NES ECOLOGICAL SERVICES
A Division of Robert E. Lee & Associates, Inc.
1250 Centennial Centre Blvd. • Hobart, WI 54155
Serving Wisconsin, Michigan, Minnesota and Illinois

Lower Menominee River Area of Concern
South Channel Restoration Project
Great Lakes Restoration Initiative Grant
Grant/Project No. GL-00E01568

Prepared for

City of Marinette
1905 Hall Avenue
Marinette, Wisconsin 54143
Project No. 13775005

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Project Overview

NES Ecological Services (NES) – A Division of Robert E. Lee and Associates, Inc. (REL), was contracted by the City of Marinette to provide vegetation monitoring services at South Channel located in Sections 5 & 8, T30N, R24E, City of Marinette, Marinette County, Wisconsin (Figure 1). The City began restoration at South Channel as part of a Great Lakes Restoration Initiative (GLRI) Grant to restore the Lower Menominee River Area of Concern (AOC). In the summer of 2016 NES/REL finalized a Restoration Plan for the Harbor and the Quality Assurance Project Plan (QAPP) was signed in September 2016. The Project area is approximately 21.37 acres in size and is designed to encompass (Figure 2):

- 1.75 acres of Aquatic Submergent/Emergent Restoration
- 2.13 acres of 2017 Mapped Aquatic Submergent/Emergent Restoration
- 2.69 acres of Cattail Marsh Enhancement (not evaluated in monitoring)
- 2.43 acres of Mesic Forest Restoration
- 0.83 acres of Mesic Prairie Planting
- 9.94 acres of Northern Sedge Meadow (0.72 acres of Northern Sedge Meadow Enhancement, 2.47 acres of Northern Sedge Meadow Enhancement (Standing Water), 2.71 acres of Northern Sedge Meadow Restoration, 1.25 acres of Northern Sedge Meadow Restoration (Standing Water))
- 0.45 acres of Open Water (not evaluated in monitoring)
- 2.59 acres of Shrub-Carr (0.21 acres of Shrub-Carr Upland Planting, 1.18 acres of Shrub-Carr Wetland Restoration, 1.20 acres of Tag Alder Enhancement)
- 0.75 acres of Wet Mesic Forested Wetland (0.31 acres of Wet Mesic Forested Wetland Enhancement, 0.44 acres of Wet Mesic Forested Wetland Restoration)
- 0.60 acres of Wet Mesic Prairie Planting

NES ecologists conducted the second year of monitoring on June 21st & 25th and August 22nd & 23rd. An additional trip was made on December 10th to survey the microhabitat structures (bat houses, great blue heron nesting platform, osprey nesting platform, screech owl nest boxes, tree swallow/eastern bluebird boxes & wood duck boxes). The completion and submittal of this monitoring report (Year 2), satisfies the requirements outlined in the (QAPP). Report submittals are required for three consecutive post-construction growing seasons.

Goals, Objectives & Performance Standards

Goals

The purpose of the South Channel Habitat Improvement ecological restoration is to restore native vegetation and habitat within a degraded wetland complex. This relates to the goals of the *2013 Fish and Wildlife Population and Habitat Management* and *Restoration Plan Update for the Lower Menominee River Area Concern*. The achievement of the goals outlined in that plan would mean conditions have improved such that the BUIs of degradation of fish and wildlife populations and the loss of fish and wildlife habitat will no longer be applicable within the AOC. The goals include:

- Provide shallow water, emergent vegetation areas suitable for the spawning requirements of native fish species including northern pike (*Esox lucius*) and muskellunge (*Esox masquinongy*).
- Provide foraging and loafing opportunities for native amphibians, reptiles, waterfowl, and other water birds.

- Provide additional flow and improved fish passage at Ogden Street Bridge.
- Contribute towards the achievement of restoration goals and objectives found within the Lower Menominee River Area of Concern Fish and Wildlife Population and Habitat Management and Restoration Plan (2013) by implementing the final design and specifications provided by the United States Fish & Wildlife Services (USFWS).

Objectives

In support of these goals, the objectives and related target criteria of this restoration are as follows:

1. Restore benthic habitats for use by invertebrates and native fish species which historically utilize the South Channel.
    a) Install fish sticks, log structures, lunker structures, pike spawning channel, woody debris and rock structures to increase cover and feeding opportunities.
    b) Establish populations of emergent native vegetation in the channel.
    c) Eliminate and control invasive species within emergent aquatic communities, while establishing native plants to provide spawning habitat.

