=:	IC	ı	I		1		I	1
	Carpinus caroliniana ssp.	Carpinus caroliniana	American						
carcar	virginiana	virginiana	Hornbeam	8	FAC	0	Tree	Perennial	Native
car car	- Tri girii aria	Carya	110111500111		17.0		1	. c. c	
carcor	Carya cordiformis	cordiformis	Bitter-Nut Hickory	5	FAC	1	Tree	Perennial	Native
		CELASTRUS							
	Celastrus	ORBICULATU							
celorb	orbiculatus	S	Asian Bittersweet	0	UPL	2	Vine	Perennial	Adventive
	C	Cephalanth							
conocc	Cephalanthus occidentalis	us occidentalis	Common	5	OBL	-2	Shrub	Perennial	Native
серосс	occidentalis	Cinna	Buttonbusn	- 3	OBL		Siliub	Pereilliai	Native
cinaru	Cinna arundinacea	arundinacea	Sweet Wood-Reed	5	FACW	-1	Grass	Perennial	Native
		CIRSIUM							
cirarv	Cirsium arvense	ARVENSE	Canadian Thistle	0	FACU	1	Forb	Perennial	Adventive
		Cornus							
corrac	Cornus racemosa	racemosa	Gray Dogwood	1	FAC	0	Shrub	Perennial	Native
	Cryptotaenia	Cryptotaenia	C		FAC		F	Danasaial	NI-4:
crycan	canadensis Dichanthelium	canadensis Panicum	Canadian Honewort Tapered Rosette	4	FAC	0	Forb	Perennial	Native
dicacu	acuminatum	implicatum;	Grass	4	FAC	0	Grass	Perennial	Native
ulcaca	acammacam	Dioscorea	01033	7	1AC		Grass	rerenniai	INGLIVE
diovil	Dioscorea villosa	villosa	Wild Yam	5	FAC	0	Vine	Perennial	Native
	Dryopteris	Dryopteris	Spinulose Wood						
drycar	carthusiana	spinulosa	Fern	8	FACW	-1	Fern	Perennial	Native
		Equisetum							
equarv	Equisetum arvense		Field Horsetail	0	FAC	0	Fern	Perennial	Native
a at ma a	Eurybia	Aster	Large-Leaf Wood-	0	l un	1 .	Fowb	Downminl	Native
astmac	macrophylla Eutrochium	macrophyllus Eupatorium	Spotted	9	UPL	1	Forb	Perennial	Native
eupmac	maculatum	maculatum	Trumpetweed	5	OBL	-2	Forb	Perennial	Native
сиртнис	macaiatam	Fagus	Trumpetweed		- OBL		1015	rerenniai	INGLIVE
faggra	Fagus grandifolia	grandifolia	American Beech	5	FACU	1	Tree	Perennial	Native
		Fraxinus							
		pennsylvanic							
		a							
		subintegerri							
franco	Fraxinus	ma; Fraxinus Ianceolata	Croon Ach	4	FACW	1	Troo	Doronnial	Nativo
frapen	pennsylvanica	Galium	Green Ash Common Marsh	4	FACW	-1	Tree	Perennial	Native
galpal	Galium palustre	palustre	Bedstraw	10	OBL	-2	Forb	Perennial	Native
gaipai	Canam parastre	Geum	Dodder arr		1	_	1.0.5	. cremma	Tructive .
geucan	Geum canadense	canadense	White Avens	1	FAC	0	Forb	Perennial	Native
		Glyceria							
		striata var.				1 -			
glystr	Glyceria striata	stricta	Fowl Manna Grass	4	OBL	-2	Grass	Perennial	Native
hacvir	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	1	FACU	1	Forb	Perennial	Native
hacvir	Hamamelis	Hamamelis	American Witch-	1	FACU	1	FOID	refellillal	ivative
hamvir	virginiana	virginiana	Hazel	8	FACU	1	Shrub	Perennial	Native
	Iris virginica var.	Iris virginica	l lazer		17.00	_		1 0101111101	
irivir	shrevei	shrevei	Virginia Blueflag	5	OBL	-2	Forb	Perennial	Native
	Juncus effusus ssp.	Juncus							
juneff	solutus	effusus	Lamp Rush	5	OBL	-2	Forb	Perennial	Native
_		Leersia		_	!	_			
leeory	Leersia oryzoides	oryzoides	Rice Cut Grass	3	OBL	-2	Grass	Perennial	Native
leevir	Leersia virginica	Leersia virginica	White Grass	5	FACW	-1	Grass	Perennial	Native
leevii	Leersia virginica	Lindera	Willie Grass	J	FACW	-1	Grass	refellillal	ivative
linben	Lindera benzoin	benzoin	Northern Spicebush	5	FACW	-1	Shrub	Perennial	Native
	Liriodendron	Liriodendron				_			
lirtul	tulipifera	tulipifera	Tuliptree	5	FACU	1	Tree	Perennial	Native
		Lobelia							
lobsip	Lobelia siphilitica	siphilitica	Great Blue Lobelia	4	FACW	-2	Forb	Perennial	Native
11-1		LONICERA X	Showy Fly	_	F4.0::	_	[c		A 4
lonbel	Lonicera X bella	BELLA	Honeysuckle	0	FACU	1	Shrub	Perennial	Adventive
lvenum	Lysimachia nummularia	LYSIMACHIA	Creeping-Jenny	0	FACW	-1	Forb	Perennial	Adventive
lysnum	nummulana	LYTHRUM	Creeping-Jenny	J	IACW	-1	1 010	rerennial	Auventive
lytsal	Lythrum salicaria	SALICARIA	Purple Loosestrife	0	OBL	-2	Forb	Perennial	Adventive
,	,	Medeola	Indian Cucumber-	-					
medvir	Medeola virginiana	virginiana	Root	10	UPL	1	Forb	Perennial	Native
		Mitchella				1			
mitrep	Mitchella repens	repens	Partridge-Berry	10	FACU	1	Shrub	Perennial	Native
nuggy)	Nivers or division	Nyssa	Block Tun-1-	_	FAC		Te	Down: -:-!-!	Native
nyssyl	Nyssa sylvatica	Sylvatica	Black Tupelo	7	FAC	0	Tree	Perennial	Native
onosen	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	-1	Fern	Perennial	Native
01103611	Onociea selisibilis	Osmorhiza	Schaluve Feffi	<u> </u>	IACW	-1	reili	refellilldi	ivative
osmcli	Osmorhiza claytonii	I	Hairy Sweet-Cicely	4	FACU	1	Forb	Perennial	Native
	ciay com	Osmunda	,	·	1		. 5.5		
	Osmunda	cinnamome				1			1
		I	Cinnamon Fern	8	FACW	-1	Fern	Perennial	Native
osmcin	cinnamomeum	a	Cililianion i em		I ACII				
osmcin		Osmunda	Cilliamon Term		IACU				
osmcin osmspe	cinnamomeum Osmunda spectabilis		Royal Fern	8	OBL	-2	Fern	Perennial	Native

