

**Summary of Monitoring and Evaluation of Coastal Habitats for  
Potential Restoration Activities: Lake Huron 2002-2003**



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## ABSTRACT

MNFI's field activities for the Lake Huron Coastal Restoration project focused on sampling swamp forests along three portions of Lake Huron, the Les Cheneaux Islands, the Alpena area, and Saginaw Bay, with low levels of sampling in the emergent marsh and wet meadow. Surveys were also conducted for rare plant species in all of the sampling sites.

Results of the swamp forest sampling were summarized in a report by Tepley (Tepley et al. 2003). Marsh sampling allowed the quality of 24 wetlands to be compared using the Floristic Quality Index (FQI) (Herman et al. 1996). Saginaw Bay sites were more degraded than those of either the Alpena or Les Cheneaux areas, with the greatest level of degradation found in the wet meadow zone. In contrast, the floristic diversity of the wet meadow zone was higher than that of the emergent marsh zone for the Alpena and Les Cheneaux wetlands. The FQI scores accurately reflected conditions encountered during field surveys, with the exception of the Search Bay site, which appears to be degraded on the basis of the FQI scores, but the site's low diversity is actually the result of higher wave-energy conditions in the coastal marsh.

Another major activity of the project was digitizing Lake Huron coastal *element occurrences* in the MNFI database, which include rare plants, rare animals, and high-quality examples of natural communities. The project focused on element occurrence records near to the Great Lakes shoreline, but was matched with other projects that allowed records from the entire Saginaw Bay region, as well as entire counties bordering Lake Huron to be updated and digitized. Within a mile of Lake Huron, a total of 368 records were digitized, including 120 rare animal locations, 170 rare plant locations, 59 high quality natural communities, and 19 other special occurrences. The digitizing resulted in much more accurate portail of element occurrences in the coastal area, which will result in a more effective environmental review and permitting process.

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## INTRODUCTION

This project focused on three major activities along the Lake Huron shoreline:

- (1) Sampling of swamp forests, a plant community that has had little plant sampling in the past.
- (2) Sampling the emergent marsh and wet meadow zones of the coastal marshes, to document the flora of these zones and allow quality of sites to be compared. Surveys for rare plant species was conducted along with the general plant sampling.
- (3) Updating and GIS mapping of Element Occurrences within MNFI's database.

**Swamp Forest Sampling.** The first activity, sampling of swamp forests was summarized in the report "Swamp Forests of the Lake Huron Shoreline" (Tepley et al. 2003). The present report will not address materials discussed in the swamp forest report.

**Great Lakes Marsh Sampling.** Sampling of the Great Lakes marsh was conducted to provide baseline information on the condition of the Great Lakes marsh in three sections of Lake Huron, where marshes are common. Vegetation was sampled in three marsh zones, the wet meadow, emergent, and submergent marsh. Coastal sampling also included searches for rare plant species.

**GIS Mapping of Element Occurrences.** Another important aspect of the project was the review of all Element Occurrences found in the Michigan Natural Features Inventory (MNFI) database along the Lake Huron shoreline. Any unmapped Element Occurrences were reviewed and mapped. An important component of this project has included preparing field information for use within MNFI's Geographic Information System (GIS) based data platform. A GIS data system allows the known spatial extent of an occurrence to be represented. This spatially represented data is far more useful for resource managers, land-use planners, scientists, and the general public than a traditional natural heritage database. **Figure 1** shows a selected set of natural features data depicting how these occurrences are displayed and managed within our GIS platform.

## STUDY AREA AND METHODS

The study area for the project is the wetlands of Saginaw Bay, the Alpena area, and the Les Cheneaux Island portion of northern Lake Huron. Sampling was conducted at 12 sites on Saginaw Bay, including Allen Road, Bradleyville Road, Coggins Road, Jones Road, Nayanquing, Pinconning Inner and Outer marshes, Palmer Road, Pine River, Thomas Road, Vanderbilt Park, and Wildfowl Bay Ramp (**Figure 2**). In the Les Cheneaux Islands, sampling was conducted at Cedarville Bay, Cedarville-Snows Road, Hill Island, Hessel Mill Pond, Mackinac Bay, Moscoe Channel, Mismar Bay, Prentiss Bay, Pine River, and Search Bay (**Figure 3**). Two sites, Squaw Bay and Whitefish Bay, were sampled near Alpena (**Figure 3**). The entire Lake Huron shoreline is considered the study area for review of the MNFI database.

**Vegetation Sampling.** Methods for the swamp sampling are discussed in the report by Tepley (Tepley et al. 2003). Vegetation sampling of the marsh was conducted along short transects, with beginning and end points recorded with a GPS. Five sampling points were sampled in each zone, with coverage values recorded within the 0.25 m<sup>2</sup> sampling plot. Water depth and substrate was also recorded at each sampling point. A fifteen minute random walk was then conducted for each zone at each site. A Floristic Quality Index (FQI) was computed for each zone based on the species list resulting from both the plot sampling and the random walk. The Floristic Quality Index program (Herman et al. 1996) provides a rank of conservatism (**C**), a wetness coefficient (**W**), and an FQI score which is a relative ranking of the quality of the site based on both the conservatism of the plants present at the site and the number of species. For this study, a separate FQI score was computed for each zone of the wetland as the quality of the separate zones of a marsh are not always similar to each other.

Rare plant sampling was conducted as part of the plot sampling and random walk. The entire site was not searched for rare species. In all of the sites visited, rare species are more characteristic of the wet meadow zone and so an effort was made to concentrate rare plant searches within this zone.

**GIS Mapping of Element Occurrences.** Prior to the advent of GIS, occurrences were recorded with an estimated lat/long point and a mapping precision. Three types of precision were used: second (S), minute (M), and general (G). “Second” precision means the location was known exactly. “Minute” precision means the location was known to within a mile. “General” means that the location is only known to the township level.

With GIS, the known spatial extent of an occurrence can be digitally represented. Data best represented by a point (i.e. single plants, small populations, etc.) are represented with a small, approximately six-meter radius circle (**Figure 1**). Older, pre-GIS records are represented spatially by applying a buffer to the estimated lat/long point. The buffer size is based on the mapping precision of the occurrence. Second precision records are assigned a 100 meter diameter buffer, minute precision records are assigned a 2,000 meter buffer, and general records are assigned an 8,000 meter buffer.

## RESULTS AND DISCUSSION

**Great Lakes Marsh Sampling.** Floristic Quality Index scores were used to compare the vegetation of the Lake Huron coastal wetland sites. The scores and species encountered during sampling are provided in the Appendices. The relationship between FQI scores and land use are also summarized in **Figures 4 and 5**. It can be seen from both figures that agricultural and urban development are low for all of the northern Lake Huron sites, both at Les Cheneaux and Alpena, but relatively high at many Saginaw Bay sites.

For the *wet meadow zone*, floristic quality index scores range from 11 to 41, with the lowest scores on Saginaw Bay and the highest in the Les Cheneaux Islands and the Alpena area. Floristic quality values range from the mid-20s to low 40s for the northern

sites. For the Les Cheneaux sites, the FQIs are relatively effective for measuring site quality. The highest scores are for Mismar (MI) and Mackinac Bay (MB), and Prentiss Bay (PB), large sites with high plant diversity and no exotic species. All three sites have roads along their edges, but relatively low levels of residential development. Slightly lower scores are seen for the Pine River (PM), Cedarville-Snows Road (CS), and Hill Island (HI), all sites where there are still relatively low levels of residential development. All of these sites have either localized filling to plant lawns, dumping of mineral soils into the edge of the marsh, or construction of docks that locally introduce exotic species into the marsh. At Moscoe Channel (MC) and Hessel Mill Pond (HP), increased disturbance, dock construction at Moscoe Channel and pond construction at Hessel Mill Pond have resulted in further increase in exotic establishment, with resulting lower FQI scores. The lowest values for the northern sites are found at Cedarville and Search Bay. Cedarville's low score is the result of a highly altered wet meadow, with nutrient input from the sewage treatment plant, as well as altered hydrology resulting from filling part of the wetland. The flora of this site contains only 28 species, four of which are exotics or monoculture-forming aggressive native species (reed canary-grass). Search Bay, in contrast, is an intact wetland with little human alteration, but it is much more exposed to wave action than the other northern sites, resulting in very low plant diversity.

The two Alpena sites have the highest FQI scores, reflecting high diversity as well as a flora of rare northern fen species. Many of the species that are characteristic of northern fens have high conservatism values; this in combination with relatively high species diversity results in high FQI scores. Whitefish Bay, the site with the highest FQI, has 12 fen plants out of 46 species, but also has three exotic species. Squaw Bay, with only four fen plants and 7 exotic species, is still the site with the second highest FQI. The level of disturbance is relatively low for both sites, but both have been impacted by highways and Squaw Bay has also been impacted by residential development.

The 12 sites on Saginaw Bay have the lowest FQI scores, even when land use within a kilometer of the sites is largely forest. All Saginaw Bay sites have FQI scores of less than 20. The reason for the low scores appears to be the wide-spread introduction of nutrients and exotic species like purple loosestrife, reed, and cattail from all of the agricultural drains, which are located approximately 0.5 to 1.0 miles apart. This impact seems to overpower the local land use differences of sites.

The highest FQI scores are for some of the least disturbed marshes with relatively good buffering. These include Pine River and nearby Palmer Road, plus Bradleyville and Outer Pinconning. The lowest scores occur at Nayanquing, where water-level manipulation and diking appear to have resulted in high levels of cattail, and at Wildfowl Bay Ramp, where wetland filling and diking have greatly altered the vegetation.

For the *emergent marsh zone*, the highest FQI score was again for Whitefish Bay near Alpena, still reflecting the high conservatism scores for fen species (**Figure 5**). High scores were also recorded for almost all of the Les Cheneaux sites, partially because of the relatively high diversity of submergent and floating species also present in many of the protected emergent zone of northern Lake Huron. Two disturbed sites in the Les

Cheneauxs, Cedarville Creek and Hessel Mill Pond, have relatively low FQI scores, 13.1 and 19.3 respectively. Cedarville Creek's emergent zone has been greatly impacted by the filling of parts of the wetland for parking lots and commercial building sites. Diversity within the emergent zone is low, with only six species present; all of these species were native species. At the mouth of the creek there is another portion of the wetland which is still hydrologically linked to Lake Huron; this wetland is more diverse and contains dense submergent vegetation resulting from enriched by sewage effluent. Sampling scores for this wetland were not included in this study. Search Bay has the lowest FQI in the study. The high energy wetland supports a very depauperate emergent flora, with only one species, hardstem bulrush (*Schoenoplectus pungens*). The second lowest FQI score is for Thomas Road, another high-energy wetland with only nine species present, eight of which are native.

All of the Saginaw Bay sites have FQI scores less than 25, with most Saginaw Bay sites having scores lower than either the Alpena or Les Cheneaux sites. The relationship between disturbance levels and FQI is not strong for the Saginaw Bay sites; many of the most disturbed sites have FQI scores in the same range or higher than the sites with low levels of agriculture or residential land use.

The FQI scores appear to have served fairly well for ranking the quality of the wetland. It is interesting, however, to compare the FQI scores of the wet meadow zone and emergent zone. At Saginaw Bay, 10 of 12 sites in the emergent zone had a higher FQI score than the wet meadow zone, with an average difference of 1.5 between the zones. This result seems consistent with field observations; wet meadow zones tend to have much greater levels of exotic species and are often impacted by upland agricultural or residential management.

In contrast, the wet meadow FQI scores are consistently higher than the emergent marsh scores for both the Les Cheneaux and Alpena sites (for 11 or 12 sites), with an average FQI score difference of 5.7 between the zones in the Les Cheneaux sites, and 5.6 between zones at the Alpena sites. This is consistent with field observations. Not only does the wet meadow zone have more species present, northern fen species are also concentrated in this zone, resulting in high FQI scores. The level of disturbance is generally low enough in the Les Cheneaux Islands that the wet meadow scores are not greatly reduced.

Overall, the relative position of the sites on figure 4 and figure 5 would not change if the wet meadow and the emergent marsh scores were averaged to produce a single site-wide FQI score. However, by maintaining separate wet meadow and emergent scores, differences in management can be better understood, facilitating more effective future management.

Because of low water conditions in the sampling year, 2002, there was no zone that could strictly be described as a submergent vegetation zone for any of the wetlands sampled along Lake Huron. Inner Pinconning, a site that supports a well-developed submergent zone when water levels are higher, supported a mix of submergent, emergent,



and floating vegetation, with emergent vegetation now the overwhelming dominant in a zone previously dominated by submergent vegetation. The emergent vegetation now extends several hundred meters into the protected sandspit embayment. Dominant emergents include *Sagittaria rigida*, *Schoenoplectus tabernaemontani*, *Typha angustifolia*, *Typha latifolia*, and *Juncus effusus*.

No rare species were encountered at any of the marsh sites sampled. Rare species are known from the marsh edge at both Alpena sites, but were not encountered in transects. Dwarf lake iris (*Iris lacustris*) and Houghton's goldenrod (*Solidago houghtonii*) could potentially be found at the marsh edge. Similarly, both of these species, as well as butterwort (*Pinguicula vulgaris*) could potentially be found along the Les Cheneaux shoreline, especially in low-water conditions.

In Saginaw Bay, the coastal marshes are not typically habitat for rare species, but in low-water years lakeplain prairie species could potentially move into the wet meadow zone. No lakeplain prairie plants were noted expanding into the wet meadow or emergent marsh during our surveys.

**GIS Mapping of Element Occurrences.** New natural features data are transcribed and entered into our electronic database using heritage data standards developed for the spatial representation of element occurrences. Heritage data standards and methodology are defined by the organization called NatureServe ([www.natureserve.org](http://www.natureserve.org)). Under heritage methodology, only the known extent of an occurrence may be digitized. For example, if the only information known about an occurrence is that it occurs within a specific legal section, with no more precise spatial information, the section boundary becomes the mapped extent of the occurrence.

Under this project, existing information was carefully reviewed, and where possible circular buffers were replaced with an actual digitized spatial boundary. This digitizing effort entailed examining previously documented records, including field forms and any associated maps that showed the specific locations and the spatial extent of the records. The result of the digitizing effort is a data set that supplies more precise and useful information than either a stand-alone database or circular spatial extents derived solely from a mapping precision protocol. **Figure 6** depicts the number of elements prior to our revisions in Saginaw Bay. **Figure 7** illustrate the extent of element occurrence boundaries after digitizing. It is important to note in comparing Figures 6 and 7 that the number of records does not change greatly in many areas of the Saginaw Basin, but the area mapped as containing these records is greatly reduced in some places. **Figure 8** depicts this difference by showing the changes in the number of occurrences per legal section that result from replacing the large circular buffers with a digitized spatial extent for the occurrences. This change is very important for the permitting process, greatly reducing the number of "false hits" on general or coarsely mapped records.

In order to maximize effectiveness of various funding sources for digitizing records, funding from this project was combined with funds from other sources. This resulted in a more efficient digitizing process, allowing MNFI to digitize more

occurrences over broader political boundaries than was possible from any individual source. The synergetic effect of combining funding sources resulted in digitizing all occurrences in the counties where MNFI digitized shoreline occurrences. This provides far more useful information for local land use planners and resource managers.

### **ACKNOWLEDGMENTS**

The funding source for this project is the Coastal Management Program, Dept. of Environmental Quality and the National Oceanic and Atmospheric Administration, U.S. Dept. of Commerce. This was a joint project with MNFI and Dr. Thomas Burton of Michigan State University and Dr. Don Uzarski of Grand Valley State University.