2. Establish healthy and diverse native vegetation communities
    a) Restore/create community types found to be high priority communities within the Northern Lake Michigan Coastal Ecological Landscape.
    b) Install a variety of ferns, grasses, sedges, forbs, shrubs and trees currently and historically found within Marinette County.
    c) Increase plant diversity by adding a few species typically found more often within southern Wisconsin to account for temperature increases due to global climate shifts.
    d) Absolute cover of invasive species will be < 15% within each community type.

3. Restore wetland and upland habitat for use by invertebrates, amphibians, reptiles, mammals and birds.
    a) Native vegetation capable of providing a variety of food and cover will be established throughout the restored/created communities.
    b) Existing snags will be left and protected to provide food sources and potential future nesting sites.
    c) Rock and brush piles will be added to provide cover.
    d) Downed woody debris will be placed in the emergent aquatic and wet meadow communities to provide sites for loafing and basking.
    e) Nesting boxes and platforms will be installed to increase suitable nesting sites.
    f) Bat houses will be erected to provide roosting sites.

Over the course of the monitoring period it is expected that site functions will improve in all of the above categories. In addition to the habitat benefits towards removing BUIs in the AOC, the project presents opportunities for public outreach, education, recreation, beautification, and connectivity with other nearby restoration projects. As a result of achieving the restoration objectives, the project will also increase wetland functional values significantly.

This project is being conducted as one of the multiple projects concurrently happening within this Area of Concern. The overall goal is to delist the AOC.

Ecological Performance Standards

Performance standards are the measures utilized to determine whether desired objectives regarding the overall mitigation goal have been met. Post-construction monitoring activities are performed throughout the duration of a project to evaluate progress toward achieving the functional objectives. The below performance standards in Table 1, as outlined in the approved QAPP, will be used to verify the success of the Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet Mesic Forested Wetland and Wet Mesic Prairie Communities.

Table 1. Status of Ecological Performance Standard Achievement

Ecological Performance Standards (PS) For Year One	PS Achievement 2017	2018	2019	Monitoring Results			Discussion of Monitoring Results/Trends
Except in the far eastern Mesic Forest stand, aerial coverage of invasive, nonnative species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >10% absolute cover after one year, and will not be >5% absolute cover after two and three years.	Y	Y	--	**Invasive, non-native species**	**% Cover**	**% Relative Cover**	The five main invasive species of concern currently have <5% total coverage within the project area.
				Giant reed grass	0.5	0.28	
				Reed canary grass	1.88	1.06	
				Japanese knotweed	0	0	
				Purple loosestrife	0.75	0.42	
				Garlic mustard	0.75	0.42	
Aerial coverage of garlic mustard will not be >75% absolute cover after one year, >50% absolute cover after two years, and >25% absolute cover after three years within the far eastern Mesic Forest stand.	IP	Y	--	Garlic mustard has an absolute cover of 15%.			The amount of garlic mustard in the far eastern Mesic Forest does not exceed the 50% standard for year 2 or the 25% standard for year three. Prior to herbicide treatments in 2018 there was greater coverage of garlic mustard rosettes. Herbicide treatments have proven to be very successful but will need to diligently continued in order to successfully deplete the seed bank and prevent re-establishment.
After one year, >75% of the vegetative cover within the restoration site will be native species, <25% of the cover will be invasive, non-native species. After two years, >80% of the vegetative cover within the restoration site will be native species, <20% of the cover will be invasive, non-native species. After three years, >85% of the vegetative cover within the restoration site will be native, non-invasive species, <15% of the cover will be invasive, non-native species.	Y	Y	--	Native vegetative cover was 82.68% and non-native vegetative coverage was 17.32%.			This performance standard was met by having greater than 80% native species coverage and less than 20% non-native species coverage.
Eighty percent of the site will be vegetated within one year. Eighty-five percent of the site will be vegetated within two years. Ninety percent of the site will be vegetated within three years.	Y	Y	--	Sum of average percent cover across the site = 177.50%			Based on the sum of average percent cover across all communities this criterion has been met. The lowest percent cover across all communities was the Aquatic Submergent/Emergent Restoration Community at 123% cover. Otherwise all communities had 125% or greater cover.
90% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation, 80% two years after installation, and 75% three years after installation.	NA	NA	--	Monitoring was not performed; but, visual observations suggest this performance standard is on track to be met or come very close to the standard goal.			Installed woody species have struggled in the areas that were more impacted by rising water levels (mainly the eastern shrub-carr restoration zone). However, the majority of the planting zones seem to have a high rate of survival. A survival survey will be conducted during the 2019 field season to determine the final rate of survival.
The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present	Y	Y	--	There were 33 native, non-invasive species.			Performance standard was met.
The 2017 Mapped Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.	Y	N	--	There were 15 native, non-invasive species.			This community appeared to continue shifting to more of a submergent community in the 2018 growing season. Although there were only 15 native species in 2018, that is out of a total of 17 species identified, meaning there were only 2 non-native species. Due to water depths this community lost several plant species since the 2017 field season.
The Mesic Forest, Mesic Prairie*, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet Mesic Forested Wetland and Wet Mesic Prairie* Communities shall each have a minimum of 20 native, non-invasive species present after one year, 25 native, non-invasive species present after two years and 30 native, non-invasive species present after three years. **The Mesic Prairie and Wet Mesic Prairie were not evaluated in this standard due to these communities having separate requirements listed in the performance standard below.*	Y	Y	--	**Community**	**Number of Native, Non-invasive species**		Planted species along with naturally occurring species allowed this performance standard to be met in all communities.
				Mesic Forest	64		
				Northern Sedge Meadow	79		
				Shrub-Carr (Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder)	67		
				Wet Mesic Forested Wetland	68		