		SENECIO	Cress-Leaf						
sengla	Packera glabella	GLABELLUS	Groundsel	0	FACW	-1	Forb	Annual	Adventive
		Polygonum coccineum;							
		Polygonum							
		amphibium							
peramp	Persicaria amphibia	stipulaceum	Water Smartweed	4	OBL	-2	Forb	Perennial	Native
	Persicaria	Polygonum pensylvanicu							
perpen	pensylvanica	m	Pinkweed	0	FACW	-1	Forb	Annual	Native
		Polygonum		_		_			
perpun	Persicaria punctata	punctatum PHALARIS	Dotted Smartweed	4	OBL	-2	Forb	Annual	Native
	Phalaris	ARUNDINACE							
phaaru	arundinacea	A	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
phldiv	Phlox divaricata	Phlox divaricata	Wild Blue Phlox	5	FACU	1	Forb	Perennial	Native
pilialv	Fillox divalicata	uivaiicata	Canadian		TACO		1010	referminal	INALIVE
pilpum	Pilea pumila	Pilea pumila	Clearweed	2	FACW	-1	Forb	Annual	Native
quealb	Quercus alba	Quercus alba	Northern White Oak	5	FACU	1	Tree	Perennial	Native
quepau	Quercus palustris	Quercus palustris	Pin Oak	5	FACW	-1	Tree	Perennial	Native
		Quercus							
querub	Quercus rubra	rubra	Northern Red Oak	5	FACU	1	Tree	Perennial	Native
ranfla	Ranunculus flabellaris	Ranunculus flabellaris	Greater Yellow Water Buttercup	5	OBL	-2	Forb	Perennial	Native
Tarma	Ranunculus	Ranunculus	Water Battereap		002		1 0.5	. c. ca.	
ranrec	recurvatus	recurvatus	Blisterwort	5	FACW	-1	Forb	Annual	Native
ransce	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	4	OBL	-2	Forb	Annual	Native
Tansee	Seciendeds	Ribes	Eastern Prickly	-	OBL		1015	Ailidai	IVACIVE
ribcyn	Ribes cynosbati	cynosbati	Gooseberry	5	FACU	0	Shrub	Perennial	Native
rosmul	Rosa multiflora	ROSA	Rambler Rose	0	FACU	1	Shrub	Perennial	Adventive
TOSITIUI	Rosa muitinora	Rosa	Kalliblei Kose	0	TACO		Siliub	refermina	Auventive
rospal	Rosa palustris	palustris	Swamp Rose	8	OBL	-2	Shrub	Perennial	Native
	Dubus flassilasia	Rubus	Mile in least Danishama	-	FACIL		Church	Danas aial	Nations.
rubfla	Rubus flagellaris	enslenii Rumex	Whiplash Dewberry	5	FACU	1	Shrub	Perennial	Native
rumver	Rumex verticillatus	verticillatus	Swamp Dock	8	OBL	-2	Forb	Perennial	Native
		Salix	5 1 1 6 14 6 14 6 14		546044	_	_		
salamy salnig	Salix amygdaloides Salix nigra	Salix nigra	Peach-Leaf Willow Black Willow	<u>4</u> 5	FACW OBL	- <u>1</u> -2	Tree Tree	Perennial Perennial	Native Native
<u>Janny</u>	Canx mgra	Saururus	Diddit Willow		002		1100	. c. ca.	1144114
saucer	Saururus cernuus	cernuus	Lizard's-Tail	7	OBL	-2	Forb	Perennial	Native
sculat	Scutellaria lateriflora	Scutellaria lateriflora	Mad Dog Skullcap	4	OBL	-2	Forb	Perennial	Native
Scarac	lacermora	lacermora	Hemlock Water-	•	OBL		1015	rerennar	Nucive
siusua	Sium suave	Sium suave	Parsnip	7	OBL	-2	Forb	Perennial	Native
smirot	Smilax rotundifolia	Smilax rotundifolia	Horsebrier	5	FAC	0	Vine	Perennial	Native
3111100	Simux rotarianona	SOLANUM	Climbing		17.0		VIIIC	rerennar	Nucive
soldul	Solanum dulcamara		Nightshade	0	FAC	0	Vine	Perennial	Adventive
solcan	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1	Forb	Perennial	Native
5010411		Solidago			17.00		1 0.5	. c. ca.	
solfle	Solidago flexicaulis	flexicaulis	Zigzag Goldenrod	7	FACU	1	Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	-1	Forb	Perennial	Native
301919	Symphyotrichum	giguiicea	White Panicled	•	17.00		1015	1 Creminal	Nucive
astsim	lanceolatum		American-Aster	3	FACW	0	Forb	Perennial	Native
astlat	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FAC	-1	Forb	Perennial	Native
astiat	Symphyotrichum	Aster	Willow-Leaf		TAC		1010	refellillal	INALIVE
astpra	praealtum	praealtus	American-Aster	7	FACW	-1	Forb	Perennial	Native
symfoe	Symplocarpus foetidus	Symplocarpu s foetidus	Skunk-Cabbage	8	OBL	-2	Forb	Perennial	Native
Sylliloe	Toetidus	Thalictrum	Skulik-Cabbage		OBL	-2	FOID	refellillal	ivative
	Thalictrum	dasycarpum							
thadas	dasycarpum		Purple Meadow-Rue	6	FACW	-1	Forb	Perennial	Native
	Thelypteris palustris var.	Dryopteris thelypteris							
thepal	pubescens	pubescens	Eastern Marsh Fern	7	FACW	-2	Fern	Perennial	Native
tovend	Toxicodendron	Rhus	Engtown Deiter T	2	FAC	0	\ \(\text{i} = -	Down!-!	Native-
toxrad	radicans	radicans Trientalis	Eastern Poison-Ivy	2	FAC	0	Vine	Perennial	Native
tribor	Trientalis borealis	borealis	Maystar	10	FAC	0	Forb	Perennial	Native
		Ulmus	A		F * C :::		-	D	N-+
ulmame ulmrub	Ulmus americana Ulmus rubra	americana Ulmus rubra	American Elm Slippery Elm	<u>3</u>	FACW FAC	- <u>1</u> 0	Tree Tree	Perennial Perennial	Native Native
ub	Viburnum opulus	VIBURNUM	Highbush-	т	1770	<u> </u>	1100	i ci ci ii ii ii	
vibopu	var. opulus	OPULUS	Cranberry	0	FACW	0	Shrub	Perennial	Adventive
vibpru	Viburnum prunifolium	Viburnum prunifolium	Smooth Blackhaw	5	FACU	1	Shrub	Perennial	Native
· iopi u	pramonant	Viola	S.HOSCH DIGCKHAW	J	1,700		Sinub	i creminal	. TOUTVC
viosor	Viola sororia	priceana	Hooded Blue Violet	3	FAC	0	Forb	Perennial	Native

Γ			Vitis riparia							
١	ritrip	Vitis riparia	var. syrticola	River-Bank Grape	1	FAC	-1	Vine	Perennial	Native

5. Road Beds

SITE:	Marquette Greenway Project - Road beds					
LOCALE:	LOCALE: Porter Co					
BY:	Lydia Miramontes Loyd					
NOTES:	lune - October, 2022					

CONSERVATISM-			
BASED			ADDITIONAL
METRICS			METRICS
MEAN C		SPECIES	PILIKICS
(NATIVE		RICHNESS	
SPECIES)	3.52	(ALL)	112
3FECILS)	5.52	SPECIES	112
MEAN C		RICHNESS	
(ALL SPECIES)	2.42	(NATIVE)	77
MEAN C	2.42	(NATIVE)	//
(NATIVE TREES)	4.31	% NON-NATIVE	0.31
MEAN C	4.31	% NON-NATIVE	0.31
		WET INDICATOR	
(NATIVE	3.50	WET INDICATOR	0.44
SHRUBS) MEAN C	2.50	(ALL)	0.41
(NATIVE		WET INDICATOR	
HERBACEOUS)	3.40	(NATIVE)	0.16
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	30.88	(MIDWEST)	0.47
FQAI		% NATIVE	
(ALL SPECIES)	25.61	PERENNIAL	0.62
ADJUSTED FQAI	29.18	% NATIVE ANNUA	0.06
% C VALUE 0	0.43	% ANNUAL	0.08
% C VALUE 1-3	0.21	% PERENNIAL	0.88
% C VALUE 4-6	0.27		
% C VALUE 7-10	0.09		

Dominant species for this community type are listed in bold below.