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## **FIGURES**

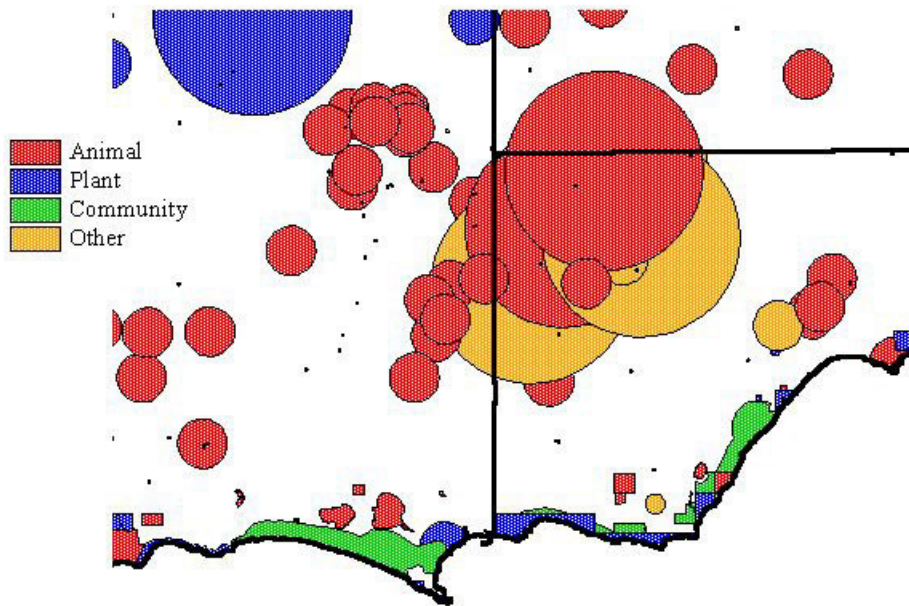
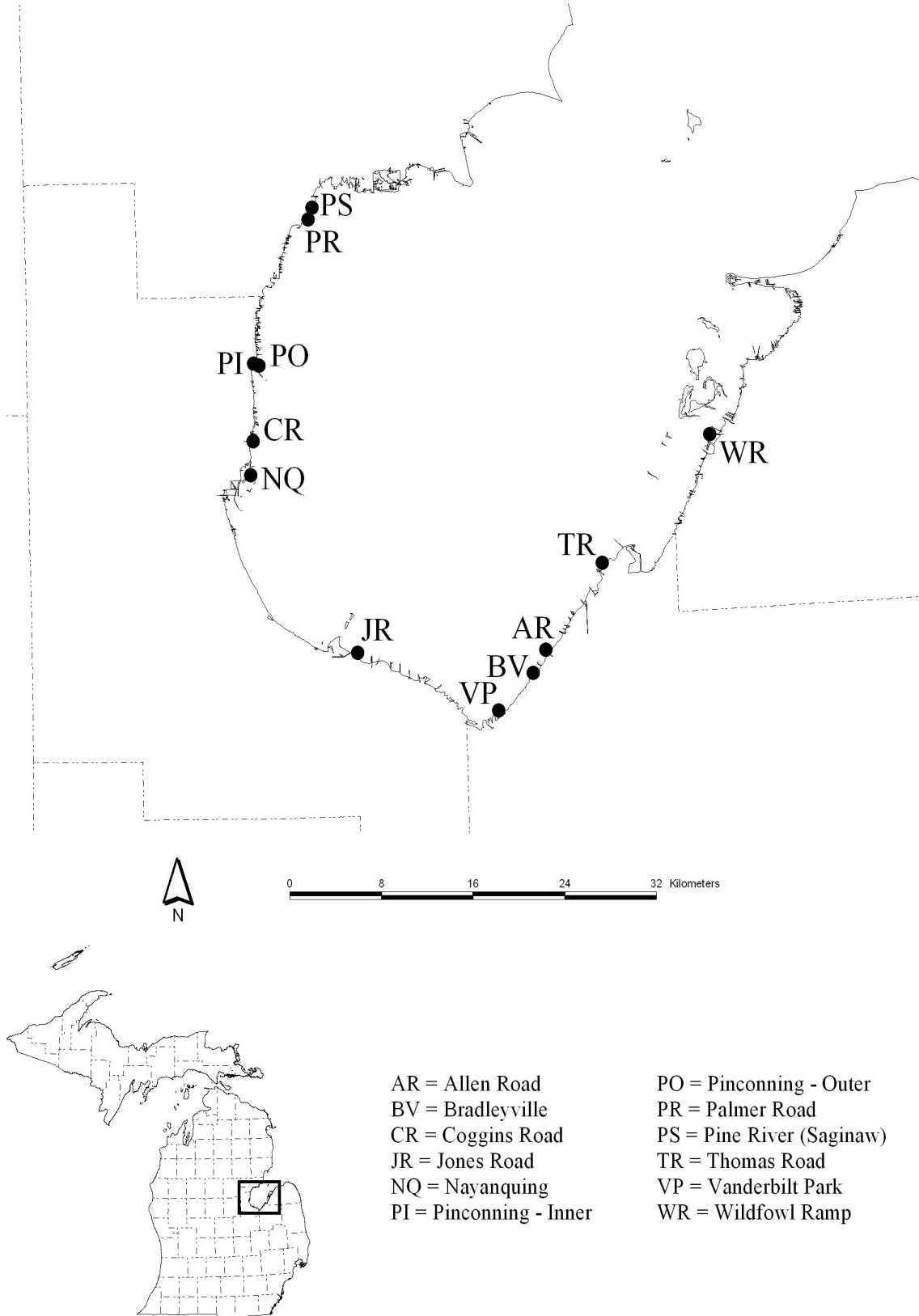
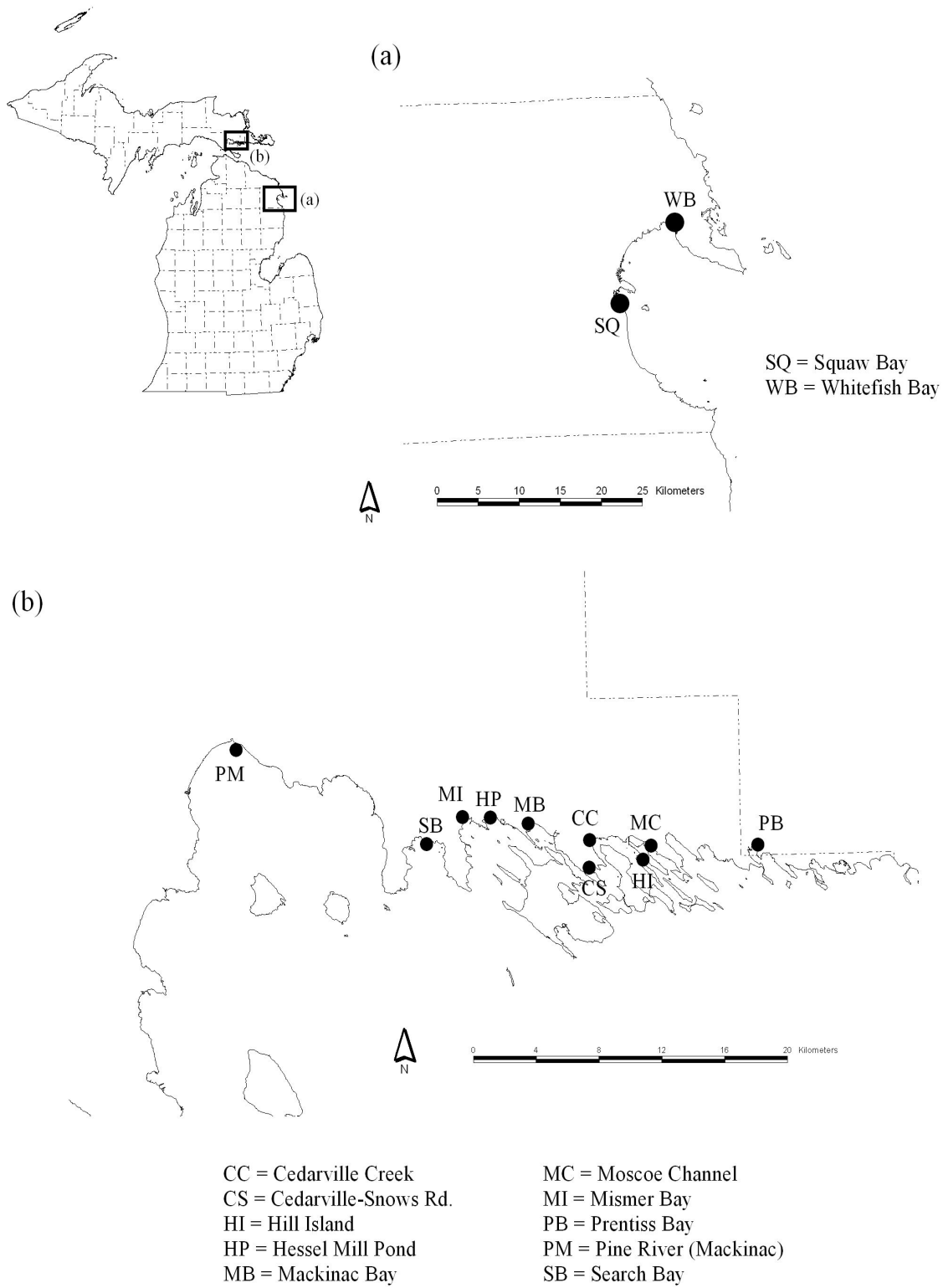


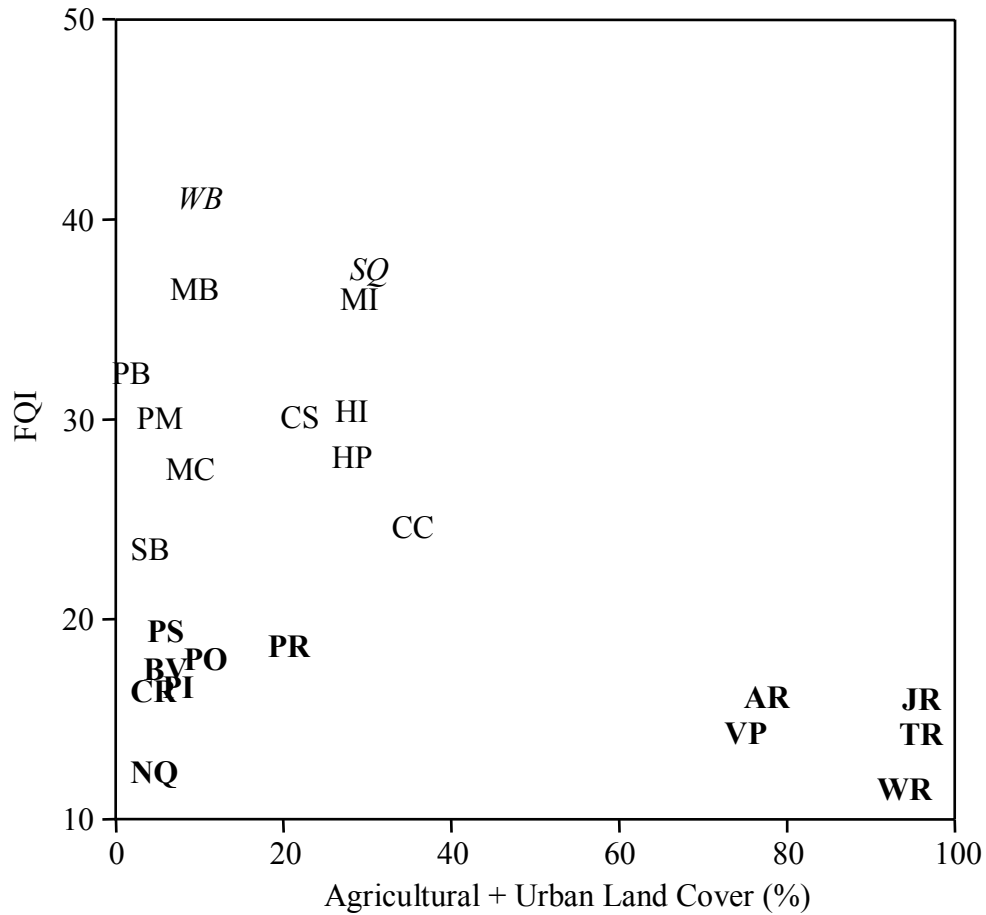
Figure 1. Comparison of digitized element occurrences and buffered point element occurrences.



**Figure 2.** Location of coastal marsh sampling sites along Saginaw Bay.



**Figure 3.** Location of coastal marsh sampling sites along the Lake Huron shoreline in (a) Alpena County, and (b) the Les Cheneaux Islands.



**Saginaw Bay**

- AR = Allen Rd
- BV = Bradleyville
- CR = Coggins Road
- JR = Jones Road
- NQ = Nayanquing
- PI = Pinconning - Inner
- PO = Pinconning (Outer)
- PR = Palmer Road
- PS = Pine River (Saginaw)
- TR = Thomas Road
- VP = Vanderbilt Park
- WR = Wildfowl Ramp

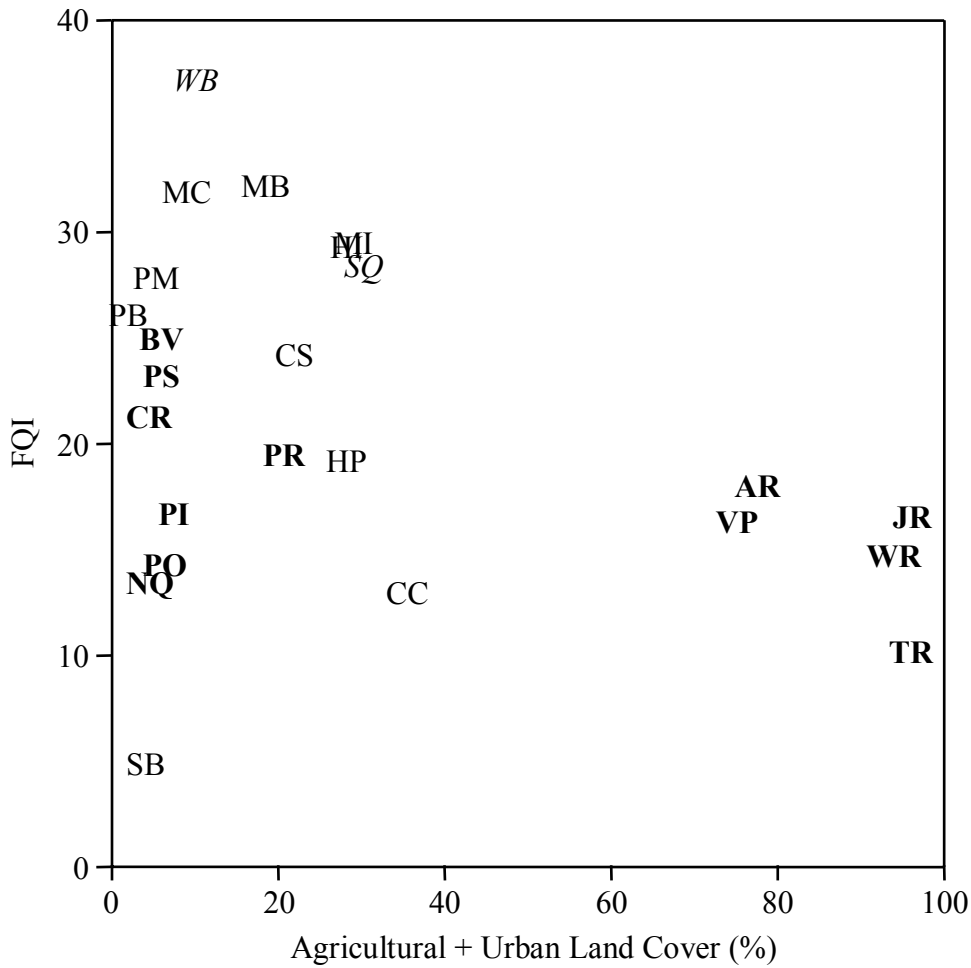
**Les Cheneaux**

- CC = Cedarville (Creek)
- CS = Cedarville-Snows Rd
- HI = Hill Island
- HP = Hessel Mill Pond
- MB = Mackinac Bay
- MC = Moscoe Channel
- MI = Mismar Bay
- PB = Prentiss Bay
- PM = Pine River (Mackinac)
- SB = Search Bay

**Alpena**

- SQ = Squaw Bay
- WB = Whitefish Bay

**Figure 4.** Relationship of FQI in the wet meadow of 24 marshes along the shore of Lake Huron to percent agricultural and urban land cover within a 1-km buffer around the marsh.



**Saginaw Bay**

- AR = Allen Rd
- BV = Bradleyville
- CR = Coggins Road
- JR = Jones Road
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- PI = Pinconning - Inner
- PO = Pinconning (Outer)
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- TR = Thomas Road
- VP = Vanderbilt Park
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**Les Cheneaux**

- CC = Cedarville (Creek)
- CS = Cedarville-Snowley Rd
- HI = Hill Island
- HP = Hessel Mill Pond
- MB = Mackinac Bay
- MC = Moscoe Channel
- MI = Mismar Bay
- PB = Prentiss Bay
- PM = Pine River (Mackinac)
- SB = Search Bay

**Alpena**

- SQ = Squaw Bay
- WB = Whitefish Bay

**Figure 5.** Relationship of FQI in the emergent marsh of 24 marshes along the shore of Lake Huron to percent agricultural and urban land cover within a 1-km buffer around the marsh.



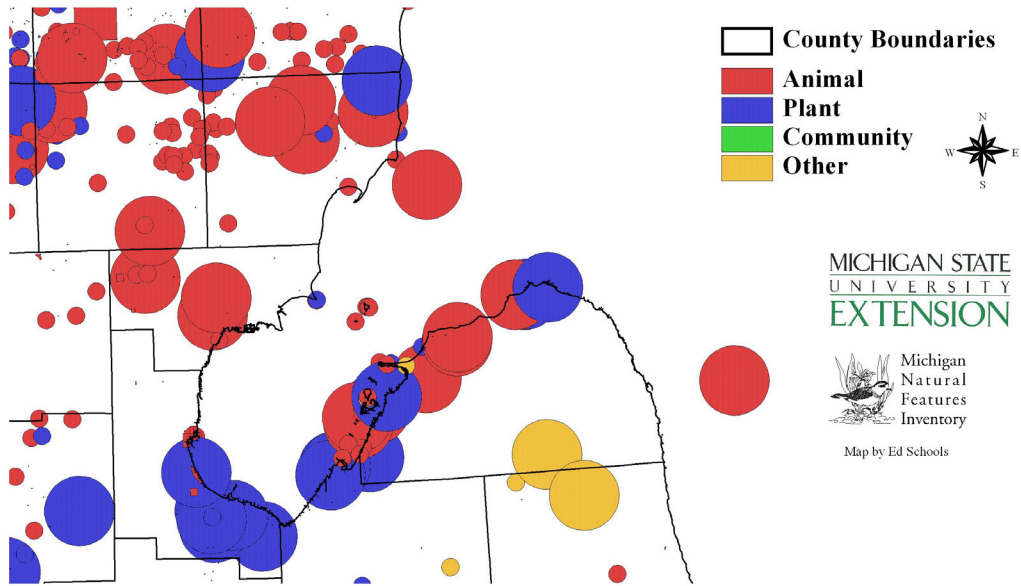


Figure 6. MNFI element occurrences before digitizing in the Saginaw Bay Region.

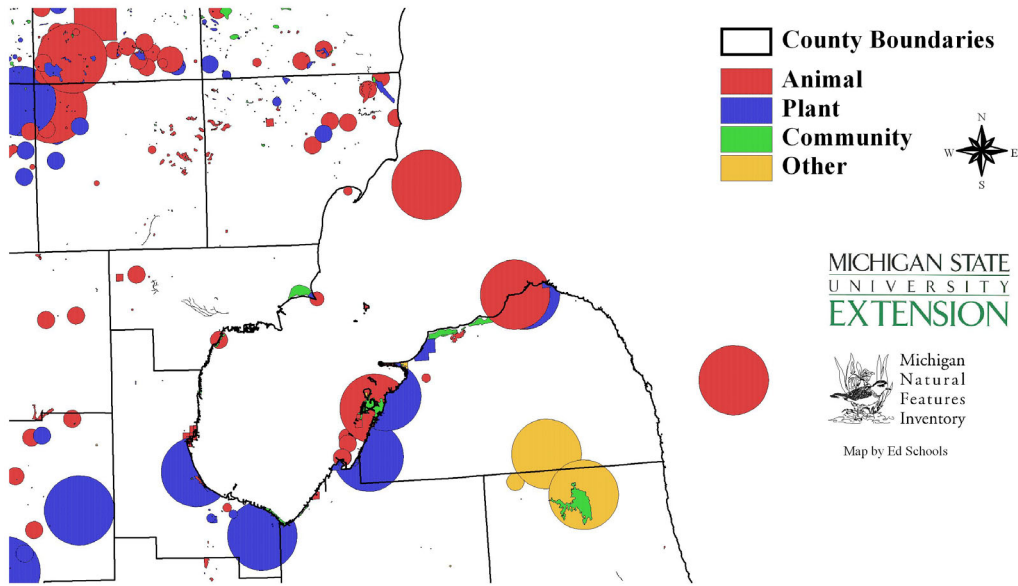


Figure 7. MNFI element occurrences after digitizing in the Saginaw Bay Region.