NA = Not Applicable IP = In Progress P = Performance Standard is Partially Met Y = Performance Standard is Met N = Performance Standard is Not Met

Table 1. Status of Ecological Performance Standard Achievement (continued).

<table>
<tr><th rowspan="2">Ecological Performance Standards (PS) For Year One</th><th colspan="3">PS Achievement</th><th colspan="4">Monitoring Results</th><th>Discussion of Monitoring Results/Trends</th></tr>
<tr><th>2016</th><th>2017</th><th>2018</th><th colspan="4"></th><th></th></tr>
<tr><td>The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 15 native, non-invasive species present after one year, 20 native, non-invasive species present after two years, and 25 native, non-invasive species present after three years.</td><td>Y</td><td>Y</td><td>--</td><td colspan="3">Community | Number of Native, Non-invasive Species
Mesic Prairie | 35
Wet Mesic Prairie | 35</td><td>Both communities currently meet this performance standard.</td></tr>
<tr><td>To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be >20 and >3.5, respectively, after one year, >22 and >3.8, respectively, after two years, and >25 and >4.0, respectively, after year three . FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.</td><td>P</td><td>P</td><td>--</td><td colspan="3">Community | FQI | Mean C
Mesic Forest | 22.66 | 2.11
Mesic Prairie | 11.00 | 1.29
Northern Sedge Meadow | 29.66 | 2.92
Shrub-Carr (Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder) | 26.09 | 2.65
Wet Mesic Forested Wetland | 28.32 | 2.91
Wet Mesic Prairie | 14.13 | 1.77
Aquatic Submergent/Emergent | 25.31 | 4.11
2017 Mapped Aquatic Submergent/Emergent | 15.52 | 3.76</td><td>All communities with the exception of the Mesic Prairie, Wet Mesic Prairie and 2017 Mapped Aquatic Submergent/Emergent have met the performance standard of having an FQI greater than 22. Only the Aquatic Submergent/Emergent community met the standard of having an FQI greater than 3.8. These communities are still in the earlier stages of development and should trend upwards in the upcoming growing season.</td></tr>
<tr><td>Twenty-one of the forty-two nesting and roosting structures shall be utilized or occupied annually by year three.</td><td>IP</td><td>IP</td><td>--</td><td colspan="3">19 of the 42 nesting and roosting structures are currently being used within the site.</td><td>This standard should be met by the end of the third growing season with only needing 3 additional active structures.</td></tr>
<tr><td>Twenty avian species, five species of reptiles and amphibians, and five mammal species will be recorded, either through direct observation, calls or sign left by the species, utilizing the site after three years.</td><td>IP</td><td>IP</td><td>--</td><td colspan="3"> | 2017 | 2018 | 2019
Avian | 9 | 19 | --
Herptiles | 4 | 3 | --
Mammals | 1 | 2 | --</td><td>This standard does not need to be evaluated until Year 3, but it is currently on track to be met.</td></tr>
</table>