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	NC-NE WET	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
		Acalypha	Common Three-						
acarho	Acalypha rhomboidea	rhomboidea	Seed-Mercury	0	FACU	1	Forb	Annual	Native
acerub	Acer rubrum	Acer rubrum	Red Maple	5	FAC	0	Tree	Perennial	Native
		Acer					_		
acesai	Acer saccharinum	saccharinum	Silver Maple	1	FACW	-1	Tree	Perennial	Native
		ACHILLEA	, v		FACU	_			
achmil	Achillea millefolium	MILLEFOLIUM	Common Yarrow	0	FACU	1	Forb	Perennial	Adventive
	A	Agrimonia	Tall Hairy	2	FACU		Fl-	Danie i i i	N-ti
agrgry	Agrimonia gryposepala		Grooveburr	2	FACU	1	Forb	Perennial	Native
	A avastia navannana	Agrostis	Upland Bent	5	FACU	0	Grass	Downwini	N-ti
agrper	Agrostis perennans	perennans AJUGA	органа венс	3	FACU	U	Grass	Perennial	Native
ajurep	Ajuga reptans	REPTANS	Carpet Bugleweed	0	UPL	2	Forb	Perennial	Adventive
ајигер	Ajuga reptans	ALLIARIA	Carpet Bugieweeu		UPL		FOID	refellillal	Auventive
allpet	Alliaria petiolata	PETIOLATA	Garlic-Mustard	0	FACU	0	Forb	Biennial	Adventive
шпрес	Amaria pediciata	ALNUS	Odriic Plastara	0	TACO	0	1010	Dicillia	Auventive
alnglu	Alnus glutinosa	GLUTINOSA	European Alder	0	FACW	-1	Tree	Perennial	Adventive
unigia	7 tiridə graciiridəd	Ambrosia	European 7 lider		171011	-	1100	1 Cremman	Advertieve
	Ambrosia	artemisiifolia							
ambart	artemisiifolia	elatior	Annual Ragweed	0	FACU	1	Forb	Annual	Native
		Anemone		-					
anecyl	Anemone cylindrica	cylindrica	Thimbleweed	8	UPL	2	Forb	Perennial	Native
,	,	ARTEMISIA							
artvul	Artemisia vulgaris	VULGARIS	Common Mugwort	0	UPL	2	Forb	Perennial	Adventive
		Asclepias							
ascinc	Asclepias incarnata	incarnata	Swamp Milkweed	3	OBL	-2	Forb	Perennial	Native
		BERBERIS							
berthu	Berberis thunbergii	THUNBERGII	Japanese Barberry	0	FACU	1	Shrub	Perennial	Adventive
		Betula							
betpap	Betula papyrifera	papyrifera	Paper Birch	8	FACU	1	Tree	Perennial	Native
bropub	Bromus pubescens	Bromus pubescens; Bromus nottowayanus	Hairy Woodland Brome	5	FACU	1	Grass	Perennial	Native
			Eastern Woodland						
cxblan	Carex blanda	Carex blanda	Sedge	1	FAC	0	Sedge	Perennial	Native
		Carex	Greater Bladder						
cxintu	Carex intumescens	intumescens	Sedge	8	FACW	-1	Sedge	Perennial	Native
	Celastrus	CELASTRUS ORBICULATU							
celorb	orbiculatus	s	Asian Bittersweet	0	UPL	2	Vine	Perennial	Adventive
		Cercis							
cercan	Cercis canadensis	canadensis	Redbud	5	FACU	1	Tree	Perennial	Native

		Ia						Г	
		Satureja vulgaris							
clivul	Clinopodium vulgare	neogaea	Wild Basil	4	UPL	2	Forb	Perennial	Native
	Conoclinium	EUPATORIUM							
concoe	coelestinum		Blue Mistflower	0	FAC	-1	Forb	Perennial	Adventive
		Corylus		_		_			
corame	Corylus americana	americana Cuscuta	American Hazelnut	5	FACU	1	Shrub	Perennial	Native
cusgro	Cuscuta gronovii	gronovii	Common Dodder	5	UPL	2	Vine	Annual	Native
dacglo	Dactylis glomerata	DACTYLIS GLOMERATA	Orchard Grass	0	FACU	1	Grass	Perennial	Adventive
dacgio	Dactylis glorilerata	DAUCUS	Orchard Grass	0	TACO	1	Grass	rerenniai	Adventive
daucar	Daucus carota	CAROTA	Queen Anne's Lace	0	UPL	2	Forb	Biennial	Adventive
dicacu	Dichanthelium acuminatum	Panicum implicatum;	Tapered Rosette Grass	4	FAC	0	Grass	Perennial	Native
	Dichanthelium	Panicum	Deer-Tongue						
pancla	clandestinum	clandestinum Aster	Rosette Grass	4	FACW	-1	Grass	Perennial	Native
astumb	Doellingeria umbellata	umbellatus	Parasol White-Top	8	FACW	-1	Forb	Perennial	Native
elaumb	Elaeagnus umbellata	ELAEAGNUS UMBELLATA	Autumn-Olive	0	UPL	2	Shrub	Perennial	Adventive
Ciddiiib	umbenata	Equisetum	Autumi Onve		U L		Siliub	reremilar	Adventive
equarv	Equisetum arvense	arvense Eragrostis	Field Horsetail	0	FAC	0	Fern	Perennial	Native
eraspe	Eragrostis spectabilis	spectabilis	Purple Love Grass	3	UPL	2	Grass	Perennial	Native
	F	Conyza	Canadian		FACIL				
concan	Erigeron canadensis	canadensis EUONYMUS	Horseweed	0	FACU	1	Forb	Annual	Native
euoala	Euonymus alatus	ALATUS	Winged Euonymus	0	UPL	2	Shrub	Perennial	Adventive
		Solidago graminifolia;							
		Solidago							
		graminifolia nuttallii;							
		Euthamia							
eutgra	Euthamia graminifolia	nuttallii	Flat-Top Goldentop	4	FAC	-1	Forb	Perennial	Native
eupmac	Eutrochium maculatum	Eupatorium maculatum	Spotted Trumpetweed	5	OBL	-2	Forb	Perennial	Native
		Fragaria							
fravir	Fragaria virginiana	virginiana	Virginia Strawberry	0	FACU	1	Forb	Perennial	Native
	Fraxinus	Fraxinus pennsylvanica subintegerrima ; Fraxinus							
frapen	pennsylvanica	lanceolata	Green Ash	4	FACW	-1	Tree	Perennial	Native
geucan	Geum canadense	Geum canadense	White Avens	1	FAC	0	Forb	Perennial	Native
		GLECHOMA							
glehed	Glechoma hederacea	HEDERACEA Glyceria	Groundivy	0	FACU	1	Forb	Perennial	Adventive
		striata var.							
glystr	Glyceria striata	stricta Hackelia	Fowl Manna Grass	4	OBL	-2	Grass	Perennial	Native
hacvir	Hackelia virginiana	virginiana	Beggar's-Lice	1	FACU	1	Forb	Perennial	Native
h	U a si a coma accoma ata to coma	Hypericum	Spotted St. John's-	4	FAC	0	El-	Perennial	Netion
hyppun ileopa	Hypericum punctatum Ilex opaca	ILEX OPACA	Wort American Holly	0	FAC FACU	0 1	Forb Shrub	Perennial	Native Adventive
	<u>.</u>	Impatiens	Spotted Touch-Me-	_					
impcap	Impatiens capensis	capensis	Not	3	FACW	-1	Forb	Annual	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	2	FACW	-1	Forb	Perennial	Native
		Juniperus virginiana							
junvir	Juniperus virginiana	crebra	Eastern Red-Cedar	0	FACU	1	Tree	Perennial	Native
loovin	Loomain vinginian	Leersia	White Cross	F	FACW	1	Cwnaa	Dononnini	Nativo
leevir	Leersia virginica	virginica LIGUSTRUM	White Grass	5	FACW	-1	Grass	Perennial	Native
ligvul	Ligustrum vulgare	VULGARE	European Privet	0	FACU	1	Shrub	Perennial	Adventive
linben	Lindera benzoin	Lindera benzoin	Northern Spicebush	5	FACW	-1	Shrub	Perennial	Native
		Liriodendron							
lirtul	Liriodendron tulipifera	tulipifera LONICERA X	Tuliptree Showy Fly	5	FACU	1	Tree	Perennial	Native
lonbel	Lonicera X bella	BELLA	Honeysuckle	0	FACU	1	Shrub	Perennial	Adventive
molalh	Molilotus albus	MELILOTUS	White Sweet Classes		LIDI		Earl	Pionnial	Advontive
melalb	Melilotus albus	MORUS ALBA	White Sweet-Clover	0	UPL	2	Forb	Biennial	Adventive
		VAR.		_		_	_		
moralb	Morus alba Muhlenbergia	TATARICA Muhlenbergia	White Mulberry	0	FACU	0	Tree	Perennial	Adventive
muhmex	mexicana	mexicana	Mexican Muhly	5	FACW	-1	Grass	Perennial	Native
muhsch	Muhlenbergia schreberi	Muhlenbergia schreberi	Nimblewill	0	FAC	0	Grass	Perennial	Native
munacıı	Schieben	Nyssa	THI IDICWIII		1 AC		Grass	i Ci Cilillai	INGLIVE
nyssyl	Nyssa sylvatica	sylvatica	Black Tupelo	7	FAC	0	Tree	Perennial	Native