## Changes in the Number of MNFI Element Occurrences per GLO Section as a Result of Digitizing and Other Data Work in the Saginaw Bay Region

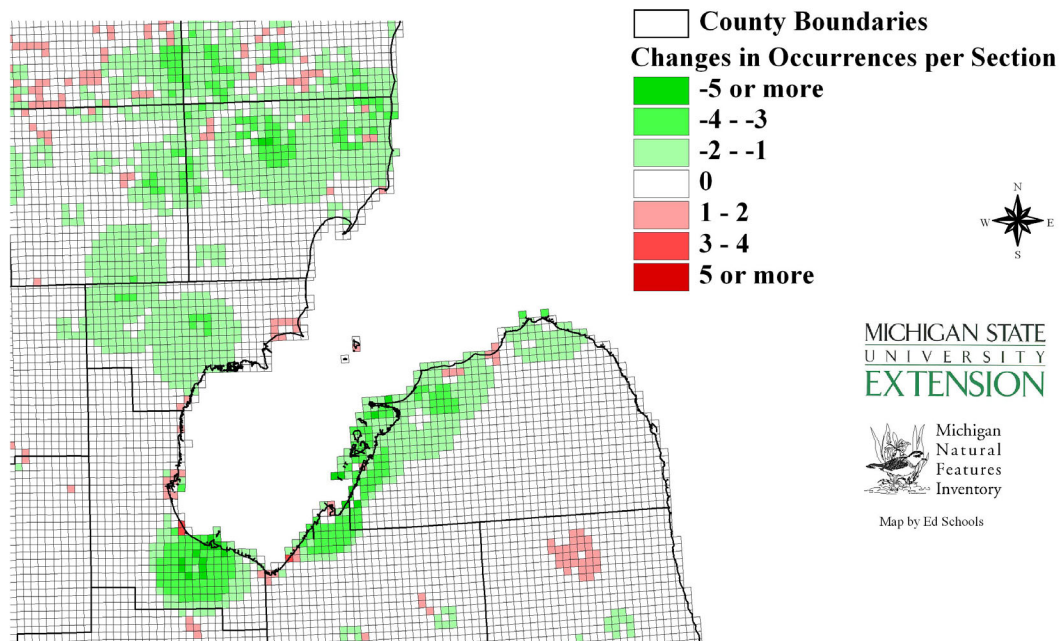


Figure 8. Changes in the number of MNFI element occurrences per GLO section as a result of digitizing and other data work in the Saginaw Bay Region.

## **APPENDICES**

## Appendix 1a. Allen Road, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

18	NATIVE SPECIES
20	Total Species
4.3	NATIVE MEAN C
3.8	W/Adventives
18.1	NATIVE FQI
17.2	W/Adventives
-4.4	NATIVE MEAN W
-4.5	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	18	90.00%
Tree	1	5.00%
Shrub	1	5.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	14	70.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	1	5.00%
A-Grass	0	0.00%
P-Sedge	1	5.00%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	2	10.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	10.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 1a. Allen Road, Emergent Marsh, Continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ASTLAN	2	<i>Aster lanceolatus</i>	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus Canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MYRSPI	0	MYRIOPHYLLUM SPICATUM	-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POPDEL	1	<i>Populus deltoids</i>	-1	FAC+	Nt Tree	COTTONWOOD
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTNOD	6	<i>Potamogeton nodosus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
SAGCUN	6	<i>Sagittaria cuneata</i>	-5	OBL	Nt P-Forb	ARUM LEAVED ARROWHEAD
SAGGRA	10	<i>Sagittaria graminea</i>	-5	OBL	Nt P-Forb	GRASS LEAVED ARROWHEAD
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 1b. Allen Road, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

26	NATIVE SPECIES
28	Total Species
3.2	NATIVE MEAN C
3	W/Adventives
16.3	NATIVE FQI
15.7	W/Adventives
-2.9	NATIVE MEAN W
-2.8	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	26	92.90%
Tree	1	3.60%
Shrub	1	3.60%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	15	53.60%
B-Forb	1	3.60%
A-Forb	2	7.10%
P-Grass	3	10.70%
A-Grass	0	0.00%
P-Sedge	2	7.10%
A-Sedge	1	3.60%
Fern	0	0.00%
<b>Adventive</b>	2	7.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	7.10%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 1b. Allen Road, Wet Meadow, continued.**

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGAPUR	7	<i>Agalinis purpurea</i>	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	<i>Agrostis hyemalis</i>	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTLAN	2	<i>Aster lanceolatus</i>	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALSEP	2	<i>Calystegia sepium</i>	0	FAC	Nt P-Forb	HEDGE BINDWEED
CXVIRI	4	<i>Carex viridula</i>	-5	OBL	Nt P-Sedge	SEDGE
CYPDIA	5	<i>Cyperus diandrus</i>	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPMAM	4	<i>Eupatorium maculatum</i>	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
HYPMAJ	4	<i>Hypericum majus</i>	-3	FACW	Nt P-Forb	CANADA ST. JOHN'S WORT
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
OENBIE	2	<i>Oenothera biennis</i>	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POPDEL	1	<i>Populus deltoides</i>	-1	FAC+	Nt Tree	COTTONWOOD
POTARE	0	POTENTILLA ARGENTEA	3	FACU	Ad P-Forb	SILVERY CINQUEFOIL
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	<i>Solidago rugosa</i>	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
VERHAS	4	<i>Verbena hastata</i>	-4	FACW+	Nt P-Forb	BLUE VERVAIN



## Appendix 2a. Bradleyville, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

41	NATIVE SPECIES
43	Total Species
3.9	NATIVE MEAN C
3.7	W/Adventives
25.1	NATIVE FQI
24.6	W/Adventives
-3.6	NATIVE MEAN W
-3.6	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	41	95.30%
Tree	1	2.30%
Shrub	1	2.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	21	48.80%
B-Forb	0	0.00%
A-Forb	3	7.00%
P-Grass	4	9.30%
A-Grass	0	0.00%
P-Sedge	7	16.30%
A-Sedge	4	9.30%
Fern	0	0.00%
<b>Adventive</b>	2	4.70%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	4.70%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 2a. Bradleyville, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTLAN	2	Aster lanceolatus	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
ASTLAT	2	Aster lateriflorus	-2	FACW-	Nt P-Forb	SIDE FLOWERING ASTER
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CXCRAE	10	Carex crawei	-3	FACW	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
CYPDIA	5	Cyperus diandrus	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPRIV	3	Cyperus rivularis	-4	FACW+	Nt A-Sedge	BROOK NUT SEDGE
CYPSTR	3	Cyperus strigosus	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
ELEOBT	3	Eleocharis obtuse	-5	OBL	Nt A-Sedge	SPIKE RUSH
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FIMAUT	6	Fimbristylis autumnalis	-4	FACW+	Nt A-Sedge	AUTUMN SEDGE
HYPMAJ	4	Hypericum majus	-3	FACW	Nt P-Forb	CANADA ST. JOHN'S WORT
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
JUNTOR	4	Juncus torreyi	-3	FACW	Nt P-Forb	TORREY'S RUSH
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MYRSPI	0	MYRIOPHYLLUM SPICATUM	-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
NAJFLE	5	Najas flexilis	-5	OBL	Nt A-Forb	SLENDER NAIAD
NYMODO	6	Nymphaea odorata	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
PANIMP	3	Panicum implicatum	0	FAC	Nt P-Grass	PANIC GRASS
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	Potamogeton pectinatus	-5	OBL	Nt P-Forb	SAGO PONDWEED
POTRIC	5	Potamogeton richardsonii	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
POTANS	5	Potentilla anserine	-4	FACW+	Nt P-Forb	SILVERWEED
SAGCUN	6	Sagittaria cuneata	-5	OBL	Nt P-Forb	ARUM LEAVED ARROWHEAD
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD

## Appendix 2b, Bradleyville Road, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

20	NATIVE SPECIES
23	Total Species
4	NATIVE MEAN C
3.4	W/Adventives
17.7	NATIVE FQI
16.5	W/Adventives
-3.4	NATIVE MEAN W
-3.2	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	20	87.00%
Tree	1	4.30%
Shrub	1	4.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	8	34.80%
B-Forb	0	0.00%
A-Forb	3	13.00%
P-Grass	4	17.40%
A-Grass	0	0.00%
P-Sedge	2	8.70%
A-Sedge	1	4.30%
Fern	0	0.00%
<b>Adventive</b>	3	13.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	8.70%
B-Forb	1	4.30%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 2b: Bradleyville Road, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CXCRAE	10	Carex crawei	-3	FACW	Nt P-Sedge	SEDGE
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CYPRIV	3	Cyperus rivularis	-4	FACW+	Nt A-Sedge	BROOK NUT SEDGE
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
LOBKAL	10	Lobelia kalmii	-5	OBL	Nt P-Forb	BOG LOBELIA
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MIMRIN	5	Mimulus ringens	-5	OBL	Nt P-Forb	MONKEY FLOWER
PANIMP	3	Panicum implicatum	0	FAC	Nt P-Grass	PANIC GRASS
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POLPUN	5	Polygonum punctatum	-5	OBL	Nt A-Forb	SMARTWEED
POPDEL	1	Populus deltoides	-1	FAC+	Nt Tree	COTTONWOOD
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
URTDIO	1	Urtica dioica	-1	FAC+	Nt P-Forb	NETTLE
VERHAS	4	Verbena hastata	-4	FACW+	Nt P-Forb	BLUE VERVAIN

### Appendix 3a. Coggins Road, Emergent Marsh.

By: Dennis Albert

#### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
36	Total Species
3.7	NATIVE MEAN C
3.4	W/Adventives
21.4	NATIVE FQI
20.5	W/Adventives
-4.6	NATIVE MEAN W
-4.5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	33	91.70%
Tree	1	2.80%
Shrub	1	2.80%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	19	52.80%
B-Forb	1	2.80%
A-Forb	3	8.30%
P-Grass	3	8.30%
A-Grass	0	0.00%
P-Sedge	4	11.10%
A-Sedge	1	2.80%
Fern	0	0.00%
<b>Adventive</b>	3	8.30%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	8.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 3a. Coggins Road, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ASTLAN	2	<i>Aster lanceolatus</i>	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
BIDCON	5	<i>Bidens conatus</i>	-5	OBL	Nt A-Forb	TICKSEED
BOLFLU	6	<i>Bolboschoenus fluviatilis</i>	-5	OBL	Nt P-Sedge	BULRUSH
CXVIRI	4	<i>Carex viridula</i>	-5	OBL	Nt P-Sedge	SEDGE
CICBUL	5	<i>Cicuta bulbifera</i>	-5	OBL	Nt P-Forb	WATER HEMLOCK
CIRMUT	6	<i>Cirsium muticum</i>	-5	OBL	Nt B-Forb	SWAMP THISTLE
ELEINT	7	<i>Eleocharis intermedia</i>	-3	FACW	Nt A-Sedge	SPIKE RUSH
ELOCAN	1	<i>Elodea canadensis</i>	-5	OBL	Nt P-Forb	COMMON WATERWEED
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
HETDUB	6	<i>Heteranthera dubia</i>	-5	OBL	Nt P-Forb	WATER STAR GRASS
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
LEEORY	3	<i>Leersia oryzoides</i>	-5	OBL	Nt P-Grass	CUT GRASS
LEMMIN	5	<i>Lemna minor</i>	-5	OBL	Nt A-Forb	SMALL DUCKWEED
LYCAME	2	<i>Lycopus americanus</i>	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	<i>Lycopus uniflorus</i>	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MIMRIN	5	<i>Mimulus ringens</i>	-5	OBL	Nt P-Forb	MONKEY FLOWER
MYREXA	10	<i>Myriophyllum exalbescens</i>	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
MYRSPI	0	<i>MYRIOPHYLLUM SPICATUM</i>	-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	WATERLILY
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POLLAP	0	<i>Polygonum lapathifolium</i>	-4	FACW+	Nt A-Forb	NODDING SMARTWEED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
POTRIC	5	<i>Potamogeton richardsonii</i>	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALAMY	3	<i>Salix amygdaloides</i>	-3	FACW	Nt Tree	PEACH LEAVED WILLOW
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLDUL	0	<i>SOLANUM DULCAMARA</i>	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

### Appendix 3b. Coggins Road, Wet Meadow.

By: Dennis Albert

#### FLORISTIC QUALITY DATA

32	NATIVE SPECIES
36	Total Species
2.9	NATIVE MEAN C
2.6	W/Adventives
16.6	NATIVE FQI
15.7	W/Adventives
-2.7	NATIVE MEAN W
-2.4	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	32	88.90%
Tree	3	8.30%
Shrub	3	8.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	14	38.90%
B-Forb	2	5.60%
A-Forb	3	8.30%
P-Grass	4	11.10%
A-Grass	0	0.00%
P-Sedge	2	5.60%
A-Sedge	1	2.80%
Fern	0	0.00%
<b>Adventive</b>	4	11.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	8.30%
B-Forb	1	2.80%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 3b. Coggins Road, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
ELEOBT	3	Eleocharis obtuse	-5	OBL	Nt A-Sedge	SPIKE RUSH
ELOCAN	1	Elodea canadensis	-5	OBL	Nt P-Forb	COMMON WATERWEED
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FRAAME	5	Fraxinus americana	3	FACU	Nt Tree	WHITE ASH
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNART	3	Juncus articulatus	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
JUNTOR	4	Juncus torreyi	-3	FACW	Nt P-Forb	TORREY'S RUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
OENBIE	2	Oenothera biennis	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POLPUN	5	Polygonum punctatum	-5	OBL	Nt A-Forb	SMARTWEED
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
POPTRE	1	Populus tremuloides	0	FAC	Nt Tree	QUAKING ASPEN
POTANS	5	Potentilla anserine	-4	FACW+	Nt P-Forb	SILVERWEED
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLALT	1	Solidago altissima	3	FACU	Nt P-Forb	TALL GOLDENROD
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
TAROFF	0	TARAXACUM OFFICINALE	3	FACU	Ad P-Forb	COMMON DANDELION



## Appendix 4a. Jones Road, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

17	NATIVE SPECIES
18	Total Species
4.1	NATIVE MEAN C
3.8	W/Adventives
16.7	NATIVE FQI
16.3	W/Adventives
-4.4	NATIVE MEAN W
-4.4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	17	94.40%
Tree	0	0.00%
Shrub	2	11.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	7	38.90%
B-Forb	0	0.00%
A-Forb	1	5.60%
P-Grass	1	5.60%
A-Grass	0	0.00%
P-Sedge	5	27.80%
A-Sedge	1	5.60%
Fern	0	0.00%
<b>Adventive</b>	1	5.60%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	5.60%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 4a. Jones Road, Emergent, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPDIA	5	<i>Cyperus diandrus</i>	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPSTR	3	<i>Cyperus strigosus</i>	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LEMMIN	5	<i>Lemna minor</i>	-5	OBL	Nt A-Forb	SMALL DUCKWEED
LYSTHY	6	<i>Lysimachia thyrsiflora</i>	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POTILL	5	<i>Potamogeton illinoensis</i>	-5	OBL	Nt P-Forb	ILLINOIS PONDWEED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHSUB	8	<i>Schoenoplectus subterminalis</i>	-5	OBL	Nt P-Sedge	BULRUSH
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 4b. Jones Road, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

25	NATIVE SPECIES
29	Total Species
3.2	NATIVE MEAN C
2.8	W/Adventives
16.2	NATIVE FQI
15	W/Adventives
-3.2	NATIVE MEAN W
-3	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	25	86.20%
Tree	1	3.40%
Shrub	1	3.40%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	17	58.60%
B-Forb	2	6.90%
A-Forb	2	6.90%
P-Grass	2	6.90%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	4	13.80%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	10.30%
B-Forb	1	3.40%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 4b. Jones Road, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
ASTLAN	2	Aster lanceolatus	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
EPILEP	6	Epilobium leptophyllum	-5	OBL	Nt P-Forb	FEN WILLOW HERB
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GOLDENROD
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LACBIE	2	Lactuca biennis	0	FAC	Nt B-Forb	TALL BLUE LETTUCE
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
MIMRIN	5	Mimulus ringens	-5	OBL	Nt P-Forb	MONKEY FLOWER
OENBIE	2	Oenothera biennis	3	FACU	Nt B-Forb	EVENING PRIMROSE
PETHYB	0	PETASITES HYBRIDUS	-5	OBL	Ad P-Forb	BUTTERFLY DOCK
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLALT	1	Solidago altissima	3	FACU	Nt P-Forb	TALL GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 5a. Nayanquing Point, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

11	NATIVE SPECIES
12	Total Species
4.1	NATIVE MEAN C
3.8	W/Adventives
13.6	NATIVE FQI
13	W/Adventives
-4.9	NATIVE MEAN W
-4.9	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	11	91.70%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	8	66.70%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	1	8.30%
A-Grass	0	0.00%
P-Sedge	2	16.70%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	8.30%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	8.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 5a. Nayanquing Point, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
POTRIC	5	<i>Potamogeton richardsonii</i>	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
SAGGRA	10	<i>Sagittaria graminea</i>	-5	OBL	Nt P-Forb	GRASS LEAVED ARROWHEAD
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 5b. Nayanquing Point, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

16	NATIVE SPECIES
17	Total Species
3.1	NATIVE MEAN C
2.9	W/Adventives
12.5	NATIVE FQI
12.1	W/Adventives
-4.7	NATIVE MEAN W
-4.8	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	16	94.10%
Tree	0	0.00%
Shrub	1	5.90%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	8	47.10%
B-Forb	0	0.00%
A-Forb	2	11.80%
P-Grass	2	11.80%
A-Grass	0	0.00%
P-Sedge	3	17.60%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	5.90%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	5.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 5b. Nayanquing Point, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CICBUL	5	<i>Cicuta bulbifera</i>	-5	OBL	Nt P-Forb	WATER HEMLOCK
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNEFF	3	<i>Juncus effuses</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
PILPUM	5	<i>Pilea pumila</i>	-3	FACW	Nt A-Forb	CLEARWEED
POLLAP	0	<i>Polygonum lapathifolium</i>	-4	FACW+	Nt A-Forb	NODDING SMARTWEED
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL



## Appendix 6a. Palmer Road, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

26	NATIVE SPECIES
27	Total Species
3.8	NATIVE MEAN C
3.7	W/Adventives
19.6	NATIVE FQI
19.2	W/Adventives
-3.8	NATIVE MEAN W
-3.7	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	26	96.30%
Tree	1	3.70%
Shrub	1	3.70%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	12	44.40%
B-Forb	0	0.00%
A-Forb	3	11.10%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	8	29.60%
A-Sedge	1	3.70%
Fern	0	0.00%
<b>Adventive</b>	1	3.70%
Tree	1	3.70%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 6a. Palmer Road, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ASTERI	3	<i>Aster ericoides</i>	4	FACU-	Nt P-Forb	HEATH ASTER
ASTLAT	2	<i>Aster lateriflorus</i>	-2	FACW-	Nt P-Forb	SIDE FLOWERING ASTER
BOLFLU	6	<i>Bolboschoenus fluviatilis</i>	-5	OBL	Nt P-Sedge	BULRUSH
CXBEBB	4	<i>Carex bebbii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXHYST	2	<i>Carex hystericina</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	<i>Carex vulpinoidea</i>	-5	OBL	Nt P-Sedge	SEDGE
ECHLOB	2	<i>Echinocystis lobata</i>	-2	FACW-	Nt A-Forb	WILD CUCUMBER
ELEINT	7	<i>Eleocharis intermedia</i>	-3	FACW	Nt A-Sedge	SPIKE RUSH
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
POPDEL	1	<i>Populus deltoids</i>	-1	FAC+	Nt Tree	COTTONWOOD
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTILL	5	<i>Potamogeton illinoensis</i>	-5	OBL	Nt P-Forb	ILLINOIS PONDWEED
RORPAL	1	<i>Rorippa palustris</i>	-5	OBL	Nt A-Forb	YELLOW CRESS
RUMMAR	5	<i>Rumex maritimus</i>	-4	FACW+	Nt A-Forb	GOLDEN DOCK
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SALFRA	0	<i>SALIX FRAGILIS</i>	-1	FAC+	Ad Tree	CRACK WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLRUG	3	<i>Solidago rugosa</i>	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
UTRVUL	6	<i>Utricularia vulgaris</i>	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 6b. Palmer Road, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
37	Total Species
3.3	NATIVE MEAN C
2.9	W/Adventives
18.8	NATIVE FQI
17.8	W/Adventives
-3.8	NATIVE MEAN W
-3.5	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	33	89.20%
Tree	1	2.70%
Shrub	1	2.70%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	16	43.20%
B-Forb	0	0.00%
A-Forb	3	8.10%
P-Grass	4	10.80%
A-Grass	0	0.00%
P-Sedge	7	18.90%
A-Sedge	1	2.70%
Fern	0	0.00%
<b>Adventive</b>	4	10.80%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	8.10%
B-Forb	1	2.70%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 6b. Palmer Road, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXCOMO	5	<i>Carex comosa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXHYST	2	<i>Carex hystericina</i>	-5	OBL	Nt P-Sedge	SEDGE
CXLACU	6	<i>Carex lacustris</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	<i>Carex vulpinoidea</i>	-5	OBL	Nt P-Sedge	SEDGE
CIRVUL	0	<i>CIRSIIUM VULGARE</i>	4	FACU-	Ad B-Forb	BULL THISTLE
CYPDIA	5	<i>Cyperus diandrus</i>	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
ELEERY	4	<i>Eleocharis erythropoda</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPMAM	4	<i>Eupatorium maculatum</i>	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FRAAME	5	<i>Fraxinus Americana</i>	3	FACU	Nt Tree	WHITE ASH
GALTRD	6	<i>Galium trifidum</i>	-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
IMPCAP	2	<i>Impatiens capensis</i>	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNART	3	<i>Juncus articulatus</i>	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LEEORY	3	<i>Leersia oryzoides</i>	-5	OBL	Nt P-Grass	CUT GRASS
LYTSAL	0	<i>LYTHRUM SALICARIA</i>	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POLPUN	5	<i>Polygonum punctatum</i>	-5	OBL	Nt A-Forb	SMARTWEED
POLSCA	2	<i>Polygonum scandens</i>	0	FAC	Nt P-Forb	FALSE BUCKWHEAT
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCUGAL	5	<i>Scutellaria galericulata</i>	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SOLDUL	0	<i>SOLANUM DULCAMARA</i>	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
URTDIO	1	<i>Urtica dioica</i>	-1	FAC+	Nt P-Forb	NETTLE

## Appendix 7a. Pinconning Inner Marsh, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

15	NATIVE SPECIES
16	Total Species
4.5	NATIVE MEAN C
4.3	W/Adventives
16.8	NATIVE FQI
16.3	W/Adventives
-4.6	NATIVE MEAN W
-4.7	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	15	93.75%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	11	68.75%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	4	25.00%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	6.25%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	6.70%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 7a. Pinconning inner, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CXHYST	2	<i>Carex hystericina</i>	-5	OBL	Nt P-Sedge	SEDGE
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNEFF	3	<i>Juncus effuses</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
NUPVAR	7	<i>Nuphar variegata</i>	-5	OBL	Nt P-Forb	YELLOW POND LILY
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	WATERLILY
POLHYS	5	<i>Polygonum hydropiperoides</i>	-5	OBL	Nt P-Forb	WATER PEPPER
SAGRIG	6	<i>Sagittaria rigida</i>	-5	OBL	Nt P-Forb	STIFF ARROWHEAD
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
UTRVUL	6	<i>Utricularia vulgaris</i>	-5	OBL	Nt P-Forb	GREAT BLADDERWORT
VALAME	7	<i>Vallisneria cmericana</i>	-5	OBL	Nt P-Forb	EEL GRASS

## Appendix 7b. Pinconning Inner Marsh, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

22	NATIVE SPECIES
24	Total Species
3.6	NATIVE MEAN C
3.3	W/Adventives
16.8	NATIVE FQI
16.1	W/Adventives
-3.7	NATIVE MEAN W
-3.6	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	22	91.70%
Tree	0	0.00%
Shrub	2	8.30%
W-Vine	1	4.20%
H-Vine	0	0.00%
P-Forb	10	41.70%
B-Forb	0	0.00%
A-Forb	2	8.30%
P-Grass	2	8.30%
A-Grass	0	0.00%
P-Sedge	5	20.80%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	2	8.30%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	8.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 7b. Pinconning Inner, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXHYST	2	<i>Carex hystericina</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
IMPCAP	2	<i>Impatiens capensis</i>	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNEFF	3	<i>Juncus effusus</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
NUPVAR	7	<i>Nuphar variegata</i>	-5	OBL	Nt P-Forb	YELLOW POND LILY
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
PARQUI	5	<i>Parthenocissus quinquefolia</i>	1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POLSAG	5	<i>Polygonum sagittatum</i>	-5	OBL	Nt A-Forb	ARROW LEAVED TEAR THUMB
RUBSTR	2	<i>Rubus strigosus</i>	-2	FACW-	Nt Shrub	WILD RED RASPBERRY
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SOLDUL	0	<i>SOLANUM DULCAMARA</i>	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLGIG	3	<i>Solidago gigantean</i>	-3	FACW	Nt P-Forb	LATE GOLDENROD
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
VALAME	7	<i>Vallisneria americana</i>	-5	OBL	Nt P-Forb	EEL GRASS



## Appendix 8a. Pinconning Outer Marsh, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

14	NATIVE SPECIES
16	Total Species
3.9	NATIVE MEAN C
3.4	W/Adventives
14.4	NATIVE FQI
13.5	W/Adventives
-4.6	NATIVE MEAN W
-4.6	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	14	87.50%
Tree	0	0.00%
Shrub	2	12.50%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	6	37.50%
B-Forb	0	0.00%
A-Forb	3	18.80%
P-Grass	1	6.30%
A-Grass	0	0.00%
P-Sedge	1	6.30%
A-Sedge	1	6.30%
Fern	0	0.00%
<b>Adventive</b>	2	12.50%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	12.50%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 8a, Pinconning Outer, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
ELEINT	7	<i>Eleocharis intermedia</i>	-3	FACW	Nt A-Sedge	SPIKE RUSH
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNART	3	<i>Juncus articulatus</i>	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LEMMIN	5	<i>Lemna minor</i>	-5	OBL	Nt A-Forb	SMALL DUCKWEED
MYRSPI	0	<i>MYRIOPHYLLUM SPICATUM</i>	-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
NAJFLE	5	<i>Najas flexilis</i>	-5	OBL	Nt A-Forb	SLENDER NAIAD
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
SALERI	2	<i>Salix eriocephala</i>	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 8b. Pinconning Outer Marsh, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

39	NATIVE SPECIES
49	Total Species
3.2	NATIVE MEAN C
2.5	W/Adventives
19.7	NATIVE FQI
17.6	W/Adventives
-2.9	NATIVE MEAN W
-2.1	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	39	79.60%
Tree	1	2.00%
Shrub	5	10.20%
W-Vine	2	4.10%
H-Vine	0	0.00%
P-Forb	18	36.70%
B-Forb	2	4.10%
A-Forb	2	4.10%
P-Grass	2	4.10%
A-Grass	0	0.00%
P-Sedge	5	10.20%
A-Sedge	2	4.10%
Fern	0	0.00%
<b>Adventive</b>	10	20.40%
Tree	0	0.00%
Shrub	2	4.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	4	8.20%
B-Forb	3	6.10%
A-Forb	0	0.00%
P-Grass	1	2.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

## Appendix 8b. Pinconning Outer, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ASCSYR	1	<i>Asclepias syriaca</i>	5	UPL	Nt P-Forb	COMMON MILKWEED
ASTPUN	5	<i>Aster puniceus</i>	-5	OBL	Nt P-Forb	SWAMP ASTER
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXHYST	2	<i>Carex hystericina</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	<i>Carex viridula</i>	-5	OBL	Nt P-Sedge	SEDGE
CIRVUL	0	<i>CIRSIIUM VULGARE</i>	4	FACU-	Ad B-Forb	BULL THISTLE
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPDIA	5	<i>Cyperus diandrus</i>	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPSTR	3	<i>Cyperus strigosus</i>	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
DAUCAR	0	<i>DAUCUS CAROTA</i>	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
ELEINT	7	<i>Eleocharis intermedia</i>	-3	FACW	Nt A-Sedge	SPIKE RUSH
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPMAM	4	<i>Eupatorium maculatum</i>	-5	OBL	Nt P-Forb	JOE PYE WEED
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
IMPCAP	2	<i>Impatiens capensis</i>	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNART	3	<i>Juncus articulatus</i>	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LACCAN	2	<i>Lactuca canadensis</i>	2	FACU+	Nt B-Forb	TALL LETTUCE
LIGVUL	0	<i>LIGUSTRUM VULGARE</i>	1	FAC-	Ad Shrub	COMMON PRIVET
LONTAT	0	<i>LONICERA TATARICA</i>	3	FACU	Ad Shrub	TARTARIAN HONEYSUCKLE
LYCAME	2	<i>Lycopus americanus</i>	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYTSAL	0	<i>LYTHRUM SALICARIA</i>	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
OENBIE	2	<i>Oenothera biennis</i>	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PARQUI	5	<i>Parthenocissus quinquefolia</i>	1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
PLAMAJ	0	<i>PLANTAGO MAJOR</i>	-1	FAC+	Ad P-Forb	COMMON PLANTAIN
POACOM	0	<i>POA COMPRESSA</i>	2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POPDEL	1	<i>Populus deltoides</i>	-1	FAC+	Nt Tree	COTTONWOOD
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
SALERI	2	<i>Salix eriocephala</i>	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SAMCAN	3	<i>Sambucus canadensis</i>	-2	FACW-	Nt Shrub	ELDERBERRY
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	<i>Solidago rugosa</i>	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
SPIALB	4	<i>Spiraea alba</i>	-4	FACW+	Nt Shrub	MEADOWSWEET
TAROFF	0	<i>TARAXACUM OFFICINALE</i>	3	FACU	Ad P-Forb	COMMON DANDELION
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
URTDIO	1	<i>Urtica dioica</i>	-1	FAC+	Nt P-Forb	NETTLE
VERTHA	0	<i>VERBASCUM THAPSUS</i>	5	UPL	Ad B-Forb	COMMON MULLEIN

**Appendix 8b. Pinconning Outer, Wet Meadow, continued.**

VERHAS	4	Verbena hastata	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	3	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERBANK GRAPE

## Appendix 9a. Pine River (Saginaw Bay), Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

26	NATIVE SPECIES
30	Total Species
4.3	NATIVE MEAN C
3.7	W/Adventives
21.8	NATIVE FQI
20.3	W/Adventives
-3.8	NATIVE MEAN W
-3.8	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	26	86.70%
Tree	0	0.00%
Shrub	1	3.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	17	56.70%
B-Forb	0	0.00%
A-Forb	2	6.70%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	5	16.70%
A-Sedge	1	3.30%
Fern	0	0.00%
<b>Adventive</b>	4	13.30%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	4	13.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 9a. Pine River (Saginaw Bay), Emergent Marsh, continued.**

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ASTPIL	1	<i>Aster pilosus</i>	2	FACU+	Nt P-Forb	HAIRY ASTER
BOLFLU	6	<i>Bolboschoenus fluviatilis</i>	-5	OBL	Nt P-Sedge	BULRUSH
CXBEBB	4	<i>Carex bebbii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	<i>Carex vulpinoidea</i>	-5	OBL	Nt P-Sedge	SEDGE
CYPDIA	5	<i>Cyperus diandrus</i>	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
GALTRD	6	<i>Galium trifidum</i>	-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
LEMMIN	5	<i>Lemna minor</i>	-5	OBL	Nt A-Forb	SMALL DUCKWEED
LYCAME	2	<i>Lycopus americanus</i>	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MYREXA	10	<i>Myriophyllum exalbescens</i>	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
MYRSPI	0	MYRIOPHYLLUM SPICATUM	-5	OBL	Ad P-Forb	EURASIAN WATER MILFOIL
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
PILPUM	5	<i>Pilea pumila</i>	-3	FACW	Nt A-Forb	CLEARWEED
POTRIC	5	<i>Potamogeton richardsonii</i>	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SPACHL	6	<i>Sparganium chlorocarpum</i>	-5	OBL	Nt P-Forb	GREEN FRUITED BUR REED
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
VALAME	7	<i>Vallisneria americana</i>	-5	OBL	Nt P-Forb	EEL GRASS

## Appendix 9b. Pine River (Saginaw Bay), Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

34 NATIVE SPECIES  
 41 Total Species  
 3.4 NATIVE MEAN C  
 2.8 W/Adventives  
 19.6 NATIVE FQI  
 17.8 W/Adventives  
 -2.9 NATIVE MEAN W  
 -2.3 W/Adventives  
 AVG: Fac. Wetland

<b>Native</b>	34	82.90%
Tree	1	2.40%
Shrub	3	7.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	16	39.00%
B-Forb	1	2.40%
A-Forb	2	4.90%
P-Grass	4	9.80%
A-Grass	0	0.00%
P-Sedge	6	14.60%
A-Sedge	1	2.40%
Fern	0	0.00%
<b>Adventive</b>	7	17.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	4	9.80%
B-Forb	1	2.40%
A-Forb	2	4.90%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%



**Appendix 9b. Pine River (Saginaw Bay) Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ANECAN	4	Anemone canadensis	-3	FACW	Nt P-Forb	CANADA ANEMONE
ASTLAT	2	Aster lateriflorus	-2	FACW-	Nt P-Forb	SIDE FLOWERING ASTER
ASTNOV	3	Aster novae-angliae	-3	FACW	Nt P-Forb	NEW ENGLAND ASTER
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CXHYST	2	Carex hystericina	-5	OBL	Nt P-Sedge	SEDGE
CXLACU	6	Carex lacustris	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	Carex vulpinoidea	-5	OBL	Nt P-Sedge	SEDGE
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPDIA	5	Cyperus diandrus	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPSTR	3	Cyperus strigosus	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MEDSAT	0	MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
PANCOL	7	Panicum columbianum	5	UPL	Nt P-Grass	PANIC GRASS
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
STATEN	5	Stachys tenuifolia	-5	OBL	Nt P-Forb	SMOOTH HEDGE NETTLE
THADIO	6	Thalictrum dioicum	2	FACU+	Nt P-Forb	EARLY MEADOW RUE
TRIARV	0	TRIFOLIUM ARVENSE	5	UPL	Ad A-Forb	RABBITFOOT CLOVER
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
URTDIO	1	Urtica dioica	-1	FAC+	Nt P-Forb	NETTLE
XANSTR	0	XANTHIUM STRUMARIUM	0	FAC	Ad A-Forb	COMMON COCKLEBUR

**Appendix 10a. Thomas Road, Emergent Marsh.**

By: Dennis Albert

FLORISTIC QUALITY DATA

8 NATIVE SPECIES  
9 Total Species  
3.6 NATIVE MEAN C  
3.2 W/Adventives  
10.3 NATIVE FQI  
9.7 W/Adventives  
-4.6 NATIVE MEAN W  
-4.7 W/Adventives  
AVG: Obl. Wetland

Native	8	88.90%
Tree	0	0.00%
Shrub	1	11.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	22.20%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	1	11.10%
A-Grass	0	0.00%
P-Sedge	4	44.40%
A-Sedge	0	0.00%
Fern	0	0.00%
Adventive	1	11.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	11.10%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 10a. Thomas Road, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
ELEELL	6	Eleocharis elliptica	-3	FACW	Nt P-Sedge	SPIKE RUSH
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 10b. Thomas Road, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

25	NATIVE SPECIES
29	Total Species
2.9	NATIVE MEAN C
2.5	W/Adventives
14.4	NATIVE FQI
13.4	W/Adventives
-3.3	NATIVE MEAN W
-2.8	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	25	86.20%
Tree	2	6.90%
Shrub	3	10.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	7	24.10%
B-Forb	1	3.40%
A-Forb	3	10.30%
P-Grass	4	13.80%
A-Grass	0	0.00%
P-Sedge	3	10.30%
A-Sedge	2	6.90%
Fern	0	0.00%

<b>Adventive</b>	4	13.80%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	6.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	2	6.90%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 10b. Thomas Road, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRGIG	0	AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
BIDCON	5	Bidens conatus	-5	OBL	Nt A-Forb	PURPLE STEMMED TICKSEED
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXHYST	2	Carex hystericina	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPDIA	5	Cyperus diandrus	-4	FACW+	Nt A-Sedge	UMBRELLA SEDGE
CYPSTR	3	Cyperus strigosus	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FIMAUT	6	Fimbristylis autumnalis	-4	FACW+	Nt A-Sedge	AUTUMN SEDGE
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POACOM	0	POA COMPRESSA	2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
POPTRE	1	Populus tremuloides	0	FAC	Nt Tree	QUAKING ASPEN
POTARE	0	POTENTILLA ARGENTEA	3	FACU	Ad P-Forb	SILVERY CINQUEFOIL
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 11a. Vanderbilt Park, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

21	NATIVE SPECIES
23	Total Species
3.6	NATIVE MEAN C
3.3	W/Adventives
16.4	NATIVE FQI
15.6	W/Adventives
-3.8	NATIVE MEAN W
-3.9	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	21	91.30%
Tree	1	4.30%
Shrub	1	4.30%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	9	39.10%
B-Forb	0	0.00%
A-Forb	2	8.70%
P-Grass	3	13.00%
A-Grass	0	0.00%
P-Sedge	4	17.40%
A-Sedge	1	4.30%
Fern	0	0.00%
<b>Adventive</b>	2	8.70%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	8.70%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 11a. Vanderbilt Park, Emergent Marsh, Continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
ERISTR	4	Erigeron strigosus	1	FAC-	Nt P-Forb	DAISY FLEABANE
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
FIMAUT	6	Fimbristylis autumnalis	-4	FACW+	Nt A-Sedge	AUTUMN SEDGE
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POPDEL	1	Populus deltoides	-1	FAC+	Nt Tree	COTTONWOOD
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
RORPAL	1	Rorippa palustris	-5	OBL	Nt A-Forb	YELLOW CRESS
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 11b. Vanderbilt Park, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

29	NATIVE SPECIES
35	Total Species
2.7	NATIVE MEAN C
2.2	W/Adventives
14.5	NATIVE FQI
13.2	W/Adventives
-3.4	NATIVE MEAN W
-2.7	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	29	82.90%
Tree	2	5.70%
Shrub	2	5.70%
W-Vine	1	2.90%
H-Vine	0	0.00%
P-Forb	13	37.10%
B-Forb	1	2.90%
A-Forb	5	14.30%
P-Grass	5	14.30%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%
Fern	0	0.00%

<b>Adventive</b>	6	17.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	8.60%
B-Forb	2	5.70%
A-Forb	1	2.90%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%