NA = Not Applicable IP = In Progress P = Performance Standard is Partially Met Y = Performance Standard is Met

Summary Data

Methods

Vegetation/Floristic Diversity

Meander surveys (Figure 3) were conducted within the project area to gather a representative sample of the floristic diversity of each plant community. Surveys were completed in June and August to compile a list of plant species and their associated coverages found within each community. A comprehensive species list of the entire site can be found in Appendix A.

NES utilized the timed-meander sampling protocol for vegetation monitoring developed by the Wisconsin Department of Natural Resources (Appendix B). On June 21st and August 22nd & 23rd timed meanders were conducted in the Aquatic Submergent/Emergent Restoration, Mesic Forest Restoration, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr, Wet Mesic Forested Wetland, and Wet Mesic Prairie.

Due to the increase in water levels from 2016 to 2017, the Northern Sedge Meadow Restoration (Standing Water) in the western portion of the project area had too much water to support a sedge meadow community. Therefore NES re-categorized this area as 2017 Mapped Aquatic Submergent/Emergent and evaluated the community using the Aquatic Submergent/Emergent Restoration Community performance standards.

Results

Vegetation/Floristic Diversity

A list of species found during the meander surveys and a summary of each community type can be found in Appendix A. These data were used to compute the information reported in Table 2 below. A total of 219 plant species were recorded during the 2018 surveys.

Photos (Appendix C) documenting existing site conditions within each community type were taken throughout the site (Figure 3).

Table 2. Vegetation Data Summary.

Community	# Total Species	# Native Species	FQI	Mean C	% Native Coverage	% Invasive Species Coverage
Mesic Forest	115	64	22.66	2.11	78.42	21.58
Wet Mesic Forest	95	68	28.32	2.91	84.65	15.35
Wet Mesic Prairie	64	35	14.13	1.77	73.60	26.40
Aquatic Submergent/Emergent Restoration	38	33	25.31	4.11	95.12	4.88

Table 2. Continued.

Community	# Total Species	# Native Species	FQI	Mean C	% Native Coverage	% Invasive Species Coverage
2017 Mapped Aquatic Submergent/ Emergent Restoration	17	15	15.52	3.76	98.90	1.10
Shrub Carr	97	67	26.09	2.65	80.95	19.05
Mesic Prairie	73	35	11.00	1.29	70.44	29.56
Northern Sedge Meadow	103	79	29.66	2.92	82.72	17.28
Entire Site	**219**	**155**	**43.59**	**2.95**	**82.68**	**17.32**

Native Species Dominance

All communities had native species coverage greater than 80% except the Mesic Forest and Mesic & Wet Mesic Prairies. Native species coverage in the Mesic and Wet Mesic Prairie was 70.44 & 73.60, respectively. All communities had greater than 25 native species except for the 2017 Mapped Aquatic Submergent/Emergent Restoration community, which had 15 native species. All communities except the 2017 Mapped Submergent/Emergent, Mesic and Wet Mesic Prairie had an FQI greater than 22, but only the Aquatic Submergent/Emergent Restoration had a Mean C greater than 3.8. All dominant species in the Wet Mesic Forest (8 native), Aquatic Submergent/Emergent (3 native) and 2017 Mapped Aquatic Submergent/Emergent (2 native) were native while the Mesic Forest (1 non-native, 9 native), Wet Mesic Prairie (4 non-native, 18 native), Shrub-Carr (3 non-native, 18 native), Mesic Prairie (1 non-native, 9 native) and Northern Sedge Meadow (3 non-native, 28 native) contained a mix of both native and non-native species. Table 3 contains a list of dominant species found within the South Channel communities. Additional information pertaining to the percent areal coverage of native and invasive species can be found in the community summary data (Appendix A).

Table 3. Plant Species Dominance.

Community Type	**Dominant Species**
Mesic Forest	*Acer negundo*
	Alliaria petiolata
	Ascelpias syriaca
	Fraxinus pennsylvanica
	Elymus virginicus
	Populus balsamifera
	Conyza canadensis
	Populus deltoides
	Salix nigra
	Thuja occidentalis
Wet Mesic Forest	*Acer negundo*
	Acer saccharinum
	Calamagrostis canadensis
	Fraxinus pennsylvanica

Table 3. Continued.