oenbie	Oenothera biennis	Oenothera biennis	King's-Cureall	0	FACU	1	Forb	Biennial	Native
	Onoclea sensibilis	Onoclea sensibilis	Sensitive Fern	5	FACW	-1	Fern	Perennial	
onosen			Slender Yellow						Native
oxadil	Oxalis dillenii	Oxalis dillenii Senecio	Wood-Sorrel	0	FACU	1	Forb	Perennial	Native
senaur	Packera aurea	aureus	Golden Groundsel	8	FACW	-1	Forb	Perennial	Native
	Parthenocissus	Parthenocissus							
parqui	quinquefolia	quinquefolia POLYGONUM	Virginia-Creeper	4	FACU	1	Vine	Perennial	Native
perlon	Persicaria longiseta	CESPITOSUM LONGISETUM	Bristly Lady's- Thumb	0	FAC	0	Forb	Annual	Adventive
pervir	Persicaria virginiana	Polygonum virginianum	Jumpseed	4	FAC	0	Forb	Perennial	Native
phrausu	Phragmites australis ssp. australis	PHRAGMITES AUSTRALIS	Common Reed	0	FACW	-1	Grass	Perennial	Adventive
		Physalis	Clammy Ground-	2	LIDI	2		Danaanial	
phyhet picabi	Physalis heterophylla Picea abies	heterophylla PICEA ABIES	Cherry Norway Spruce	0	UPL UPL	2	Forb Tree	Perennial Perennial	Native Adventive
nilnum	Pilea pumila	Pilea pumila	Canadian Clearweed	2	FACW	-1	Forb	Annual	Native
pilpum pinstr	Pinus strobus	Pinus strobus	Eastern White Pine	10	FACU	1	Tree	Perennial	Native
		PLANTAGO							
plamaj	Plantago major	MAJOR Platanus	Great Plantain	0	FACU	0	Forb	Perennial	Adventive
plaocc	Platanus occidentalis	occidentalis	American Sycamore	5	FACW	-1	Tree	Perennial	Native
poapra	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FACU	0	Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
	·	Populus							
poptre	Populus tremuloides	tremuloides Prunella	Quaking Aspen	3	FAC	0	Tree	Perennial	Native
pruvull	Prunella vulgaris ssp. lanceolata	vulgaris Ianceolata	Common Selfheal	1	FAC	0	Forb	Perennial	Native
pruvun	lanceolata	Prunus	Common Semiear					refellillal	INGLIVE
pruser	Prunus serotina	serotina Pteridium	Black Cherry	0	FACU	1	Shrub	Perennial	Native
	Pteridium aquilinum	aquilinum	Northern Bracken						
pteaqu	var. latiusculum	latiusculum	Fern	5	FACU	1	Fern	Perennial	Native
quealb	Quercus alba	Quercus alba	Northern White Oak	5	FACU	1	Tree	Perennial	Native
querub	Quercus rubra	Quercus rubra Ribes	Northern Red Oak Missouri	5	FACU	1	Tree	Perennial	Native
ribmis	Ribes missouriense	missouriense	Gooseberry	2	UPL	2	Shrub	Perennial	Native
		ROBINIA PSEUDOACACI							
robpse	Robinia pseudoacacia	А	Black Locust	0	FACU	1	Tree	Perennial	Adventive
		ROSA							
rosmul	Rosa multiflora	MULTIFLORA Rubus	Rambler Rose	0	FACU	1	Shrub	Perennial	Adventive
rubocc	Rubus occidentalis	occidentalis	Black Raspberry	0	UPL	2	Shrub	Perennial	Native
rudtri	Rudbeckia triloba	Rudbeckia	Brown-Eyed-Susan	1	EACH	1	Eorb	Annual	Nativo
rudtri saldis	Salix discolor	triloba Salix discolor	Pussy Willow	3	FACU FACW	-1	Forb Shrub	Annual Perennial	Native Native
cacalh	Sassafras albidum	Sassafras albidum	Sassafras	3	FACU	1	Tree	Perennial	Nativo
sasalb	Sassarras arbitutiri	SCHEDONORU	Sassairas	<u> </u>	FACU	1	Hee	refellillal	Native
	Schedonorus	S ARUNDINACEU	Tall False Rye						
scharu	arundinaceus	S	Grass	0	FACU	1	Grass	Perennial	Adventive
schsco	Schizachyrium scoparium	Andropogon scoparius	Little False Bluestem	5	FACU	1	Grass	Perennial	Native
		SETARIA							
setvir			Green Foxtail	0		2	Cunco	Annual	Adventive
	Setaria viridis	VIRIDIS Solidago	Green roxean	<u> </u>	UPL	2	Grass	7 till taal	
solcae	Solidago caesia	Solidago caesia	Wreath Goldenrod	8	FACU	1	Forb	Perennial	Native
solcae solcan		Solidago							
solcan	Solidago caesia Solidago canadensis	Solidago caesia Solidago canadensis Solidago	Wreath Goldenrod Canadian Goldenrod	8	FACU FACU	1	Forb	Perennial Perennial	Native Native
solcan	Solidago caesia Solidago canadensis Solidago gigantea	Solidago caesia Solidago canadensis Solidago gigantea Solidago	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf	8 1 4	FACU FACU FACW	1 1 -1	Forb Forb	Perennial Perennial	Native Native Native
solcan	Solidago caesia Solidago canadensis	Solidago caesia Solidago canadensis Solidago gigantea	Wreath Goldenrod Canadian Goldenrod Late Goldenrod	8	FACU FACU	1	Forb	Perennial Perennial	Native Native
solcan	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf Goldenrod Wrinkle-Leaf Goldenrod	8 1 4	FACU FACU FACW	1 1 -1	Forb Forb	Perennial Perennial Perennial	Native Native Native
solcan solgig solpat	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Symphyotrichum lanceolatum	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf Goldenrod Wrinkle-Leaf	8 1 4 9	FACU FACU OBL	1 1 -1 -2	Forb Forb Forb	Perennial Perennial Perennial	Native Native Native
solcan solgig solpat solrug astsim	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Symphyotrichum lanceolatum Symphyotrichum	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Aster simplex Aster	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf Goldenrod Wrinkle-Leaf Goldenrod White Panicled American-Aster	8 1 4 9 6 3	FACU FACW OBL FAC FACW	1 1 -1 -2 0	Forb Forb Forb Forb Forb	Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Native
solcan solgig solpat solrug astsim astlat	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Symphyotrichum lanceolatum Symphyotrichum lateriflorum Symphyotrichum	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Aster simplex Aster lateriflorus	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf Goldenrod Wrinkle-Leaf Goldenrod White Panicled American-Aster Farewell-Summer White Oldfield	8 1 4 9 6 3	FACU FACU FACW OBL FAC FACW FAC	1 1 -1 -2 0 0	Forb Forb Forb Forb Forb Forb	Perennial Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Native Native Native
solcan solgig solpat solrug astsim	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Symphyotrichum lanceolatum Symphyotrichum lateriflorum	Solidago caesia Solidago canadensis Solidago gigantea Solidago patula Solidago rugosa Aster simplex Aster	Wreath Goldenrod Canadian Goldenrod Late Goldenrod Round-Leaf Goldenrod Wrinkle-Leaf Goldenrod White Panicled American-Aster Farewell-Summer	8 1 4 9 6 3	FACU FACW OBL FAC FACW	1 1 -1 -2 0	Forb Forb Forb Forb Forb	Perennial Perennial Perennial Perennial Perennial	Native Native Native Native Native Native

	Toxicodendron								
toxrad	radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	0	Vine	Perennial	Native
trifla	Tridens flavus	TRIODIA FLAVA	Purple-Top	0	UPL	2	Grass	Perennial	Adventive
tripra	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	1	Forb	Perennial	Adventive
trirep	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	1	Forb	Perennial	Adventive
ulmame	Ulmus americana	Ulmus americana	American Elm	3	FACW	-1	Tree	Perennial	Native
vertha	Verbascum thapsus	VERBASCUM THAPSUS	Woolly Mullein	0	UPL	2	Forb	Biennial	Adventive
verurt	Verbena urticifolia	Verbena urticifolia var. leiocarpa	White Vervain	2	FAC	0	Forb	Perennial	Native
vibden	Viburnum dentatum	VIBURNUM DENTATUM VAR. SCABRELLUM	Southern Arrow- Wood	0	FAC	0	Shrub	Perennial	Adventive
vinmaj	Vinca major	VINCA MAJOR	Large Periwinkle	0	UPL	2	Shrub	Perennial	Adventive
vinmin	Vinca minor	VINCA MINOR	Common Periwinkle	0	UPL	2	Shrub	Perennial	Adventive
viosor	Viola sororia	Viola priceana	Hooded Blue Violet	3	FAC	0	Forb	Perennial	Native
vitaes	Vitis aestivalis		Summer Grape	5	FACU	1	Vine	Perennial	Native
vitrip	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FAC	-1	Vine	Perennial	Native
wisfru	Wisteria frutescens	WISTERIA MACROSTACH YA	American Wisteria	0	FACW	-1	Vine	Perennial	Adventive