**Appendix 11b. Vanderbilt Park, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ASCINC	6	Asclepias incarnate	-5	OBL	Nt P-Forb	SWAMP MILKWEED
ASTLAT	2	Aster lateriflorus	-2	FACW-	Nt P-Forb	SIDE FLOWERING ASTER
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
ERISTR	4	Erigeron strigosus	1	FAC-	Nt P-Forb	DAISY FLEABANE
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
FRAPEN	2	Fraxinus pennsylvanica	-3	FACW	Nt Tree	RED ASH
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LACCAN	2	Lactuca Canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LEEORY	3	Leersia oryzoides	-5	OBL	Nt P-Grass	CUT GRASS
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POLLAP	0	Polygonum lapathifolium	-4	FACW+	Nt A-Forb	NODDING SMARTWEED
POPDEL	1	Populus deltoids	-1	FAC+	Nt Tree	COTTONWOOD
RORPAL	1	Rorippa palustris	-5	OBL	Nt A-Forb	YELLOW CRESS
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad P-Forb	BITTERSWEET NIGHTSHADE
SOLGIG	3	Solidago gigantean	-3	FACW	Nt P-Forb	LATE GOLDENROD
TEUCAN	4	Teucrium canadense	-2	FACW-	Nt P-Forb	WOOD SAGE
TRIARV	0	TRIFOLIUM ARVENSE	5	UPL	Ad A-Forb	RABBITFOOT CLOVER
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
VERHAS	4	Verbena hastate	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	3	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERBANK GRAPE

## Appendix 12a. Wildfowl Bay Ramp, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

18	NATIVE SPECIES
20	Total Species
3.5	NATIVE MEAN C
3.2	W/Adventives
14.8	NATIVE FQI
14.1	W/Adventives
-4.8	NATIVE MEAN W
-4.8	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	18	90.00%
Tree	0	0.00%
Shrub	1	5.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	11	55.00%
B-Forb	0	0.00%
A-Forb	1	5.00%
P-Grass	3	15.00%
A-Grass	0	0.00%
P-Sedge	2	10.00%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	2	10.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	10.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 12a. Wildfowl Bay Ramp, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ASTLAN	2	<i>Aster lanceolatus</i>	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
IRIVIR	5	<i>Iris virginica</i>	-5	OBL	Nt P-Forb	SOUTHERN BLUE FLAG
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LEMMIN	5	<i>Lemna minor</i>	-5	OBL	Nt A-Forb	SMALL DUCKWEED
LYTSAL	0	<i>LYTHRUM SALICARIA</i>	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SPACHL	6	<i>Sparganium chlorocarpum</i>	-5	OBL	Nt P-Forb	GREEN FRUITED BUR REED
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 12b. Wildfowl Bay Ramp, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

22	NATIVE SPECIES
26	Total Species
2.5	NATIVE MEAN C
2.1	W/Adventives
11.7	NATIVE FQI
10.8	W/Adventives
-3.3	NATIVE MEAN W
-2.8	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	22	84.60%
Tree	0	0.00%
Shrub	4	15.40%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	11	42.30%
B-Forb	1	3.80%
A-Forb	1	3.80%
P-Grass	2	7.70%
A-Grass	0	0.00%
P-Sedge	3	11.50%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	4	15.40%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	7.70%
B-Forb	2	7.70%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 12b. Wildfowl Bay Ramp, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ASTERI	3	<i>Aster ericoides</i>	4	FACU-	Nt P-Forb	HEATH ASTER
ASTLAN	2	<i>Aster lanceolatus</i>	-3	FACW	Nt P-Forb	EASTERN LINED ASTER
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALSEP	2	<i>Calystegia sepium</i>	0	FAC	Nt P-Forb	HEDGE BINDWEED
CXVULP	1	<i>Carex vulpinoidea</i>	-5	OBL	Nt P-Sedge	SEDGE
CORSTO	2	<i>Cornus stolonifera</i>	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
CYPSTR	3	<i>Cyperus strigosus</i>	-3	FACW	Nt P-Sedge	LONG SCALED NUT SEDGE
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
EPICOL	3	<i>Epilobium coloratum</i>	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPMAM	4	<i>Eupatorium maculatum</i>	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MELALB	0	MELILOTUS ALBA	3	FACU	Ad B-Forb	WHITE SWEET CLOVER
OENBIE	2	<i>Oenothera biennis</i>	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALERI	2	<i>Salix eriocephala</i>	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SPIALB	4	<i>Spiraea alba</i>	-4	FACW+	Nt Shrub	MEADOWSWEET
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
VERHAS	4	<i>Verbena hastata</i>	-4	FACW+	Nt P-Forb	BLUE VERVAIN

## Appendix 13a. Cedarville Creek, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

6	NATIVE SPECIES
6	Total Species
5.3	NATIVE MEAN C
5.3	W/Adventives
13.1	NATIVE FQI
13.1	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	6	100.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	4	66.70%
B-Forb	0	0.00%
A-Forb	1	16.70%
P-Grass	1	16.70%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%
Fern	0	0.00%

<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ELOCAN	1	Elodea canadensis	-5	OBL	Nt P-Forb	COMMON WATERWEED
LEEORY	3	Leersia oryzoides	-5	OBL	Nt P-Grass	CUT GRASS
LEMMIN	5	Lemna minor	-5	OBL	Nt A-Forb	SMALL DUCKWEED
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
POTOBT	10	Potamogeton obtusifolius	-5	OBL	Nt P-Forb	PONDWEED

**Table 13b. Cedarville Creek, Wet Meadow.**

By: Dennis Albert

**FLORISTIC QUALITY DATA**

28	NATIVE SPECIES
31	Total Species
4.7	NATIVE MEAN C
4.2	W/Adventives
24.8	NATIVE FQI
23.5	W/Adventives
-4.4	NATIVE MEAN W
-3.6	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	28	90.30%
Tree	0	0.00%
Shrub	4	12.90%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	14	45.20%
B-Forb	0	0.00%
A-Forb	3	9.70%
P-Grass	2	6.50%
A-Grass	0	0.00%
P-Sedge	4	12.90%
A-Sedge	0	0.00%
Fern	1	3.20%
<b>Adventive</b>	3	9.70%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	3.20%
B-Forb	1	3.20%
A-Forb	0	0.00%
P-Grass	1	3.20%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Table 13b. Cedarville Creek, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ACHMIL	1	Achillea millefolium	3	FACU	Nt P-Forb	YARROW
ACOCAL	6	Acorus calamus	-5	OBL	Nt P-Forb	SWEET FLAG
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXLACU	6	Carex lacustris	-5	OBL	Nt P-Sedge	SEDGE
CXLASI	8	Carex lasiocarpa	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CHRLEU	0	CHRYSANTHEMUM LEUCANTH.	5	UPL	Ad P-Forb	OX EYE DAISY
CIRVUL	0	CIRSIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
EQUFLU	7	Equisetum fluviatile	-5	OBL	Nt Fern Ally	WATER HORSETAIL
GALTRD	6	Galium trifidum	-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	TOUCH ME NOT
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
LATPAL	7	Lathyrus palustris	-3	FACW	Nt P-Forb	MARSH PEA
LEMMIN	5	Lemna minor	-5	OBL	Nt A-Forb	SMALL DUCKWEED
LYSTHY	6	Lysimachia thysiflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
MYRGAL	6	Myrica gale	-5	OBL	Nt Shrub	SWEET GALE
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POAPRA	0	POA PRATENSIS	1	FAC-	Ad P-Grass	KENT. BLUEGRASS
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
RANSCE	1	Ranunculus sceleratus	-5	OBL	Nt A-Forb	CURSED CROWFOOT
RUMORB	9	Rumex orbiculatus	-5	OBL	Nt P-Forb	GREAT WATER DOCK
SALCAN	9	Salix candida	-5	OBL	Nt Shrub	HOARY WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SALLUC	3	Salix lucida	-4	FACW+	Nt Shrub	SHINING WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAF CATTAIL



## Appendix 14a. Cedarville-Snows Rd., Emergent Marsh.

Community: Emergent Marsh

By: Dennis Albert

### FLORISTIC QUALITY DATA

18	NATIVE SPECIES
18	Total Species
5.7	NATIVE MEAN C
5.7	W/Adventives
24.3	NATIVE FQI
24.3	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	18	100.00%
Tree	0	0.00%
Shrub	1	5.60%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	12	66.70%
B-Forb	0	0.00%
A-Forb	1	5.60%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	4	22.20%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 14a. Cedarville-Snows Rd., Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
MYRHET	6	Myriophyllum heterophyllum	-5	OBL	Nt P-Forb	VARIOUS LEAVED WATER MILFOIL
NAJFLE	5	Najas flexilis	-5	OBL	Nt A-Forb	SLENDER NAIAD
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
PONCOR	8	Pontederia cordata	-5	OBL	Nt P-Forb	PICKEREL WEED
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTILL	5	Potamogeton illinoensis	-5	OBL	Nt P-Forb	ILLINOIS PONDWEED
SAGGRA	10	Sagittaria graminea	-5	OBL	Nt P-Forb	GRASS LEAVED ARROWHEAD
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	Schoenoplectus subterminalis	-5	OBL	Nt P-Sedge	BULRUSH
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP
SPAFLU	10	Sparganium fluctuans	-5	OBL	Nt P-Forb	BUR REED
UTRVUL	6	Utricularia vulgaris	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 14b. Cedarville-Snows Rd., Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

38	NATIVE SPECIES
42	Total Species
4.9	NATIVE MEAN C
4.5	W/Adventives
30.3	NATIVE FQI
28.9	W/Adventives
-4.6	NATIVE MEAN W
-4.2	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	38	90.50%
Tree	1	2.40%
Shrub	1	2.40%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	21	50.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	3	7.10%
A-Grass	0	0.00%
P-Sedge	12	28.60%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	4	9.50%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	4.80%
B-Forb	1	2.40%
A-Forb	0	0.00%
P-Grass	1	2.40%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 14b. Cedarville-Snows Rd., Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGRGIG	0	AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	Carex diandra	-5	OBL	Nt P-Sedge	SEDGE
CXLACU	6	Carex lacustris	-5	OBL	Nt P-Sedge	SEDGE
CXROST	10	Carex rostrata	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CICBUL	5	Cicuta bulbifera	-5	OBL	Nt P-Forb	WATER HEMLOCK
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPILEP	6	Epilobium leptophyllum	-5	OBL	Nt P-Forb	FEN WILLOW HERB
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
GLYBOR	6	Glyceria borealis	-5	OBL	Nt P-Grass	NORTH. MANNA GRASS
IRIVER	5	Iris versicolor	-5	OBL	Nt P-Forb	WILD BLUE FLAG
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	Juncus effusus	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
PONCOR	8	Pontederia cordata	-5	OBL	Nt P-Forb	PICKEREL WEED
POPBAL	2	Populus balsamifera	-3	FACW	Nt Tree	BALSAM POPLAR
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTNAT	5	Potamogeton natans	-5	OBL	Nt P-Forb	PONDWEED
RUMCRI	0	RUMEX CRISPUS	-1	FAC+	Ad P-Forb	CURLY DOCK
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	Schoenoplectus subterminalis	-5	OBL	Nt P-Sedge	BULRUSH
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SPACHL	6	Sparganium chlorocarpum	-5	OBL	Nt P-Forb	BUR REED
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 15a. Hessel Mill Pond, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

10	NATIVE SPECIES
10	Total Species
6.1	NATIVE MEAN C
6.1	W/Adventives
19.3	NATIVE FQI
19.3	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	10	100.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	5	50.00%
B-Forb	0	0.00%
A-Forb	1	10.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	4	40.00%
A-Sedge	0	0.00%
Fern	0	0.00%

<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
NAJFLE	5	Najas flexilis	-5	OBL	Nt A-Forb	SLENDER NAIAD
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTNAT	5	Potamogeton natans	-5	OBL	Nt P-Forb	PONDWEED
POTOBT	10	Potamogeton obtusifolius	-5	OBL	Nt P-Forb	PONDWEED
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
UTRVUL	6	Utricularia vulgaris	-5	OBL	Nt P-Forb	BLADDERWORT

## Appendix 15b. Hessel Mill Pond, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

34	NATIVE SPECIES
37	Total Species
4.9	NATIVE MEAN C
4.5	W/Adventives
28.3	NATIVE FQI
27.1	W/Adventives
-3.7	NATIVE MEAN W
-3.3	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	34	91.90%
Tree	0	0.00%
Shrub	3	8.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	13	35.10%
B-Forb	1	2.70%
A-Forb	0	0.00%
P-Grass	4	10.80%
A-Grass	0	0.00%
P-Sedge	13	35.10%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	3	8.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	8.10%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 15b. Hessel Mill Pond, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ACHMIL	1	<i>Achillea millefolium</i>	3	FACU	Nt P-Forb	YARROW
AGRHYE	4	<i>Agrostis hyemalis</i>	1	FAC-	Nt P-Grass	TICKLEGRASS
ALNRUG	5	<i>Alnus rugosa</i>	-5	OBL	Nt Shrub	TAG ALDER
ANECAN	4	<i>Anemone canadensis</i>	-3	FACW	Nt P-Forb	CANADA ANEMONE
ASTPUN	5	<i>Aster puniceus</i>	-5	OBL	Nt P-Forb	SWAMP ASTER
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	<i>Campanula aparinoides</i>	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	<i>Carex comosa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCryp	10	<i>Carex cryptolepis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	<i>Carex diandra</i>	-5	OBL	Nt P-Sedge	SEDGE
CXLASI	8	<i>Carex lasiocarpa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	<i>Carex viridula</i>	-5	OBL	Nt P-Sedge	SEDGE
CLAMAR	10	<i>Cladium mariscoides</i>	-5	OBL	Nt P-Sedge	TWIG RUSH
ELEQUI	10	<i>Eleocharis quinqueflora</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GOLDENROD
GLYBOR	6	<i>Glyceria borealis</i>	-5	OBL	Nt P-Grass	NORTHERN MANNA GRASS
HYPPER	0	HYPERICUM PERFORATUM	5	UPL	Ad P-Forb	COMMON ST. JOHN'S WORT
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	<i>Juncus effusus</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
LACBIE	2	<i>Lactuca biennis</i>	0	FAC	Nt B-Forb	TALL BLUE LETTUCE
LATPAL	7	<i>Lathyrus palustris</i>	-3	FACW	Nt P-Forb	MARSH PEA
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
SALBEB	1	<i>Salix bebbiana</i>	-4	FACW+	Nt Shrub	BEBB'S WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SCICYP	5	<i>Scirpus cyperinus</i>	-5	OBL	Nt P-Sedge	WOOL GRASS
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLRUG	3	<i>Solidago rugosa</i>	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
SPIALB	4	<i>Spiraea alba</i>	-4	FACW+	Nt Shrub	MEADOWSWEET
TANVUL	0	TANACETUM VULGARE	5	UPL	Ad P-Forb	GARDEN TANSY
TRIMAR	8	<i>Triglochin maritimum</i>	-5	OBL	Nt P-Forb	BOG ARROW GRASS
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL

## Appendix 16a. Hill Island, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
34	Total Species
5.1	NATIVE MEAN C
5	W/Adventives
29.4	NATIVE FQI
29	W/Adventives
-4.9	NATIVE MEAN W
-4.9	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	33	97.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	20	58.80%
B-Forb	0	0.00%
A-Forb	1	2.90%
P-Grass	4	11.80%
A-Grass	0	0.00%
P-Sedge	8	23.50%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	2.90%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	2.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%



**Appendix 16a. Hill Island, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	<i>Carex bebbii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	<i>Carex comosa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	<i>Carex cryptolepis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CICBUL	5	<i>Cicuta bulbifera</i>	-5	OBL	Nt P-Forb	WATER HEMLOCK
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
GLYBOR	6	<i>Glyceria borealis</i>	-5	OBL	Nt P-Grass	NORTH. MANNA GRASS
HIPVUL	10	<i>Hippuris vulgaris</i>	-5	OBL	Nt P-Forb	MARE'S TAIL
JUNBRE	8	<i>Juncus brevicaudatus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	<i>Juncus effusus</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
MIMRIN	5	<i>Mimulus ringens</i>	-5	OBL	Nt P-Forb	MONKEY FLOWER
MYREXA	10	<i>Myriophyllum exalbescens</i>	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
MYRSPI	0	MYRIOPHYLLUM SPICATUM	-5	OBL	Ad P-Forb	EURAS. WATER MILFOIL
NAJFLE	5	<i>Najas flexilis</i>	-5	OBL	Nt A-Forb	SLENDER NAIAD
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
PONCOR	8	<i>Pontederia cordata</i>	-5	OBL	Nt P-Forb	PICKEREL WEED
POTFOL	4	<i>Potamogeton foliosus</i>	-5	OBL	Nt P-Forb	LEAFY PONDWEED
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTILL	5	<i>Potamogeton illinoensis</i>	-5	OBL	Nt P-Forb	ILLINOIS PONDWEED
POTNAT	5	<i>Potamogeton natans</i>	-5	OBL	Nt P-Forb	PONDWEED
POTPUS	4	<i>Potamogeton pusillus</i>	-5	OBL	Nt P-Forb	SMALL PONDWEED
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	<i>Schoenoplectus subterminalis</i>	-5	OBL	Nt P-Sedge	BULRUSH
SCUGAL	5	<i>Scutellaria galericulata</i>	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SPACHL	6	<i>Sparganium chlorocarpum</i>	-5	OBL	Nt P-Forb	BUR REED
SPAEUR	5	<i>Sparganium eurycarpum</i>	-5	OBL	Nt P-Forb	COMMON BUR REED
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
UTRVUL	6	<i>Utricularia vulgaris</i>	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 16b. Hill Island, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