6. Dry Prairie

	Marquette Greenway Project - Dry prairie. Includes sand barrens, old field,
SITE:	and dry prairie along Calumet Trail
LOCALE:	Porter Co
BY:	Lydia Miramontes Loyd
NOTES:	June - October, 2022

CONSERVATISM-			
BASED			ADDITIONAL
METRICS			METRICS
MEAN C		SPECIES	
(NATIVE		RICHNESS	
SPECIES)	3.97	(ALL)	50
	3.37	SPECIES	30
MEAN C		RICHNESS	
(ALL SPECIES)	2.54	(NATIVE)	32
MEAN C		<u>`</u>	
(NATIVE TREES)	5.00	% NON-NATIVE	0.36
MEAN C			
(NATIVE		WET INDICATOR	
SHRUBS)	1.50	(ALL)	0.78
MEAN C			
(NATIVE		WET INDICATOR	
HERBACEOUS)	3.91	(NATIVE)	0.59
FQAI			
(NATIVE		% HYDROPHYTE	
SPECIES)	22.45	(MIDWEST)	0.26
FQAI		% NATIVE	
(ALL SPECIES)	17.96	PERENNIAL	0.52
ADJUSTED FQAI	31.75	% NATIVE ANNUA	0.06
% C VALUE 0	0.46	% ANNUAL	0.06
% C VALUE 1-3	0.14	% PERENNIAL	0.80
% C VALUE 4-6	0.30		
% C VALUE 7-10	0.10		

SPECIES	SPECIES NAME (NWPL/	SPECIES	COMMON		NC-NE WET	WET INDICATO		DURATIO	
ACRONYM	MOHLENBROCK)	(SYNONYM)	NAME	C VALUE	INDICATOR	R	HABIT	N	NATIVITY
achmil	Achillea millefolium		Common Yarrow	0	FACU	1	Forb	Perennial	Adventive
allpet	Alliaria petiolata	ALLIARIA PETIOLATA	Garlic-Mustard	0	FACU	0	Forb	Biennial	Adventive
ampbra	Amphicarpaea bracteata	Amphicarpae a bracteata	American Hog- Peanut	5	FAC	0	Vine	Annual	Native
apiame	Apios americana	Apios americana	Groundnut	5	FACW	-1	Forb	Perennial	Native
аріатте	Apocynum	Apocynum	Groundiat	<u> </u>	TACW	-1	1010	refermal	ivative
apocan	cannabinum	sibiricum	Indian-Hemp	2	FAC	0	Forb	Perennial	Native
aritub	Aristida tuberculosa	Aristida tuberculosa	Beach Three-Awn	9	UPL	2	Grass	Annual	Native
ascsyr	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	UPL	1	Forb	Perennial	Native
calcan	Calamagrostis canadensis	Calamagrosti s canadensis	Bluejoint	6	OBL	-2	Grass	Perennial	Native
	Celastrus	CELASTRUS ORBICULAT		-		_			Adventiv
celorb	orbiculatus	US	Asian Bittersweet	0	UPL	2	Vine	Perennial	e
		Circaea	Broad-Leaf						
		lutetiana	Enchanter's-						
circan	Circaea canadensis	canadensis	Nightshade	3	FACU	1	Forb	Perennial	Native
		Clematis	Devil's-Darning-						
clevir	Clematis virginiana	virginiana	Needles	4	FAC	0	Vine	Perennial	Native
		DAUCUS							
daucar	Daucus carota	CAROTA	Queen Anne's Lace	0	UPL	2	Forb	Biennial	Adventive
		EUPHORBIA							
eupesu	Euphorbia esula	VIRGATA	Leafy Spurge	0	UPL	2	Forb	Perennial	Adventive
	Eutrochium	Eupatorium	Spotted	_			l <u>.</u> .		
eupmac	maculatum	maculatum	Trumpetweed	5	OBL	-2	Forb	Perennial	Native
glehed	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	1	Forb	Perennial	Adventive
	L	Helianthus							
l	Helianthus	grosseserratu	Saw-Tooth				l <u>.</u> .		
helgro	grosseserratus	S	Sunflower	4	FACW	-1	Forb	Perennial	Native
		Juniperus							
junvir	Juniperus virginiana	virginiana crebra	Eastern Red-Cedar	0	FACU	1	Tree	Perennial	Native
		Lactuca	Canadian Blue						
laccan	Lactuca canadensis	canadensis	Lettuce	1	FACU	1	Forb	Biennial	Native
lacser	Lactuca serriola	LACTUCA SERRIOLA	Prickly Lettuce	0	FACU	1	Forb	Biennial	Adventive

r		1	I= I						
l.		Lespedeza	Round-Head Bush-				l ₋ .	l <u>.</u>	
lescap	Lespedeza capitata	capitata	Clover	4	FACU	1	Forb	Perennial	Native
liaasp	Liatris aspera	Liatris aspera	Rough Gayfeather	8	UPL	2	Forb	Perennial	Native
lytsal	Luthwine colionais	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	-2	Forb	Perennial	Advantiva
TytSai	Lythrum salicaria	MELILOTUS	ruipie Loosestiile	U	OBL	-2	FOID	refellillal	Adventive
melalb	Melilotus albus	ALBA	White Sweet-Clover	0	UPL	2	Forb	Biennial	Adventive
meiaib	Muhlenbergia	Muhlenbergia	Winte Sweet Clover	•	OLE		1010	Dicinia	Adventive
muhmex	mexicana	mexicana	Mexican Muhly	5	FACW	-1	Grass	Perennial	Native
		Oenothera	, ,	-	-				
oenbie	Oenothera biennis	biennis	King's-Cureall	0	FACU	1	Forb	Biennial	Native
		Oenothera	Sand Evening-						
oencle	Oenothera clelandii	clelandii	Primrose	5	UPL	2	Forb	Biennial	Native
			Slender Yellow						
oxadil	Oxalis dillenii	Oxalis dillenii	Wood-Sorrel	0	FACU	1	Forb	Perennial	Native
		Parthenociss							
	Parthenocissus	us					,,,	l <u>.</u>	l l
parqui	quinquefolia	quinquefolia	Virginia-Creeper	4	FACU	1	Vine	Perennial	Native
picabi	Picea abies	PICEA ABIES PICEA	Norway Spruce	0	UPL	2	Tree	Perennial	Adventive
picgla	Picea glauca	GLAUCA	White Spruce	0	FACU	1	Tree	Perennial	Adventive
picgia	Ficea giauca	PICEA	Colorado Blue	U	FACU	1	nee	refellillal	Adventive
picpun	Picea pungens	PUNGENS	Spruce	0	UPL	2	Tree	Perennial	Adventive
pinstr	Pinus strobus	Pinus strobus		10	FACU	1	Tree	Perennial	Native
pilioti	i mas strobas	PINUS	Zastern Winte Fine			_	1	. c. c	- rucive
pinsyl	Pinus sylvestris	SYLVESTRIS	Scots Pine	0	UPL	2	Tree	Perennial	Adventive
,	Pseudognaphalium	Gnaphalium							
gnamac	macounii	macounii	Clammy Cudweed	5	UPL	2	Forb	Annual	Native
		Quercus							
quevel	Quercus velutina	velutina	Black Oak	5	UPL	2	Tree	Perennial	Native
		Rubus							
	Rubus	alleghenien	Allegheny			l	1		l
		1.		_					
ruball	allegheniensis	sis	Blackberry	3	FACU	1	Shrub	Perennial	Native
	Rubus idaeus ssp.	RUBUS	Blackberry Common Red						
ruball rubida		RUBUS IDAEUS	Blackberry	0	FACU FAC	1	Shrub Shrub	Perennial Perennial	Native Adventive
rubida	Rubus idaeus ssp. idaeus	RUBUS IDAEUS Rubus	Blackberry Common Red Raspberry	0	FAC	1	Shrub	Perennial	Adventive
	Rubus idaeus ssp.	RUBUS IDAEUS Rubus occidentalis	Blackberry Common Red						
rubida	Rubus idaeus ssp. idaeus	RUBUS IDAEUS Rubus	Blackberry Common Red Raspberry	0	FAC	1	Shrub	Perennial	Adventive
rubida	Rubus idaeus ssp. idaeus	RUBUS IDAEUS Rubus occidentalis Rudbeckia	Blackberry Common Red Raspberry	0	FAC	1	Shrub	Perennial	Adventive
rubida rubocc	Rubus idaeus ssp. idaeus Rubus occidentalis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX	Blackberry Common Red Raspberry Black Raspberry	0	FAC UPL	1 2 1	Shrub	Perennial Perennial	Adventive Native
rubida rubocc	Rubus idaeus ssp. idaeus Rubus occidentalis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS	Blackberry Common Red Raspberry Black Raspberry	0	FAC UPL	2	Shrub	Perennial Perennial	Adventive Native
rubida rubocc rudhir	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan	0 0	FAC UPL FACU	1 2 1	Shrub Shrub Forb	Perennial Perennial	Adventive Native Native
rubida rubocc rudhir	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock	0 0	FAC UPL FACU	1 2 1	Shrub Shrub Forb	Perennial Perennial	Adventive Native Native
rubida rubocc rudhir rumcri	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye	0 0 1 0	FAC UPL FACU FAC	1 2 1 0	Shrub Shrub Forb	Perennial Perennial Perennial	Adventive Native Native Adventive
rubida rubocc rudhir	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass	0 0	FAC UPL FACU	1 2 1	Shrub Shrub Forb	Perennial Perennial	Adventive Native Native
rubida rubocc rudhir rumcri scharu	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False	0 0 1 0	FACU FACU FACU	1 2 1 0	Shrub Shrub Forb Grass	Perennial Perennial Perennial Perennial	Native Native Adventive Adventive
rubida rubocc rudhir rumcri	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem	0 0 1 0	FAC UPL FACU FAC	1 2 1 0	Shrub Shrub Forb	Perennial Perennial Perennial	Adventive Native Native Adventive
rubida rubocc rudhir rumcri scharu schsco	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian	0 0 1 0	FACU FACU FACU FACU FACU	1 2 1 0 1 1 1	Shrub Shrub Forb Forb Grass Grass	Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Native Adventive Adventive Native
rubida rubocc rudhir rumcri scharu	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem	0 0 1 0	FACU FACU FACU	1 2 1 0	Shrub Shrub Forb Grass	Perennial Perennial Perennial Perennial	Native Native Adventive Adventive
rubida rubocc rudhir rumcri scharu schsco	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod	0 0 1 0	FACU FACU FACU FACU FACU	1 2 1 0 1 1 1	Shrub Shrub Forb Forb Grass Grass	Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Native Adventive Adventive Native
rubida rubocc rudhir rumcri scharu schsco solcan	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium	RUBUS IDAEUS Rubus Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian	0 0 1 0 0 5	FACU FACU FACU FACU FACU FACU	1 2 1 0 1 1 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb	Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Native Adventive Adventive Native Native
rubida rubocc rudhir rumcri scharu schsco solcan	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago nemoralis	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod	0 0 1 0 0 5	FACU FACU FACU FACU FACU FACU	1 2 1 0 1 1 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb	Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Native Adventive Adventive Native Native
rubida rubocc rudhir rumcri scharu schsco solcan solnem	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod	0 0 1 0 0 5 1 3	FACU FACU FACU FACU FACU FACU UPL	1 2 1 0 1 1 1 1 1 2	Shrub Shrub Forb Forb Grass Grass Forb	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Adventive Adventive Native Native Native
rubida rubocc rudhir rumcri scharu schsco solcan solnem	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis	RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago nemoralis SONCHUS ARVENSIS ASTER ASTER RUBUS IDAEUS ARVENSIS ASTER RUBUS IDAEUS IDA	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle	0 0 1 0 0 5 1	FACU FACU FACU FACU FACU FACU UPL	1 2 1 0 1 1 1 1 1 2	Shrub Shrub Forb Forb Grass Grass Forb	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Adventive Adventive Native Native Native
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum praealtum	RUBUS IDAEUS Rubus Occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS ARVENSIS Aster praealtus TARAXACUM	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster	0 0 1 0 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 1 1 1 2 1 1 -1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Native Native Adventive
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum	RUBUS IDAEUS Rubus Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS ARVENSIS Aster praealtus TARAXACUM OFFICINALE	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf	0 0 1 0 0 5 1 3	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 0 1 1 1 1 2 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb Forb	Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial Perennial	Adventive Native Adventive Adventive Native Native Native Adventive
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum praealtum Taraxacum officinale	RUBUS IDAEUS Rubus Rubus Rubus Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago remoralis SONCHUS ARVENSIS Aster praealtus TARAXACUM OFFICINALE Dryopteris	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster	0 0 1 0 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 1 1 1 2 1 1 -1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Native Native Adventive
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra taroff	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum praealtum Taraxacum officinale Thelypteris palustris	RUBUS IDAEUS Rubus Rubus Rubus Rubus Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago nemoralis SONCHUS ARVENSIS ASTER Praealtus TARAXACUM OFFICINALE Dryopteris thelypteris	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster Common Dandelion	0 0 1 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Adventive Adventive Adventive Adventive
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum praealtum Taraxacum officinale	RUBUS IDAEUS RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US ANdropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS ARVENSIS ASter praealtus TARAXACUM OFFICINALE Dryopteris pubescens	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster	0 0 1 0 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 1 1 1 2 1 1 -1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Native Native Adventive
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra taroff drythe	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Sonchus arvensis Symphyotrichum praealtum Taraxacum officinale Thelypteris palustris var. pubescens	RUBUS IDAEUS Rubus Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US Andropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS ARVENSIS Aster praealtus TARAXACUM OFFICINALE Dryopteris thelypteris	Blackberry Common Red Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster Common Dandelion Eastern Marsh Fern	0 0 1 0 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 0 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Adventive Adventive Native Adventive Native
rubida rubocc rudhir rumcri scharu schsco solcan solnem sonarv astpra taroff	Rubus idaeus ssp. idaeus Rubus occidentalis Rudbeckia hirta Rumex crispus Schedonorus arundinaceus Schizachyrium scoparium Solidago canadensis Solidago nemoralis Sonchus arvensis Symphyotrichum praealtum Taraxacum officinale Thelypteris palustris	RUBUS IDAEUS RUBUS IDAEUS Rubus occidentalis Rudbeckia hirta var. pulcherrima RUMEX CRISPUS SCHEDONOR US ARUNDINACE US ANdropogon scoparius Solidago canadensis Solidago nemoralis SONCHUS ARVENSIS ASter praealtus TARAXACUM OFFICINALE Dryopteris pubescens	Blackberry Common Red Raspberry Black Raspberry Black Raspberry Black-Eyed-Susan Curly Dock Tall False Rye Grass Little False Bluestem Canadian Goldenrod Gray Goldenrod Field Sow-Thistle Willow-Leaf American-Aster Common Dandelion Eastern Marsh Fern Summer Grape	0 0 1 0 5 1 3 0 7	FACU FACU FACU FACU FACU FACU FACU FACU	1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Shrub Shrub Forb Forb Grass Grass Forb Forb Forb	Perennial	Adventive Native Adventive Adventive Native Native Native Adventive Adventive Adventive Adventive

APPENDIX C NATURAL HERITAGE DATABASE RESULTS

Soil Solutions, Inc. Page 30



Division of Nature Preserves 402 W. Washington St., Rm W267 Indianapolis, IN 46204-2739

November 29, 2022

Lydia Miramontes-Loyd Soil Solutions, Inc. 360 Indiana Avenue, Suite B Valparaiso, IN 46383

Dear Lydia Miramontes-Loyd:

I am responding to your request for information on the threatened or endangered (T&E) species, high quality natural communities, and natural areas for the Marquette Greenway Trail Project - Calumet Segment located within Porter County, Indiana. The Indiana Natural Heritage Data Center has been checked and included you will find a geospatial with information on the tracked species documented within the requested project area. By accepting this spatial data from us you agree to the terms and conditions included as an enclosure of this letter.

The project site overlaps with the Indiana Dunes National Park which is a property that is owned and managed by the U.S. National Park Service. Due to the proximity of the project site to the protected natural area, it is expected that all precautions will be taken to not impact the systems and features protected therein. For more information concerning this property and further coordination prior to any ground disturbance within the Park, contact U.S. National Park Service property management.