44	NATIVE SPECIES
47	Total Species
4.6	NATIVE MEAN C
4.3	W/Adventives
30.6	NATIVE FQI
29.6	W/Adventives
-3.9	NATIVE MEAN W
-3.4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	44	93.60%
Tree	3	6.40%
Shrub	1	2.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	22	46.80%
B-Forb	1	2.10%
A-Forb	1	2.10%
P-Grass	5	10.60%
A-Grass	0	0.00%
P-Sedge	9	19.10%
A-Sedge	0	0.00%
Fern	2	4.30%
<b>Adventive</b>	3	6.40%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	4.30%
B-Forb	1	2.10%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 16b. Hill Island, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ALNRUG	5	<i>Alnus rugosa</i>	-5	OBL	Nt Shrub	TAG ALDER
ASTPUN	5	<i>Aster puniceus</i>	-5	OBL	Nt P-Forb	SWAMP ASTER
BETPAP	2	<i>Betula papyrifera</i>	2	FACU+	Nt Tree	PAPER BIRCH
BROCIL	6	<i>Bromus ciliatus</i>	-3	FACW	Nt P-Grass	FRINGED BROME
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	<i>Campanula aparinoides</i>	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	<i>Carex bebbii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXBUXB	10	<i>Carex buxbaumii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	<i>Carex comosa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCryp	10	<i>Carex cryptolepis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXGARB	8	<i>Carex garberi</i>	-3	FACW	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CIRVUL	0	<i>CIRSIUM VULGARE</i>	4	FACU-	Ad B-Forb	BULL THISTLE
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EQUFLU	7	<i>Equisetum fluviatile</i>	-5	OBL	Nt Fern Ally	WATER HORSETAIL
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
GALTRD	6	<i>Galium trifidum</i>	-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
GLYBOR	6	<i>Glyceria borealis</i>	-5	OBL	Nt P-Grass	NORTH. MANNA GRASS
IMPCAP	2	<i>Impatiens capensis</i>	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
IRIVER	5	<i>Iris versicolor</i>	-5	OBL	Nt P-Forb	WILD BLUE FLAG
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	<i>Juncus canadensis</i>	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	<i>Juncus effusus</i>	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LACBIE	2	<i>Lactuca biennis</i>	0	FAC	Nt B-Forb	TALL BLUE LETTUCE
LARLAR	5	<i>Larix laricina</i>	-3	FACW	Nt Tree	TAMARACK
LATPAL	7	<i>Lathyrus palustris</i>	-3	FACW	Nt P-Forb	MARSH PEA
LYCUNI	2	<i>Lycopus uniflorus</i>	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	<i>Lysimachia thyrsoiflora</i>	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
NUPVAR	7	<i>Nuphar variegata</i>	-5	OBL	Nt P-Forb	YELLOW POND LILY
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	<i>Phragmites australis</i>	-4	FACW+	Nt P-Grass	REED
POLAMP	6	<i>Polygonum amphibium</i>	-5	OBL	Nt P-Forb	WATER SMARTWEED
POPBAL	2	<i>Populus balsamifera</i>	-3	FACW	Nt Tree	BALSAM POPLAR
POTANS	5	<i>Potentilla anserina</i>	-4	FACW+	Nt P-Forb	SILVERWEED
POTARE	0	<i>POTENTILLA ARGENTEA</i>	3	FACU	Ad P-Forb	SILVERY CINQUEFOIL
POTARU	8	<i>Potentilla arguta</i>	4	FACU-	Nt P-Forb	PRAIRIE CINQUEFOIL
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCUGAL	5	<i>Scutellaria galericulata</i>	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SPAEUR	5	<i>Sparganium eurycarpum</i>	-5	OBL	Nt P-Forb	COMMON BUR REED
TANVUL	0	<i>TANACETUM VULGARE</i>	5	UPL	Ad P-Forb	GARDEN TANSY
THEPAL	2	<i>Thelypteris palustris</i>	-4	FACW+	Nt Fern	MARSH FERN
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 17a. Mackinac Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

28	NATIVE SPECIES
28	Total Species
6.1	NATIVE MEAN C
6.1	W/Adventives
32.3	NATIVE FQI
32.3	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	28	100.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	19	67.90%
B-Forb	0	0.00%
A-Forb	1	3.60%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	8	28.60%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 17a. Mackinac Bay, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	Carex diandra	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
CICBUL	5	Cicuta bulbifera	-5	OBL	Nt P-Forb	WATER HEMLOCK
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELOCAN	1	Elodea canadensis	-5	OBL	Nt P-Forb	COMMON WATERWEED
HIPVUL	10	Hippuris vulgaris	-5	OBL	Nt P-Forb	MARE'S TAIL
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNART	3	Juncus articulatus	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LYSTHY	6	Lysimachia thyrsoiflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MYREXA	10	Myriophyllum exalbescens	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
NAJFLE	5	Najas flexilis	-5	OBL	Nt A-Forb	SLENDER NAIAD
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
NYMODO	6	Nymphaea odorata	-5	OBL	Nt P-Forb	WATERLILY
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTNAT	5	Potamogeton natans	-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	Potamogeton pectinatus	-5	OBL	Nt P-Forb	SAGO PONDWEED
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	Schoenoplectus subterminalis	-5	OBL	Nt P-Sedge	BULRUSH
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP
SPACHL	6	Sparganium chlorocarpum	-5	OBL	Nt P-Forb	GREEN FRUITED BUR REED
UTRINT	10	Utricularia intermedia	-5	OBL	Nt P-Forb	FLATLEAF BLADDERWORT
UTRMIN	10	Utricularia minor	-5	OBL	Nt P-Forb	SMALL BLADDERWORT
UTRVUL	6	Utricularia vulgaris	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 17b. Mackinac Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

42	NATIVE SPECIES
43	Total Species
5.7	NATIVE MEAN C
5.5	W/Adventives
36.7	NATIVE FQI
36.3	W/Adventives
-4.4	NATIVE MEAN W
-4.4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	42	97.70%
Tree	1	2.30%
Shrub	6	14.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	21	48.80%
B-Forb	0	0.00%
A-Forb	1	2.30%
P-Grass	2	4.70%
A-Grass	0	0.00%
P-Sedge	9	20.90%
A-Sedge	0	0.00%
Fern	2	4.70%
<b>Adventive</b>	1	2.30%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	2.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 17b. Mackinac Bay, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
ALNRUG	5	<i>Alnus rugosa</i>	-5	OBL	Nt Shrub	TAG ALDER
ASTPUN	5	<i>Aster puniceus</i>	-5	OBL	Nt P-Forb	SWAMP ASTER
BETPAP	2	<i>Betula papyrifera</i>	2	FACU+	Nt Tree	PAPER BIRCH
BIDCER	3	<i>Bidens cernuus</i>	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	<i>Campanula aparinoides</i>	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	<i>Carex comosa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	<i>Carex cryptolepis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	<i>Carex diandra</i>	-5	OBL	Nt P-Sedge	SEDGE
CXLACU	6	<i>Carex lacustris</i>	-5	OBL	Nt P-Sedge	SEDGE
CXLASI	8	<i>Carex lasiocarpa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EQUFLU	7	<i>Equisetum fluviatile</i>	-5	OBL	Nt Fern Ally	WATER HORSETAIL
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
GLYSTR	4	<i>Glyceria striata</i>	-5	OBL	Nt P-Grass	FOWL MANNA GRASS
IRIVER	5	<i>Iris versicolor</i>	-5	OBL	Nt P-Forb	WILD BLUE FLAG
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNART	3	<i>Juncus articulatus</i>	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNNOD	5	<i>Juncus nodosus</i>	-5	OBL	Nt P-Forb	JOINT RUSH
LATPAL	7	<i>Lathyrus palustris</i>	-3	FACW	Nt P-Forb	MARSH PEA
LOBKAL	10	<i>Lobelia kalmii</i>	-5	OBL	Nt P-Forb	BOG LOBELIA
LYCAME	2	<i>Lycopus americanus</i>	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	<i>Lycopus uniflorus</i>	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	<i>Lysimachia thyrsoiflora</i>	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MYRGAL	6	<i>Myrica gale</i>	-5	OBL	Nt Shrub	SWEET GALE
ONOSEN	2	<i>Onoclea sensibilis</i>	-3	FACW	Nt Fern	SENSITIVE FERN
POLAMP	6	<i>Polygonum amphibium</i>	-5	OBL	Nt P-Forb	WATER SMARTWEED
POTFRU	10	<i>Potentilla fruticosa</i>	-3	FACW	Nt Shrub	SHRUBBY CINQUEFOIL
POTPAL	7	<i>Potentilla palustris</i>	-5	OBL	Nt P-Forb	MARSH CINQUEFOIL
SALCAN	9	<i>Salix candida</i>	-5	OBL	Nt Shrub	HOARY WILLOW
SALSES	8	<i>Salix serissima</i>	-5	OBL	Nt Shrub	AUTUMN WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SPIALB	4	<i>Spiraea alba</i>	-4	FACW+	Nt Shrub	MEADOWSWEET
TRIFRA	6	<i>Triadenum fraseri</i>	-5	OBL	Nt P-Forb	MARSH ST. JOHN'S WORT
TRIMAR	8	<i>Triglochin maritimum</i>	-5	OBL	Nt P-Forb	BOG ARROW GRASS
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
UTRINT	10	<i>Utricularia intermedia</i>	-5	OBL	Nt P-Forb	FLATLEAF BLADDERWORT
UTRMIN	10	<i>Utricularia minor</i>	-5	OBL	Nt P-Forb	SMALL BLADDERWORT

## Appendix 18a. Mismer Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
33	Total Species
5.2	NATIVE MEAN C
5.2	W/Adventives
29.6	NATIVE FQI
29.6	W/Adventives
-4.4	NATIVE MEAN W
-4.4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	33	100.00%
Tree	1	3.00%
Shrub	1	3.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	17	51.50%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	2	6.10%
A-Grass	0	0.00%
P-Sedge	12	36.40%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%



**Appendix 18a. Mismar Bay, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	<i>Campanula aparinoides</i>	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	<i>Carex bebbii</i>	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	<i>Carex diandra</i>	-5	OBL	Nt P-Sedge	SEDGE
CXINTU	3	<i>Carex intumescens</i>	-4	FACW+	Nt P-Sedge	SEDGE
CXLASI	8	<i>Carex lasiocarpa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	<i>Carex viridula</i>	-5	OBL	Nt P-Sedge	SEDGE
CICBUL	5	<i>Cicuta bulbifera</i>	-5	OBL	Nt P-Forb	WATER HEMLOCK
ELEELL	6	<i>Eleocharis elliptica</i>	-3	FACW	Nt P-Sedge	SPIKE RUSH
ELEQUI	10	<i>Eleocharis quinqueflora</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
HIPVUL	10	<i>Hippuris vulgaris</i>	-5	OBL	Nt P-Forb	MARE'S TAIL
JUNALP	5	<i>Juncus alpinus</i>	-5	OBL	Nt P-Forb	RUSH
JUNART	3	<i>Juncus articulatus</i>	-5	OBL	Nt P-Forb	JOINTED RUSH
JUNDUD	1	<i>Juncus dudleyi</i>	0	FAC	Nt P-Forb	DUDLEY'S RUSH
LYCAME	2	<i>Lycopus americanus</i>	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYSTHY	6	<i>Lysimachia thysiflora</i>	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MIMRIN	5	<i>Mimulus ringens</i>	-5	OBL	Nt P-Forb	MONKEY FLOWER
MYREXA	10	<i>Myriophyllum exallescens</i>	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
PHAARU	0	<i>Phalaris arundinacea</i>	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	<i>Schoenoplectus subterminalis</i>	-5	OBL	Nt P-Sedge	BULRUSH
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
THUOCC	4	<i>Thuja occidentalis</i>	-3	FACW	Nt Tree	ARBOR VITAE
TRIMAR	8	<i>Triglochin maritimum</i>	-5	OBL	Nt P-Forb	BOG ARROW GRASS
UTRINT	10	<i>Utricularia intermedia</i>	-5	OBL	Nt P-Forb	FLATLEAF BLADDERWORT
UTRVUL	6	<i>Utricularia vulgaris</i>	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 18b. Mismer Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
33	Total Species
6.3	NATIVE MEAN C
6.3	W/Adventives
36.2	NATIVE FQI
36.2	W/Adventives
-4	NATIVE MEAN W
-4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	33	100.00%
Tree	1	3.00%
Shrub	3	9.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	12	36.40%
B-Forb	0	0.00%
A-Forb	2	6.10%
P-Grass	6	18.20%
A-Grass	0	0.00%
P-Sedge	9	27.30%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 18b. Mismar Bay, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGRTRA	8	Agropyron trachycaulum	0	FAC	Nt P-Grass	SLENDER WHEAT GRASS
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CALINE	8	Calamagrostis inexpansa	-4	FACW+	Nt P-Grass	BOG REEDGRASS
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBUXB	10	Carex buxbaumii	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXGARB	8	Carex garberi	-3	FACW	Nt P-Sedge	SEDGE
CXLASI	8	Carex lasiocarpa	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CASCOC	8	Castilleja coccinea	0	FAC	Nt A-Forb	INDIAN PAINTBRUSH
CLAMAR	10	Cladium mariscoides	-5	OBL	Nt P-Sedge	TWIG RUSH
ELEELL	6	Eleocharis elliptica	-3	FACW	Nt P-Sedge	SPIKE RUSH
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
GENPRO	8	Gentianopsis procera	-5	OBL	Nt A-Forb	SMALL FRINGED GENTIAN
IRIVER	5	Iris versicolor	-5	OBL	Nt P-Forb	WILD BLUE FLAG
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	Lysimachia thyrsoflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MYRGAL	6	Myrica gale	-5	OBL	Nt Shrub	SWEET GALE
PANLEI	10	Panicum leibergii	2	FACU+	Nt P-Grass	LEIBERG'S PANIC GRASS
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
PRIMIS	10	Primula mistassinica	-3	FACW	Nt P-Forb	CANADIAN PRIMROSE
SALCAN	9	Salix candida	-5	OBL	Nt Shrub	HOARY WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SPIALB	4	Spiraea alba	-4	FACW+	Nt Shrub	MEADOWSWEET
THUOCC	4	Thuja occidentalis	-3	FACW	Nt Tree	ARBOR VITAE
TRIFRA	6	Triadenum fraseri	-5	OBL	Nt P-Forb	MARSH ST. JOHN'S WORT
TRIMAR	8	Triglochin maritimum	-5	OBL	Nt P-Forb	BOG ARROW GRASS

## Appendix 19a. Moscoe Channel, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

32	NATIVE SPECIES
34	Total Species
5.7	NATIVE MEAN C
5.3	W/Adventives
32	NATIVE FQI
31	W/Adventives
-4.6	NATIVE MEAN W
-4.6	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	32	94.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	22	64.70%
B-Forb	0	0.00%
A-Forb	1	2.90%
P-Grass	1	2.90%
A-Grass	1	2.90%
P-Sedge	6	17.60%
A-Sedge	0	0.00%
Fern	1	2.90%
<b>Adventive</b>	2	5.90%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	5.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 19a. Moscoe Channel, Emergent Marsh, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICIL	3	Epilobium ciliatum	3	FACU	Nt P-Forb	WILLOW HERB
GALTRD	6	Galium trifidum	-4	FACW+	Nt P-Forb	SMALL BEDSTRAW
HIPVUL	10	Hippuris vulgaris	-5	OBL	Nt P-Forb	MARE'S TAIL
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	Juncus effusus	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	COMMON WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
MYREXA	10	Myriophyllum exalbescens	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
MYRHET	6	Myriophyllum heterophyllum	-5	OBL	Nt P-Forb	WATER MILFOIL
NAJFLE	5	Najas flexilis	-5	OBL	Nt A-Forb	SLENDER NAIAD
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
ONOSEN	2	Onoclea sensibilis	-3	FACW	Nt Fern	SENSITIVE FERN
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PONCOR	8	Pontederia cordata	-5	OBL	Nt P-Forb	PICKEREL WEED
POTCRI	0	POTAMOGETON CRISPUS	-5	OBL	Ad P-Forb	PONDWEED
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTNAT	5	Potamogeton natans	-5	OBL	Nt P-Forb	PONDWEED
POTPUS	4	Potamogeton pusillus	-5	OBL	Nt P-Forb	SMALL PONDWEED
POTRIC	5	Potamogeton richardsonii	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
SAGCUN	6	Sagittaria cuneata	-5	OBL	Nt P-Forb	ARUM LEAVED ARROWHEAD
SAGGRA	10	Sagittaria graminea	-5	OBL	Nt P-Forb	GRASS LEAVED ARROWHEAD
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	Schoenoplectus subterminalis	-5	OBL	Nt P-Sedge	BULRUSH
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
VALAME	7	Vallisneria americana	-5	OBL	Nt P-Forb	EEL GRASS
ZIZAQU	9	Zizania aquatica var. aquatica	-5	OBL	Nt A-Grass	WILD RICE

## Appendix 19b. Moscoe Channel, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

45	NATIVE SPECIES
51	Total Species
4.1	NATIVE MEAN C
3.6	W/Adventives
27.7	NATIVE FQI
26	W/Adventives
-4	NATIVE MEAN W
-3.3	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	45	88.20%
Tree	2	3.90%
Shrub	1	2.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	27	52.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	4	7.80%
A-Grass	0	0.00%
P-Sedge	9	17.60%
A-Sedge	0	0.00%
Fern	2	3.90%
<b>Adventive</b>	6	11.80%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	5.90%
B-Forb	1	2.00%
A-Forb	0	0.00%
P-Grass	2	3.90%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 19b. Moscoe Channel, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGRGIG	0	AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	Campanula aparinoidea	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXDIAN	8	Carex diandra	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	Carex vulpinoidea	-5	OBL	Nt P-Sedge	SEDGE
CHRLAU	0	CHRYSANTHEMUM LEUCANTHEMUM	5	UPL	Ad P-Forb	OX EYE DAISY
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICIL	3	Epilobium ciliatum	3	FACU	Nt P-Forb	WILLOW HERB
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EQUARV	0	Equisetum arvense	0	FAC	Nt Fern Ally	COMMON HORSETAIL
EQUFLU	7	Equisetum fluviatile	-5	OBL	Nt Fern Ally	WATER HORSETAIL
ERISTR	4	Erigeron strigosus	1	FAC-	Nt P-Forb	DAISY FLEABANE
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GOLDENROD
FRAPEN	2	Fraxinus pennsylvanica	-3	FACW	Nt Tree	RED ASH
GLYBOR	6	Glyceria borealis	-5	OBL	Nt P-Grass	NORTHERN MANNA GRASS
HYPMAJ	4	Hypericum majus	-3	FACW	Nt P-Forb	CANADA ST. JOHN'S WORT
IRIVER	5	Iris versicolor	-5	OBL	Nt P-Forb	WILD BLUE FLAG
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNEFF	3	Juncus effusus	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LATPAL	7	Lathyrus palustris	-3	FACW	Nt P-Forb	MARSH PEA
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	Lysimachia thyrsiflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
NUPVAR	7	Nuphar variegata	-5	OBL	Nt P-Forb	YELLOW POND LILY
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
PLAMAJ	0	PLANTAGO MAJOR	-1	FAC+	Ad P-Forb	COMMON PLANTAIN
POACOM	0	POA COMPRESSA	2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
PONCOR	8	Pontederia cordata	-5	OBL	Nt P-Forb	PICKEREL WEED
POPBAL	2	Populus balsamifera	-3	FACW	Nt Tree	BALSAM POPLAR
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCUGAL	5	Scutellaria galericulata	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SONARV	0	SONCHUS ARVENSIS	1	FAC-	Ad P-Forb	PERENNIAL SOW THISTLE
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 20a. Pine River Mackinac, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

38	NATIVE SPECIES
42	Total Species
4.8	NATIVE MEAN C
4.3	W/Adventives
29.5	NATIVE FQI
28.1	W/Adventives
-4.6	NATIVE MEAN W
-4.5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	38	90.50%
Tree	0	0.00%
Shrub	1	2.40%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	18	42.90%
B-Forb	1	2.40%
A-Forb	1	2.40%
P-Grass	5	11.90%
A-Grass	0	0.00%
P-Sedge	12	28.60%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	4	9.50%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	3	7.10%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	1	2.40%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%