To protect any arachnid or insect occurrences that are documented from within or adjacent to the projected impact zone footprint, it is preferred that project work occur outside of peak wildlife nesting season (May, June, and July) and/or that proper best management practices (BMPs) are utilized to reduce impact to the rare invertebrate species. It is expected that all precautions will be taken to not to negatively impact the systems and features containing appropriate habitat immediately adjacent to the project sites. The remaining rare arachnid and insect occurrences do not occur precisely at the project sites. Therefore, if project activities are limited to only within the proposed project right-of-way, no impacts are expected on these occurrences.

For any high-quality natural communities located within or adjacent to the projected impact zone footprint, it is expected that all precautions will be taken to not impact the systems and features protected therein. BMPs for soil erosion and runoff should be utilized during the project to minimize direct impacts to any habitat occurrences. Proper dust control measures should be implemented. Otherwise, it appears that if project activities are limited to only within the proposed project right-of-way, no impacts are expected on the remaining high-quality natural community occurrences.

There are multiple T&E vascular plant occurrences, including the state endangered *Schoenoplectiella hallii*, that are documented from within the projected impact zone footprint. Any development project activities,

specifically the paving of the new trail, within the provided project boundaries would degrade or potentially destroy these vascular plant occurrences. Surveys should be conducted by qualified personnel for the species prior to work zones being occupied or equipment movement within. If any of the rare plant species are identified in an area of permanent impact, it is recommended that impacted individuals be relocated into appropriate, protected habitat after consultation with Indiana DNR Division of Nature Preserves and U.S. National Park Service. For additional project coordination please contact DNR Regional Ecologist, Derek Nimetz dnimetz@dnr.in.gov. The remaining T&E vascular plant occurrence are historical or do not occur precisely at the project site. Therefore, if project activities are limited to only within the proposed project area and no additional individuals are observed in appropriate habitat within the project area, no impacts are expected on these occurrences.

If you need a review of the impacts to the animal species mentioned or a general environmental review, you can submit the project information to Christie Stanifer, DNR Environmental Coordinator, at environmentalreview@dnr.in.gov (preferred), or send to the street address below. For more help or guidance contact Christie Stanifer at estanifer@dnr.in.gov.

Department of Natural Resources Environmental Review Division of Fish and Wildlife 402 W. Washington Street, Room W273 Indianapolis, IN 46204

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service 620 South Walker St. Bloomington, Indiana 47403-2121 812-334-4261

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)233-2558 if you have any questions or need additional information.

Sincerely,

Taylor Davis Astle

Indiana Natural Heritage Data Center

Saylor D. Astle

Enclosure: Terms and Conditions

shapefile datasheet

INDIANA HERITAGE DATA WITHIN 0.5 MILE OF:

Marquette Greenway Trail - Calumet Segment, Porter County

Sci. Name	Com. Name	State Fed.	Date	Site
Amphibian				
Ambystoma laterale	blue-spotted salamander	SSC	1987	
Ambystoma laterale	blue-spotted salamander	SSC	1987	
Ambystoma laterale	blue-spotted salamander	SSC	2005	INDIANA DUNES STATE PARK
Hemidactylium scutatum	four-toed salamander	SSC	1985	
Hemidactylium scutatum	four-toed salamander	SSC	2005	
Hemidactylium scutatum	four-toed salamander	SSC	2020	GREAT MARSH INDNP
Arachnida				
Scironis tarsalis	Tarsal sheet-web weaver	SE	1977	TREMONT
Bird				
Buteo platypterus	Broad-winged Hawk	SSC	1979	
Circus hudsonius	Northern Harrier	SE	1930	
Cistothorus palustris	marsh wren	SE	1994	KEMIL BEACH
Cistothorus palustris	marsh wren	SE	2021	INDIANA DUNES STATE PARK
Cistothorus stellaris	sedge wren	SE	2000	
Dendroica virens	Black-throated Green Warbler		2002	FURNESSVILLE
Dendroica virens	Black-throated Green Warbler		2000	
Dendroica virens	Black-throated Green Warbler		2000	BEVERLY SHORES
Empidonax alnorum	Alder Flycatcher		1998	BEVERLY SHORES
Gallinula galeata	Common gallinule	SE	2021	GREAT MARSH - IDNP
Ixobrychus exilis	Least Bittern	SE	2000	
Ixobrychus exilis	Least Bittern	SE	2021	GREAT MARSH

Fed: E = Federal endangered; T = Federal threatened; C = Federal candidate species

 $State: SE = State \ endangered; ST = State \ threatened; SR = State \ rare; SSC = State \ species \ of \ special \ concern; SG = State \ significant; no \ rank - not \ ranked \ but \ tracked \ to \ monitor \ status$

Sci. Name	Com. Name	State	Fed.	Date	Site
Ixobrychus exilis	Least Bittern	SE		1986	
Ixobrychus exilis	Least Bittern	SE		1985	
Lanius ludovicianus	loggerhead shrike	SE		1916	
Lanius ludovicianus	loggerhead shrike	SE		1915	
Mniotilta varia	Black-and-white Warbler	SSC		1992	
Nycticorax nycticorax	Black-crowned Night-heron	SE		2020	GREAT MARSH - IDNP
Rallus elegans	King Rail	SE		1978	
Rallus elegans	King Rail	SE		1941	
Rallus limicola	Virginia Rail	SE		1994	KEMIL BEACH
Rallus limicola	Virginia Rail	SE		2021	BEVERLY DRIVE
Rallus limicola	Virginia Rail	SE		1997	
Setophaga cerulea	Cerulean Warbler	SE		2008	INDIANA DUNES STATE PARK
Setophaga citrina	Hooded Warbler	SSC		1980	BEVERLY SHORES
Setophaga citrina	Hooded Warbler	SSC		2002	FURNESSVILLE WOODS
Setophaga citrina	Hooded Warbler	SSC		2000	FURNESSVILLE
Setophaga citrina	Hooded Warbler	SSC		1989	
Setophaga citrina	Hooded Warbler	SSC		1979	BEVERLY SHORES
Vermivora chrysoptera	Golden-winged Warbler	SE	C	1980	
Vermivora chrysoptera	Golden-winged Warbler	SE	С	1984	
Wilsonia canadensis	Canada Warbler			2002	
Wilsonia canadensis	Canada Warbler			1991	KEISER WOODS
Wilsonia canadensis	Canada Warbler			1990	

High Quality Natural Community

Wetland - marsh SG 1980

Fed: E = Federal endangered; T = Federal threatened; C = Federal candidate species

State: SE = State endangered; ST= State threatened; SR = State rare; SSC = State species of special concern; SG = State significant; no rank - not ranked but tracked to monitor status

Sci. Name	Com. Name	State	Fed.	Date	Site
Wetland - swamp shrub	Shrub Swamp	SG		1980	
Insect Coleoptera					
Nicrophorus americanus	American Burying Beetle	SX	Е	1934	
Insect Lepidoptera					
Callophrys irus	Frosted Elfin	SE	С	1959	INDIANA DUNES NATIONAL PARK
Lycaeides melissa samuelis	Karner Blue	SE	Е	1977	DUNES SITE
Poanes viator viator	Big Broad-winged Skipper	ST		1977	
Mammal					
Mustela nivalis	Least Weasel	SSC		2020	IDNL - KEISER UNIT
Taxidea taxus	American Badger	SSC		1991	
Reptile					
Clemmys guttata	spotted turtle	SE	С	2021	INDIANA DUNES NATIONAL LAKESHORE - NIPSCO RIGHT-OF-WAY
Clemmys guttata	spotted turtle	SE	С	2018	INDIANA DUNES NATIONAL PARK
Clemmys guttata	spotted turtle	SE	С	1929	
Clemmys guttata	spotted turtle	SE	С	1983	OLD CHICAGO ROAD SITE
Clonophis kirtlandii	Kirtland's snake	SE		1948	
Emydoidea blandingii	Blanding's turtle	SE	С	1986	
Emydoidea blandingii	Blanding's turtle	SE	С	2010	IDNP - KEISER UNIT
Opheodrys vernalis	smooth green snake	SE		1945	
Sistrurus catenatus	eastern massasauga	SE	T	1987	
Sistrurus catenatus	eastern massasauga	SE	T	2002	
Sistrurus catenatus	eastern massasauga	SE	T	1986	
Sistrurus catenatus	eastern massasauga	SE	T	1950	
Terrapene carolina	woodland box turtle	SSC		2021	NICTD SOUTH SHORE LINE