**Appendix 20a. Pine River Mackinac, Emergent Marsh, continued.**

ACRONYM	C	SCIENTIFIC NAME	W	WETNES		PHYSIOGNOMY	COMMON NAME
				S			
AGRGIG	0	AGROSTIS GIGANTEA	0	FAC		Ad P-Grass	REDTOP
AGRHYE	4	Agrostis hyemalis	1	FAC-		Nt P-Grass	TICKLEGRASS
ALIPLA	1	Alisma plantago-aquatica	-5	OBL		Nt P-Forb	WATER PLANTAIN
ASCINC	6	Asclepias incarnata	-5	OBL		Nt P-Forb	SWAMP MILKWEED
ASTBOR	9	Aster borealis	-5	OBL		Nt P-Forb	NORTHERN BOG ASTER
BIDCER	3	Bidens cernuus	-5	OBL		Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL		Nt P-Grass	BLUE JOINT GRASS
CALINE	8	Calamagrostis inexpansa	-4	FACW+		Nt P-Grass	BOG REEDGRASS
CXAQUA	7	Carex aquatilis	-5	OBL		Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL		Nt P-Sedge	SEDGE
CXLACU	6	Carex lacustris	-5	OBL		Nt P-Sedge	SEDGE
	1						
CXROST	0	Carex rostrata	-5	OBL		Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL		Nt P-Sedge	SEDGE
CICBUL	5	Cicuta bulbifera	-5	OBL		Nt P-Forb	WATER HEMLOCK
CICMAC	4	Cicuta maculata	-5	OBL		Nt B-Forb	WATER HEMLOCK
ELESMA	5	Eleocharis smallii	-5	OBL		Nt P-Sedge	SPIKE RUSH
EPICOL	3	Epilobium coloratum	-5	OBL		Nt P-Forb	CINNAMON WILLOW HERB
EUPPER	4	Eupatorium perfoliatum	-4	FACW+		Nt P-Forb	COMMON BONESET
JUNALP	5	Juncus alpinus	-5	OBL		Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL		Nt P-Forb	RUSH
JUNEFF	3	Juncus effusus	-5	OBL		Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL		Nt P-Forb	JOINT RUSH
LEEORY	3	Leersia oryzoides	-5	OBL		Nt P-Grass	CUT GRASS
LYCUNI	2	Lycopus uniflorus	-5	OBL		Nt P-Forb	NORTHERN BUGLE WEED
MIMRIN	5	Mimulus ringens	-5	OBL		Nt P-Forb	MONKEY FLOWER
	1						
MUHGLO	0	Muhlenbergia glomerata	-4	FACW+		Nt P-Grass	MARSH WILD TIMOTHY
MYOSCO	0	MYOSOTIS SCORPIOIDES	-5	OBL		Ad P-Forb	FORGET ME NOT
POTCRI	0	POTAMOGETON CRISPUS	-5	OBL		Ad P-Forb	PONDWEED
POTGRM	5	Potamogeton gramineus	-5	OBL		Nt P-Forb	PONDWEED
SAGLAT	1	Sagittaria latifolia	-5	OBL		Nt P-Forb	COMMON ARROWHEAD
SALERI	2	Salix eriocephala	-3	FACW		Nt Shrub	WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL		Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	Schoenoplectus pungens	-5	OBL		Nt P-Sedge	THREE SQUARE
SCHSUB	8	Schoenoplectus subterminalis	-5	OBL		Nt P-Sedge	BULRUSH
		Schoenoplectus					
SCHTAB	4	tabernaemontani	-5	OBL		Nt P-Sedge	SOFTSTEM BULRUSH
SCIATR	3	Scirpus atrovirens	-5	OBL		Nt P-Sedge	BULRUSH
SCICYP	5	Scirpus cyperinus	-5	OBL		Nt P-Sedge	WOOL GRASS
SIUSUA	5	Sium suave	-5	OBL		Nt P-Forb	WATER PARSNIP
TEUCAN	4	Teucrium canadense	-2	FACW-		Nt P-Forb	WOOD SAGE
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL		Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	Typha latifolia	-5	OBL		Nt P-Forb	BROAD LEAVED CATTAIL
	1						
UTRINT	0	Utricularia intermedia	-5	OBL		Nt P-Forb	FLAT LEAF BLADDERWORT

## Appendix 20b. Pine River Mackinac, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

56	NATIVE SPECIES
59	Total Species
4.3	NATIVE MEAN C
4	W/Adventives
31.8	NATIVE FQI
31	W/Adventives
-3.2	NATIVE MEAN W
-3.1	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	56	94.90%
Tree	2	3.40%
Shrub	3	5.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	28	47.50%
B-Forb	2	3.40%
A-Forb	3	5.10%
P-Grass	4	6.80%
A-Grass	0	0.00%
P-Sedge	14	23.70%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	3	5.10%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	2	3.40%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	1	1.70%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

## Appendix 20b. Pine River Mackinac, Wet Meadow.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRGIG	0	AGROSTIS GIGANTEA	0	FAC	Ad P-Grass	REDTOP
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ALNRUG	5	Alnus rugosa	-5	OBL	Nt Shrub	TAG ALDER
ANECAN	4	Anemone canadensis	-3	FACW	Nt P-Forb	CANADA ANEMONE
ASCSYR	1	Asclepias syriaca	5	UPL	Nt P-Forb	COMMON MILKWEED
ASTBOR	9	Aster borealis	-5	OBL	Nt P-Forb	NORTHERN BOG ASTER
ASTERI	3	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
ASTUMB	5	Aster umbellatus	-3	FACW	Nt P-Forb	FLAT TOP WHITE ASTER
BETPAP	2	Betula papyrifera	2	FACU+	Nt Tree	PAPER BIRCH
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXHYST	2	Carex hystericina	-5	OBL	Nt P-Sedge	SEDGE
CXROST	10	Carex rostrata	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	Carex vulpinoidea	-5	OBL	Nt P-Sedge	SEDGE
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GOLDENROD
FRAAME	5	Fraxinus americana	3	FACU	Nt Tree	WHITE ASH
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNEFF	3	Juncus effusus	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LOBKAL	10	Lobelia kalmii	-5	OBL	Nt P-Forb	BOG LOBELIA
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	Lysimachia thyrsiflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MEDSAT	0	MEDICAGO SATIVA	5	UPL	Ad P-Forb	ALFALFA
MUHGLO	10	Muhlenbergia glomerata	-4	FACW+	Nt P-Grass	MARSH WILD TIMOTHY
MYOSCO	0	MYOSOTIS SCORPIOIDES	-5	OBL	Ad P-Forb	FORGET ME NOT
OENBIE	2	Oenothera biennis	3	FACU	Nt B-Forb	EVENING PRIMROSE
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SCICYP	5	Scirpus cyperinus	-5	OBL	Nt P-Sedge	WOOL GRASS
SIUSUA	5	Sium suave	-5	OBL	Nt P-Forb	WATER PARSNIP

**Appendix 20b. Pine River Mackinac, Wet Meadow, continued.**

SOLALT	1	<i>Solidago altissima</i>	3	FACU	Nt P-Forb	TALL GOLDENROD
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
TEUCAN	4	<i>Teucrium canadense</i>	-2	FACW-	Nt P-Forb	WOOD SAGE
THADIO	6	<i>Thalictrum dioicum</i>	2	FACU+	Nt P-Forb	EARLY MEADOW RUE
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
UTRINT	10	<i>Utricularia intermedia</i>	-5	OBL	Nt P-Forb	FLAT LEAF BLADDERWORT

## Appendix 21a. Prentiss Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

20	NATIVE SPECIES
21	Total Species
5.8	NATIVE MEAN C
5.6	W/Adventives
26.2	NATIVE FQI
25.5	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	20	95.20%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	16	76.20%
B-Forb	0	0.00%
A-Forb	1	4.80%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	3	14.30%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	4.80%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	4.80%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 21a. Prentiss Bay, Emergent Marsh.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ELESMA	5	<i>Eleocharis smallii</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
MYREXA	10	<i>Myriophyllum exalbescens</i>	-5	OBL	Nt P-Forb	SPIKED WATER MILFOIL
NAJFLE	5	<i>Najas flexilis</i>	-5	OBL	Nt A-Forb	SLENDER NAIAD
NUPVAR	7	<i>Nuphar variegata</i>	-5	OBL	Nt P-Forb	YELLOW POND LILY
NYMODO	6	<i>Nymphaea odorata</i>	-5	OBL	Nt P-Forb	WATERLILY
PONCOR	8	<i>Pontederia cordata</i>	-5	OBL	Nt P-Forb	PICKEREL WEED
POTGRM	5	<i>Potamogeton gramineus</i>	-5	OBL	Nt P-Forb	PONDWEED
POTNAT	5	<i>Potamogeton natans</i>	-5	OBL	Nt P-Forb	PONDWEED
POTPEC	3	<i>Potamogeton pectinatus</i>	-5	OBL	Nt P-Forb	SAGO PONDWEED
POTRIC	5	<i>Potamogeton richardsonii</i>	-5	OBL	Nt P-Forb	RICHARDSON'S PONDWEED
SAGGRA	10	<i>Sagittaria graminea</i>	-5	OBL	Nt P-Forb	ARROWHEAD
SAGLAT	1	<i>Sagittaria latifolia</i>	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHSUB	8	<i>Schoenoplectus subterminalis</i>	-5	OBL	Nt P-Sedge	BULRUSH
SIUSUA	5	<i>Sium suave</i>	-5	OBL	Nt P-Forb	WATER PARSNIP
SPACHL	6	<i>Sparganium chlorocarpum</i>	-5	OBL	Nt P-Forb	GREEN FRUITED BUR REED
TRIFRA	6	<i>Triadenum fraseri</i>	-5	OBL	Nt P-Forb	MARSH ST. JOHN'S WORT
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	<i>Typha latifolia</i>	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL
UTRINT	10	<i>Utricularia intermedia</i>	-5	OBL	Nt P-Forb	FLAT LEAF BLADDERWORT
UTRVUL	6	<i>Utricularia vulgaris</i>	-5	OBL	Nt P-Forb	GREAT BLADDERWORT

## Appendix 21b. Prentiss Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

30	NATIVE SPECIES
30	Total Species
5.9	NATIVE MEAN C
5.9	W/Adventives
32.5	NATIVE FQI
32.5	W/Adventives
-4.1	NATIVE MEAN W
-4.1	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	30	100.00%
Tree	2	6.70%
Shrub	2	6.70%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	16	53.30%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	3	10.00%
A-Grass	0	0.00%
P-Sedge	5	16.70%
A-Sedge	0	0.00%
Fern	2	6.70%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

## Appendix 21b. Prentiss Bay, Wet Meadow.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGRHYE	4	<i>Agrostis hyemalis</i>	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTLON	9	<i>Aster longifolius</i>	-2	FACW-	Nt P-Forb	LONG LEAVED ASTER
ASTUMB	5	<i>Aster umbellatus</i>	-3	FACW	Nt P-Forb	FLAT TOP WHITE ASTER
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CAMAPR	7	<i>Campanula aparinoides</i>	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXLASI	8	<i>Carex lasiocarpa</i>	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	<i>Carex stricta</i>	-5	OBL	Nt P-Sedge	SEDGE
CLAMAR	10	<i>Cladium mariscoides</i>	-5	OBL	Nt P-Sedge	TWIG RUSH
EQUFLU	7	<i>Equisetum fluviatile</i>	-5	OBL	Nt Fern Ally	WATER HORSETAIL
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GOLDENROD
IRIVER	5	<i>Iris versicolor</i>	-5	OBL	Nt P-Forb	WILD BLUE FLAG
LARLAR	5	<i>Larix laricina</i>	-3	FACW	Nt Tree	TAMARACK
LATPAL	7	<i>Lathyrus palustris</i>	-3	FACW	Nt P-Forb	MARSH PEA
LYCUNI	2	<i>Lycopus uniflorus</i>	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	<i>Lysimachia thyrsoiflora</i>	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	<i>Mentha arvensis</i>	-3	FACW	Nt P-Forb	WILD MINT
MUHGLA	10	<i>Muhlenbergia glomerata</i>	-4	FACW+	Nt P-Grass	MARSH WILD TIMOTHY
MYRGAL	6	<i>Myrica gale</i>	-5	OBL	Nt Shrub	SWEET GALE
PICMAR	6	<i>Picea mariana</i>	-3	FACW	Nt Tree	BLACK SPRUCE
POLAMP	6	<i>Polygonum amphibium</i>	-5	OBL	Nt P-Forb	WATER SMARTWEED
PONCOR	8	<i>Pontederia cordata</i>	-5	OBL	Nt P-Forb	PICKEREL WEED
POTFRU	10	<i>Potentilla fruticosa</i>	-3	FACW	Nt Shrub	SHRUBBY CINQUEFOIL
POTPAL	7	<i>Potentilla palustris</i>	-5	OBL	Nt P-Forb	MARSH CINQUEFOIL
SCHACU	5	<i>Schoenoplectus acutus</i>	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCUGAL	5	<i>Scutellaria galericulata</i>	-5	OBL	Nt P-Forb	COMMON SKULLCAP
SOLULI	4	<i>Solidago uliginosa</i>	-5	OBL	Nt P-Forb	BOG GOLDENROD
THEPAL	2	<i>Thelypteris palustris</i>	-4	FACW+	Nt Fern	MARSH FERN
TRIFRA	6	<i>Triadenum fraseri</i>	-5	OBL	Nt P-Forb	MARSH ST. JOHN'S WORT
TRIMAR	8	<i>Triglochin maritimum</i>	-5	OBL	Nt P-Forb	BOG ARROW GRASS



## Appendix 22a. Search Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

1	NATIVE SPECIES
1	Total Species
5	NATIVE MEAN C
5	W/Adventives
5	NATIVE FQI
5	W/Adventives
-5	NATIVE MEAN W
-5	W/Adventives
AVG:	Obl. Wetland

<b>Native</b>	1	100.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	1	100.00%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	0	0.00%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH

## Appendix 22b. Search Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

27	NATIVE SPECIES
28	Total Species
4.6	NATIVE MEAN C
4.4	W/Adventives
23.7	NATIVE FQI
23.2	W/Adventives
-2.9	NATIVE MEAN W
-2.6	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	27	96.40%
Tree	0	0.00%
Shrub	2	7.10%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	17	60.70%
B-Forb	0	0.00%
A-Forb	2	7.10%
P-Grass	3	10.70%
A-Grass	0	0.00%
P-Sedge	2	7.10%
A-Sedge	0	0.00%
Fern	1	3.60%
<b>Adventive</b>	1	3.60%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	0	0.00%
B-Forb	1	3.60%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

## Appendix 22b. Search Bay, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ASCINC	6	Asclepias incarnata	-5	OBL	Nt P-Forb	SWAMP MILKWEED
ASTBOR	9	Aster borealis	-5	OBL	Nt P-Forb	NORTHERN BOG ASTER
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CORLAN	8	Coreopsis lanceolata	3	FACU	Nt P-Forb	SAND COREOPSIS
EPIANG	3	Epilobium angustifolium	0	FAC	Nt P-Forb	FIREWEED
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
ERISTR	4	Erigeron strigosus	1	FAC-	Nt P-Forb	DAISY FLEABANE
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GOLDENROD
GENPRO	8	Gentianopsis procera	-5	OBL	Nt A-Forb	SMALL FRINGED GENTIAN
HYPKAL	10	Hypericum kalmianum	-2	FACW-	Nt Shrub	KALM'S ST. JOHN'S WORT
IMPCAP	2	Impatiens capensis	-3	FACW	Nt A-Forb	SPOTTED TOUCH ME NOT
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNDUD	1	Juncus dudleyi	0	FAC	Nt P-Forb	DUDLEY'S RUSH
LOBKAL	10	Lobelia kalmii	-5	OBL	Nt P-Forb	BOG LOBELIA
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
ONOSEN	2	Onoclea sensibilis	-3	FACW	Nt Fern	SENSITIVE FERN
PHAARU	0	Phalaris arundinacea	-4	FACW+	Nt P-Grass	REED CANARY GRASS
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
PRIMIS	10	Primula mistassinica	-3	FACW	Nt P-Forb	CANADIAN PRIMROSE
RUBSTR	2	Rubus strigosus	-2	FACW-	Nt Shrub	WILD RED RASPBERRY
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD

## Appendix 23a. Squaw Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

42	NATIVE SPECIES
44	Total Species
4.4	NATIVE MEAN C
4.2	W/Adventives
28.5	NATIVE FQI
27.9	W/Adventives
-4.2	NATIVE MEAN W
-4	W/Adventives
AVG:	Fac. Wetland (+)

<b>Native</b>	42	95.50%
Tree	2	4.50%
Shrub	2	4.50%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	16	36.40%
B-Forb	0	0.00%
A-Forb	3	6.80%
P-Grass	5	11.40%
A-Grass	0	0.00%
P-Sedge	12	27.30%
A-Sedge	1	2.30%
Fern	1	2.30%
<b>Adventive</b>	2	4.50%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	2.30%
B-Forb	1	2.30%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 23a. Squaw Bay, Emergent Marsh, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
BETPAP	2	Betula papyrifera	2	FACU+	Nt Tree	PAPER BIRCH
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CALINE	8	Calamagrostis inexpansa	-4	FACW+	Nt P-Grass	BOG REEDGRASS
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBEBB	4	Carex bebbii	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXHYST	2	Carex hystericina	-5	OBL	Nt P-Sedge	SEDGE
CXVULP	1	Carex vulpinoidea	-5	OBL	Nt P-Sedge	SEDGE
CHACAL	8	Chamaedaphne calyculata	-5	OBL	Nt Shrub	LEATHERLEAF
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
ELEACI	7	Eleocharis acicularis	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELEELL	6	Eleocharis elliptica	-3	FACW	Nt P-Sedge	GOLDEN SEEDED SPIKE RUSH
ELEOBT	3	Eleocharis obtusa	-5	OBL	Nt A-Sedge	SPIKE RUSH
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPICOL	3	Epilobium coloratum	-5	OBL	Nt P-Forb	CINNAMON WILLOW HERB
EPILEP	6	Epilobium leptophyllum	-5	OBL	Nt P-Forb	FEN WILLOW HERB
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GRASS LEAVED GOLDENROD
GALPAL	3	Galium palustre	-5	OBL	Nt P-Forb	MARSH BEDSTRAW
GLYSTR	4	Glyceria striata	-5	OBL	Nt P-Grass	FOWL MANNA GRASS
HYPMAJ	4	Hypericum majus	-3	FACW	Nt P-Forb	CANADA ST. JOHN'S WORT
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNBRE	8	Juncus brevicaudatus	-5	OBL	Nt P-Forb	RUSH
JUNEFF	3	Juncus effusus	-5	OBL	Nt P-Forb	SOFT STEMMED RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LEEORY	3	Leersia oryzoides	-5	OBL	Nt P-Grass	CUT GRASS
NYMODO	6	Nymphaea odorata	-5	OBL	Nt P-Forb	SWEET SCENTED WATERLILY
ONOSEN	2	Onoclea sensibilis	-3	FACW	Nt Fern	SENSITIVE FERN
POPBAL	2	Populus balsamifera	-3	FACW	Nt Tree	BALSAM POPLAR
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
RORPAL	1	Rorippa palustris	-5	OBL	Nt A-Forb	YELLOW CRESS
SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALMYR	9	Salix myricoides	-3	FACW	Nt Shrub	BLUELEAF WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SCICYP	5	Scirpus cyperinus	-5	OBL	Nt P-Sedge	WOOL GRASS
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
SPACHL	6	Sparganium chlorocarpum	-5	OBL	Nt P-Forb	GREEN FRUITED BUR REED
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD LEAVED CATTAIL

## Appendix 23b. Squaw Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

68	NATIVE SPECIES
75	Total Species
4.6	NATIVE MEAN C
4.1	W/Adventives
37.7	NATIVE FQI
35.9	W/Adventives
-3.2	NATIVE MEAN W
-2.8	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	68	90.70%
Tree	2	2.70%
Shrub	10	13.30%
W-Vine	1	1.30%
H-Vine	0	0.00%
P-Forb	30	40.00%
B-Forb	2	2.70%
A-Forb	3	4.00%
P-Grass	8	10.70%
A-Grass	0	0.00%
P-Sedge	10	13.30%
A-Sedge	0	0.00%
Fern	2	2.70%
<b>Adventive</b>	7	9.30%
Tree	1	1.30%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	1.30%
B-Forb	4	5.30%
A-Forb	0	0.00%
P-Grass	1	1.30%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

**Appendix 23b. Squaw Bay, Wet Meadow, continued.**

<b>ACRONYM</b>	<b>C</b>	<b>SCIENTIFIC NAME</b>	<b>W</b>	<b>WETNESS</b>	<b>PHYSIOGNOMY</b>	<b>COMMON NAME</b>
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ALNRUG	5	Alnus rugosa	-5	OBL	Nt Shrub	TAG ALDER
ARTCAM	5	Artemisia campestris	0	FAC	Nt B-Forb	WORMWOOD
ASCINC	6	Asclepias incarnata	-5	OBL	Nt P-Forb	SWAMP MILKWEED
ASTBOR	9	Aster borealis	-5	OBL	Nt P-Forb	NORTHERN BOG ASTER
ASTERI	3	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTPUN	5	Aster puniceus	-5	OBL	Nt P-Forb	SWAMP ASTER
ASTUMB	5	Aster umbellatus	-3	FACW	Nt P-Forb	FLAT TOP WHITE ASTER
BIDCER	3	Bidens cernuus	-5	OBL	Nt A-Forb	NODDING BUR MARIGOLD
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CALINE	8	Calamagrostis inexpansa	-4	FACW+	Nt P-Grass	BOG REEDGRASS
CALLON	10	Calamovilfa longifolia	5	UPL	Nt P-Grass	SAND REED GRASS
CAMAPR	7	Campanula aparinoides	-5	OBL	Nt P-Forb	MARSH BELLFLOWER
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXCOMO	5	Carex comosa	-5	OBL	Nt P-Sedge	SEDGE
CXSTRI	4	Carex stricta	-5	OBL	Nt P-Sedge	SEDGE
CXVIRI	4	Carex viridula	-5	OBL	Nt P-Sedge	SEDGE
CENMAU	0	CENTAUREA MACULOSA	5	UPL	Ad B-Forb	SPOTTED BLUET
CIRPAL	0	CIRSIUM PALUSTRE	-4	FACW+	Ad B-Forb	MARSH THISTLE
CIRVUL	0	CIRSIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CONCAN	0	Conyza canadensis	1	FAC-	Nt A-Forb	HORSEWEED
CORSTO	2	Cornus stolonifera	-3	FACW	Nt Shrub	RED OSIER DOGWOOD
ELEELL	6	Eleocharis elliptica	-3	FACW	Nt P-Sedge	SPIKE RUSH
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELESMA	5	Eleocharis smallii	-5	OBL	Nt P-Sedge	SPIKE RUSH
EPILEP	6	Epilobium leptophyllum	-5	OBL	Nt P-Forb	FEN WILLOW HERB
EQUHYE	2	Equisetum hyemale	-2	FACW-	Nt Fern Ally	SCOURING RUSH
EUPMAM	4	Eupatorium maculatum	-5	OBL	Nt P-Forb	JOE PYE WEED
EUPPER	4	Eupatorium perfoliatum	-4	FACW+	Nt P-Forb	COMMON BONESET
FRAAME	5	Fraxinus americana	3	FACU	Nt Tree	WHITE ASH
GLYSTR	4	Glyceria striata	-5	OBL	Nt P-Grass	FOWL MANNA GRASS
HYPKAL	10	Hypericum kalmianum	-2	FACW-	Nt Shrub	KALM'S ST. JOHN'S WORT
JUNALP	5	Juncus alpinus	-5	OBL	Nt P-Forb	RUSH
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
JUNCAN	6	Juncus canadensis	-5	OBL	Nt P-Forb	CANADIAN RUSH
JUNNOD	5	Juncus nodosus	-5	OBL	Nt P-Forb	JOINT RUSH
LACCAN	2	Lactuca canadensis	2	FACU+	Nt B-Forb	TALL LETTUCE
LATPAL	7	Lathyrus palustris	-3	FACW	Nt P-Forb	MARSH PEA
LOBKAL	10	Lobelia kalmii	-5	OBL	Nt P-Forb	BOG LOBELIA
LYCAME	2	Lycopus americanus	-5	OBL	Nt P-Forb	WATER HOREHOUND
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYSTHY	6	Lysimachia thyrsiflora	-5	OBL	Nt P-Forb	TUFTED LOOSESTRIFE
MENARV	3	Mentha arvensis	-3	FACW	Nt P-Forb	WILD MINT
MYRGAL	6	Myrica gale	-5	OBL	Nt Shrub	SWEET GALE
PANIMP	3	Panicum implicatum	0	FAC	Nt P-Grass	PANIC GRASS
PHRAUS	0	Phragmites australis	-4	FACW+	Nt P-Grass	REED
POACOM	0	POA COMPRESSA	2	FACU+	Ad P-Grass	CANADA BLUEGRASS
POLAMP	6	Polygonum amphibium	-5	OBL	Nt P-Forb	WATER SMARTWEED
POLCIL	3	Polygonum cilinode	5	UPL	Nt P-Forb	FALSE BUCKWHEAT
POTGRM	5	Potamogeton gramineus	-5	OBL	Nt P-Forb	PONDWEED
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
POTPAL	7	Potentilla palustris	-5	OBL	Nt P-Forb	MARSH CINQUEFOIL
RORPAL	1	Rorippa palustris	-5	OBL	Nt A-Forb	YELLOW CRESS
RUBSTR	2	Rubus strigosus	-2	FACW-	Nt Shrub	WILD RED RASPBERRY
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK EYED SUSAN

**Appendix 23b. Squaw Bay, Wet Meadow, continued.**

SAGLAT	1	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALCAN	9	Salix candida	-5	OBL	Nt Shrub	HOARY WILLOW
SALERI	2	Salix eriocephala	-3	FACW	Nt Shrub	WILLOW
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SALFRA	0	SALIX FRAGILIS	-1	FAC+	Ad Tree	CRACK WILLOW
SALMYR	9	Salix myricoides	-3	FACW	Nt Shrub	BLUELEAF WILLOW
SCHACU	5	Schoenoplectus acutus	-5	OBL	Nt P-Sedge	HARDSTEM BULRUSH
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SPAPEC	5	Spartina pectinata	-4	FACW+	Nt P-Grass	CORDGRASS
SPIALB	4	Spiraea alba	-4	FACW+	Nt Shrub	MEADOWSWEET
TEUCAN	4	Teucrium canadense	-2	FACW-	Nt P-Forb	WOOD SAGE
THEPAL	2	Thelypteris palustris	-4	FACW+	Nt Fern	MARSH FERN
THUOCC	4	Thuja occidentalis	-3	FACW	Nt Tree	ARBOR VITAE
TRIFRA	6	Triadenum fraseri	-5	OBL	Nt P-Forb	MARSH ST. JOHN'S WORT
TYPANG	0	TYPHA ANGUSTIFOLIA	-5	OBL	Ad P-Forb	NARROW LEAVED CATTAIL
VERTHA	0	VERBASCUM THAPSUS	5	UPL	Ad B-Forb	COMMON MULLEIN
VERHAS	4	Verbena hastata	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	3	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERBANK GRAPE



## Appendix 24a. Whitefish Bay, Emergent Marsh.

By: Dennis Albert

### FLORISTIC QUALITY DATA

33	NATIVE SPECIES
34	Total Species
6.5	NATIVE MEAN C
6.3	W/Adventives
37.3	NATIVE FQI
36.7	W/Adventives
-3.1	NATIVE MEAN W
-3.2	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	33	97.10%
Tree	1	2.90%
Shrub	1	2.90%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	15	44.10%
B-Forb	0	0.00%
A-Forb	1	2.90%
P-Grass	6	17.60%
A-Grass	0	0.00%
P-Sedge	9	26.50%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	1	2.90%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	2.90%
B-Forb	0	0.00%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

### Appendix 24a. Whitefish Bay, Emergent Marsh, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
AGAPUR	7	<i>Agalinis purpurea</i>	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	<i>Agrostis hyemalis</i>	1	FAC-	Nt P-Grass	TICKLEGRASS
ASTBOR	9	<i>Aster borealis</i>	-5	OBL	Nt P-Forb	NORTHERN BOG ASTER
ASTERI	3	<i>Aster ericoides</i>	4	FACU-	Nt P-Forb	HEATH ASTER
ASTUMB	5	<i>Aster umbellatus</i>	-3	FACW	Nt P-Forb	FLAT TOP WHITE ASTER
BROCIL	6	<i>Bromus ciliatus</i>	-3	FACW	Nt P-Grass	FRINGED BROME
CALCAN	3	<i>Calamagrostis canadensis</i>	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CALINE	8	<i>Calamagrostis inexpansa</i>	-4	FACW+	Nt P-Grass	BOG REEDGRASS
CXAQUA	7	<i>Carex aquatilis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXCryp	10	<i>Carex cryptolepis</i>	-5	OBL	Nt P-Sedge	SEDGE
CXEBUR	7	<i>Carex eburnea</i>	4	FACU-	Nt P-Sedge	SEDGE
CLAMAR	10	<i>Cladium mariscoides</i>	-5	OBL	Nt P-Sedge	TWIG RUSH
ELEQUI	10	<i>Eleocharis quinqueflora</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELEROS	10	<i>Eleocharis rostellata</i>	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPPER	4	<i>Eupatorium perfoliatum</i>	-4	FACW+	Nt P-Forb	COMMON BONESET
EUTGRA	3	<i>Euthamia graminifolia</i>	-2	FACW-	Nt P-Forb	GOLDENROD
JUNBAL	4	<i>Juncus balticus</i>	-5	OBL	Nt P-Forb	RUSH
LYCUNI	2	<i>Lycopus uniflorus</i>	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYTSAL	0	<i>LYTHRUM SALICARIA</i>	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MUHGL0	10	<i>Muhlenbergia glomerata</i>	-4	FACW+	Nt P-Grass	MARSH WILD TIMOTHY
PANLEI	10	<i>Panicum leibergii</i>	2	FACU+	Nt P-Grass	LEIBERG'S PANIC GRASS
PARGLA	8	<i>Parnassia glauca</i>	-5	OBL	Nt P-Forb	GRASS OF PARNASSUS
POTANS	5	<i>Potentilla anserina</i>	-4	FACW+	Nt P-Forb	SILVERWEED
POTFRU	10	<i>Potentilla fruticosa</i>	-3	FACW	Nt Shrub	SHRUBBY CINQUEFOIL
PRIMIS	10	<i>Primula mistassinica</i>	-3	FACW	Nt P-Forb	CANADIAN PRIMROSE
RHYALB	6	<i>Rhynchospora alba</i>	-5	OBL	Nt P-Sedge	BEAK RUSH
SCHPUN	5	<i>Schoenoplectus pungens</i>	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	<i>Schoenoplectus tabernaemontani</i>	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SOLCAN	1	<i>Solidago canadensis</i>	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLOHI	8	<i>Solidago ohioensis</i>	-5	OBL	Nt P-Forb	OHIO GOLDENROD
SOLRUG	3	<i>Solidago rugosa</i>	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
THUOCC	4	<i>Thuja occidentalis</i>	-3	FACW	Nt Tree	ARBOR VITAE
TOFGLU	10	<i>Tofieldia glutinosa</i>	-5	OBL	Nt P-Forb	FALSE ASPHODEL
TRIMAR	8	<i>Triglochin maritimum</i>	-5	OBL	Nt P-Forb	BOG ARROW GRASS

## Appendix 24b. Whitefish Bay, Wet Meadow.

By: Dennis Albert

### FLORISTIC QUALITY DATA

43	NATIVE SPECIES
46	Total Species
6.3	NATIVE MEAN C
5.9	W/Adventives
41.3	NATIVE FQI
40	W/Adventives
-2.6	NATIVE MEAN W
-2.3	W/Adventives
AVG:	Fac. Wetland

<b>Native</b>	43	93.50%
Tree	2	4.30%
Shrub	1	2.20%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	20	43.50%
B-Forb	0	0.00%
A-Forb	2	4.30%
P-Grass	8	17.40%
A-Grass	0	0.00%
P-Sedge	10	21.70%
A-Sedge	0	0.00%
Fern	0	0.00%
<b>Adventive</b>	3	6.50%
Tree	0	0.00%
Shrub	0	0.00%
W-Vine	0	0.00%
H-Vine	0	0.00%
P-Forb	1	2.20%
B-Forb	2	4.30%
A-Forb	0	0.00%
P-Grass	0	0.00%
A-Grass	0	0.00%
P-Sedge	0	0.00%
A-Sedge	0	0.00%

## Appendix 24b. Whitefish Bay, Wet Meadow, continued.

ACRONYM	C	SCIENTIFIC NAME	W	WETNESS	PHYSIOGNOMY	COMMON NAME
ACHMIL	1	Achillea millefolium	3	FACU	Nt P-Forb	YARROW
AGAPUR	7	Agalinis purpurea	-3	FACW	Nt A-Forb	PURPLE GERARDIA
AGRHYE	4	Agrostis hyemalis	1	FAC-	Nt P-Grass	TICKLEGRASS
ANDSCO	5	Andropogon scoparius	3	FACU	Nt P-Grass	LITTLE BLUESTEM GRASS
ASTBOR	9	Aster borealis	-5	OBL	Nt P-Forb	NORTHERN BOG ASTER
ASTERI	3	Aster ericoides	4	FACU-	Nt P-Forb	HEATH ASTER
ASTUMB	5	Aster umbellatus	-3	FACW	Nt P-Forb	FLAT TOP WHITE ASTER
BROCIL	6	Bromus ciliatus	-3	FACW	Nt P-Grass	FRINGED BROME
CALCAN	3	Calamagrostis canadensis	-5	OBL	Nt P-Grass	BLUE JOINT GRASS
CALINE	8	Calamagrostis inexpansa	-4	FACW+	Nt P-Grass	BOG REEDGRASS
CXAQUA	7	Carex aquatilis	-5	OBL	Nt P-Sedge	SEDGE
CXBUXB	10	Carex buxbaumii	-5	OBL	Nt P-Sedge	SEDGE
CXCRYP	10	Carex cryptolepis	-5	OBL	Nt P-Sedge	SEDGE
CXEBUR	7	Carex eburnea	4	FACU-	Nt P-Sedge	SEDGE
CIRVUL	0	CIRSIIUM VULGARE	4	FACU-	Ad B-Forb	BULL THISTLE
CLAMAR	10	Cladium mariscoides	-5	OBL	Nt P-Sedge	TWIG RUSH
DAUCAR	0	DAUCUS CAROTA	5	UPL	Ad B-Forb	QUEEN ANNE'S LACE
ELEQUI	10	Eleocharis quinqueflora	-5	OBL	Nt P-Sedge	SPIKE RUSH
ELEROS	10	Eleocharis rostellata	-5	OBL	Nt P-Sedge	SPIKE RUSH
EUPCOR	4	Euphorbia corollata	5	UPL	Nt P-Forb	FLOWERING SPURGE
EUTGRA	3	Euthamia graminifolia	-2	FACW-	Nt P-Forb	GOLDENROD
FRAVIR	2	Fragaria virginiana	1	FAC-	Nt P-Forb	WILD STRAWBERRY
GENPRO	8	Gentianopsis procera	-5	OBL	Nt A-Forb	SMALL FRINGED GENTIAN
GLYSTR	4	Glyceria striata	-5	OBL	Nt P-Grass	FOWL MANNA GRASS
JUNBAL	4	Juncus balticus	-5	OBL	Nt P-Forb	RUSH
LOBKAL	10	Lobelia kalmii	-5	OBL	Nt P-Forb	BOG LOBELIA
LYCUNI	2	Lycopus uniflorus	-5	OBL	Nt P-Forb	NORTHERN BUGLE WEED
LYTSAL	0	LYTHRUM SALICARIA	-5	OBL	Ad P-Forb	PURPLE LOOSESTRIFE
MUHGL0	10	Muhlenbergia glomerata	-4	FACW+	Nt P-Grass	MARSH WILD TIMOTHY
PANLEI	10	Panicum leibergii	2	FACU+	Nt P-Grass	LEIBERG'S PANIC GRASS
PARGLA	8	Parnassia glauca	-5	OBL	Nt P-Forb	GRASS OF PARNASSUS
PICMAR	6	Picea mariana	-3	FACW	Nt Tree	BLACK SPRUCE
POTANS	5	Potentilla anserina	-4	FACW+	Nt P-Forb	SILVERWEED
POTFRU	10	Potentilla fruticosa	-3	FACW	Nt Shrub	SHRUBBY CINQUEFOIL
PRIMIS	10	Primula mistassinica	-3	FACW	Nt P-Forb	CANADIAN PRIMROSE
RHYALB	6	Rhynchospora alba	-5	OBL	Nt P-Sedge	BEAK RUSH
RUDHIR	1	Rudbeckia hirta	3	FACU	Nt P-Forb	BLACK EYED SUSAN
SCHPUN	5	Schoenoplectus pungens	-5	OBL	Nt P-Sedge	THREE SQUARE
SCHTAB	4	Schoenoplectus tabernaemontani	-5	OBL	Nt P-Sedge	SOFTSTEM BULRUSH
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLOHI	8	Solidago ohioensis	-5	OBL	Nt P-Forb	OHIO GOLDENROD
SOLRUG	3	Solidago rugosa	-1	FAC+	Nt P-Forb	ROUGH GOLDENROD
SPIROM	10	Spiranthes romanzoffiana	-4	FACW+	Nt P-Forb	HOODED LADIES' TRESSES
THUOCC	4	Thuja occidentalis	-3	FACW	Nt Tree	ARBOR VITAE
TOFGLU	10	Tofieldia glutinosa	-5	OBL	Nt P-Forb	FALSE ASPHODEL
TRIMAR	8	Triglochin maritimum	-5	OBL	Nt P-Forb	BOG ARROW GRASS