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Sci. Name	Com. Name	State Fed.	Date	Site
carolina				
Thamnophis proximus proximus	western ribbon snake	SSC	1987	
Thamnophis proximus proximus	western ribbon snake	SSC	0	
Vascular Plant				
Actaea rubra ssp. rubra	red baneberry	ST	1935	
Aralia hispida	bristly sarsaparilla	SE	1930	
Arctostaphylos uva-ursi	bearberry	ST	1934	
Arctostaphylos uva-ursi	bearberry	ST	1927	
Aristida tuberculosa	seabeach needlegrass	ST	1988	
Botrychium matricariifolium	chamomile grape-fern	ST	2004	DUNES STATE PARK
Botrychium matricariifolium	chamomile grape-fern	ST	1992	SURVEY AREA E
Carex atherodes	awned sedge	SE	1934	
Carex flava	yellow sedge	ST	1988	
Carex folliculata	long sedge	ST	1989	
Carex folliculata	long sedge	ST	2021	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	2014	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1994	NIPSCO ROW
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	1999	CALUMET BIKE TRAIL
Carex folliculata	long sedge	ST	2021	NIPSCO ROW ALONG CALULMENT TRAIL

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Sci. Name	Com. Name	State	Fed.	Date	Site
Carex folliculata	long sedge	ST		1979	SURVEY AREA C
Carex folliculata	long sedge	ST		1979	
Carex folliculata	long sedge	ST		1929	
Carex folliculata	long sedge	ST		1924	
Carex folliculata	long sedge	ST		1979	INDIANA DUNES NATIONAL PARK
Carex leptonervia	finely-nerved sedge	SE		1986	
Carex leptonervia	finely-nerved sedge	SE		1989	
Carex leptonervia	finely-nerved sedge	SE		1986	CALUMET BIKE TRAIL
Carex seorsa	weak stellate sedge	ST		1979	
Carex seorsa	weak stellate sedge	ST		1979	
Carex seorsa	weak stellate sedge	ST		1979	
Carex seorsa	weak stellate sedge	ST		1930	
Chrysosplenium americanum	American golden-saxifrage	ST		1990	
Chrysosplenium americanum	American golden-saxifrage	ST		2014	IDNL KEISER UNIT, DUNES NATURE PRESERVE
Chrysosplenium americanum	American golden-saxifrage	ST		1992	INDIANA DUNES NATIONAL PARK
Circaea alpina	small enchanter's nightshade	SX		1925	
Clintonia borealis	Clinton's lily	SE		1929	
Cornus rugosa	roundleaf dogwood	ST		1923	
Cornus rugosa	roundleaf dogwood	ST		1924	
Cypripedium candidum	small white lady's-slipper	ST		1939	
Dichanthelium boreale	northern witchgrass	ST		1980	
Dichanthelium lucidum	shining panic-grass	SE		1989	INDIANA DUNES NATIONAL PARK
Dichanthelium lucidum	shining panic-grass	SE		1987	INDIANA DUNES NATIONAL PARK

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Sci. Name	Com. Name	State	Fed.	Date	Site
Dichanthelium mattamuskeetense	panic-grass	SX		1924	
Diphasiastrum tristachyum	deep-root clubmoss	ST		1991	FURNESSVILLE
Diphasiastrum tristachyum	deep-root clubmoss	ST		1985	
Dryopteris clintoniana	Clinton's woodfern	SE		1935	
Eleocharis geniculata	capitate spike-rush	ST		2019	CALUMET BIKE TRAIL
Eleocharis melanocarpa	black-fruited spike-rush	ST		2017	IDNL-VISITOR CENTER UNIT
Epigaea repens	trailing arbutus	ST		1980	FURNESSVILLE
Eurybia furcata	forked aster	ST		1931	
Hudsonia tomentosa	sand-heather	ST		1979	INDIANA DUNES NATIONAL PARK
Juglans cinerea	butternut	ST		1992	DUNE PARK STATION
Juncus pelocarpus	brown-fruited rush	SE		1917	
Juncus scirpoides	scirpus-like rush	ST		1959	
Lathyrus japonicus	beach peavine	SE		1930	
Lathyrus ochroleucus	pale vetchling peavine	SE		1916	
Lycopodiella inundata	northern bog clubmoss	SE		1984	COWLES BOG (DUNE ACRES) E
Lycopodiella inundata	northern bog clubmoss	SE		1995	KEISER F
Lycopodiella inundata	northern bog clubmoss	SE		1987	
Lycopodiella subappressa	northern appressed bog clubmoss	SE		1995	IDNP - AREA F
Milium effusum	tall millet-grass	ST		1989	
Milium effusum	tall millet-grass	ST		2020	INDIANA DUNES STATE PARK
Milium effusum	tall millet-grass	ST		1923	
Myosotis laxa	smaller forget-me-not	ST		2021	CALUMET BIKE TRAIL
Myosotis laxa	smaller forget-me-not	ST		1935	

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Sci. Name	Com. Name	State	Fed.	Date	Site
Myosotis laxa	smaller forget-me-not	ST		1922	
Orobanche fasciculata	clustered broomrape	SE		1929	
Pinus banksiana	jack pine	ST		1980	PITCHER PRAIRIE
Pinus strobus	eastern white pine	ST		0	
Piptatheropsis pungens	slender mountain-ricegrass	SE		1929	
Piptochaetium avenaceum	blackseed needlegrass	ST		1989	
Piptochaetium avenaceum	blackseed needlegrass	ST		1989	
Platanthera hookeri	Hooker's orchid	SX		1979	
Platanthera psycodes	small purple-fringe orchid	ST		1990	
Platanthera psycodes	small purple-fringe orchid	ST		1990	
Poa paludigena	bog bluegrass	ST		1988	
Polygala paucifolia	gay-wing milkwort	SE		1929	
Polygonum articulatum	eastern jointweed	ST		1980	INDIANA DUNES NATIONAL PARK
Polygonum articulatum	eastern jointweed	ST		1933	
Populus balsamifera	balsam poplar	SE		1919	
Potamogeton pulcher	spotted pondweed	ST		2017	DUNES NATURE PRESERVE
Potentilla anserina	silverweed	ST		2020	ST. CLAIR AVE
Potentilla anserina	silverweed	ST		1989	
Prunus pensylvanica	fire cherry	ST		1994	
Prunus pensylvanica	fire cherry	ST		1980	
Prunus pensylvanica	fire cherry	ST		1919	
Pyrola americana	American wintergreen	ST		1979	PITCHER PRAIRIE
Pyrola americana	American wintergreen	ST		1986	

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Sci. Name	Com. Name	State	Fed.	Date	Site
Rhexia mariana var. mariana	Maryland meadow beauty	ST		2014	NIPSCO ROW
Sceptridium multifidum	leathery grape-fern	SX		2007	VISITOR CENTER AREA
Sceptridium multifidum	leathery grape-fern	SX		2007	KEISER C
Sceptridium multifidum	leathery grape-fern	SX		1935	
Schoenoplectiella hallii	Hall's bulrush	SE		2017	FURNESSVILLE
Schoenoplectiella purshiana	weakstalk bulrush	ST		2019	CALUMET BIKE TRAIL
Schoenoplectiella smithii	Smith's Bulrush	ST		2017	VISITOR CENTER UNIT IDNL
Scirpus expansus	bulrush	SE		1999	NIPSCO ROW
Scirpus expansus	bulrush	SE		1995	NIPSCO RIGHT-OF-WAY
Scirpus expansus	bulrush	SE		2009	CALUMET TRAIL
Scleria reticularis	reticulated nutrush	ST		1917	
Sisyrinchium montanum	strict blue-eyed-grass	SE		1935	
Sparganium androcladum	branching bur-reed	ST		1953	
Symphyotrichum boreale	rushlike aster	ST		1926	
Thalictrum pubescens	tall meadowrue	ST		1924	
Trillium cernuum var. macranthum	nodding trillium	SE		2021	KEISER UNIT OF INDIANA DUNES NATIONAL LAKESHORE
Viola primulifolia	primrose-leaf violet	ST		2002	CALUMET BIKE TRAIL
Viola primulifolia	primrose-leaf violet	ST		2008	KEISER B
Viola primulifolia	primrose-leaf violet	ST		1930	
Viola primulifolia	primrose-leaf violet	ST		1929	

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