Community Type	**Dominant Species**
Wet Mesic Forest	*Juglans nigra*
	Populus tremuloides
	Salix nigra
	Alnus incana
Wet Mesic Prairie	*Agrostis stolonifera*
	Calamagrostis canadensis
	Carex bebbii
	Carex comosa
	Carex retrorsa
	Carex stipata
	Carex vulpinoidea
	Conyza canadensis
	Elymus repens
	Glyceria grandis
	Juncus tenuis
	Lobelia siphilitica
	Lycopus americanus
	Lycopus uniflorus
	Monarda fistulosa
	Nepeta cataria
	Phalaris arundinacea
	Poa palustris
	Rudbeckia hirta
	Scirpus atrovirens
	Verbena hastata
	Zizia aurea
Aquatic Submergent/Emergent	*Schoenoplectus tabernaemontani*
	Sparganium americanum
	Leersia oryzoides
2017 Mapped Aquatic Submergent/Emergent	*Lemna minor*
	Sparganium americanum
Shrub Carr	*Agrostis stolonifera*
	Alnus incana
	Bidens cernua
	Calamagrostis canadensis
	Carex comosa
	Cyperus bipartitus
	Cyperus esculentus
	Eleocharis acicularis
	Fraxinus pennsylvanica
	Glyceria striata
	Leersia oryzoides
	Ludwigia palustris
	Persicaria hydropiper
	Pilea pumila
	Salix nigra

Table 3. Continued.

Community Type	**Dominant Species**
	Schoenoplectus tabernaemontani
	Scirpus atrovirens
	Scirpus cyperinus
	Sparganium americanum
	Typha x glauca
	Urtica dioica
Mesic Prairie	*Elymus canadensis*
	Setaria pumila
	Leonurus cardiac
	Erechtites hieracifolius
	Asclepias syriaca
	Panicum capillare
	Rudbeckia hirta
	Berteroa incana
	Verbascum thapsus
	Linaria vulgaris
Mesic Prairie	*Asclepias syriaca*
	Conyza canadensis
	Glechoma hederacea
	Monarda fistulosa
Northern Sedge Meadow	*Alisma triviale*
	Calamagrostis canadensis
	Carex aquatilis
	Carex bebbii
	Carex comosa
	Carex lacustris
	Carex retrorsa
	Carex vulpinoidea
	Glyceria grandis
	Juncus dudleyi
	Juncus effusus
	Juncus tenuis
	Lemna minor
	Persicaria hydropiper
	Phlalaris arundinacea
	Potentilla anserina
	Schoenoplectus tabernaemontani
	Scirpus atrovirens
	Sparganium americanum
	Typha x glauca
	Verbena hastata
	Mimulus ringens
	Scirpus cyperinus
	Cyperus esculentus
	Cyperus bipartitus
	Bidens cernua
	Lycopus uniflorus

Table 3. Plant Species Dominance (continued).

Community Type	Dominant Species
	Pilea pumila
	Leersia oryzoides
	Eleacharis acicularis
	Elodea canadensis

Invasive/Non-native Species

Based on the information in Table 4, there are currently 65 invasive and/or non-native species found across all communities with an overall relative coverage of 17.32%. Please see the plot data sheets in Appendix A for specific sample plot percentages. Table 4 includes a list of all non-native species identified during plant surveys in 2018. Several of the species listed below often invade newly seeded sites such as the prairie communities which have the largest proportion of non-native species present. Many of these species are biennial and perennial weeds, which quickly disappear with proper maintenance and native species establishment. Continued monitoring and management of non-native species will eliminate or suppress their spread throughout the site.

Table 4. Invasive/Non-native Species Relative Coverage (%).

Species		Community							
Common Name	Scientific Name	Mesic Forest	Wet Mesic Forest	Wet Mesic Prairie	Aquatic Submergent/ Emergent	2017 Mapped Aquatic Submergent/ Emergent	Shrub Carr	Mesic Prairie	Northern Sedge Meadow
Creeping Bent Grass	*Agrostis stolonifera*	0.41	0.93	1.60	-	-	1.06	0.63	-
Garlic Mustard	*Alliaria petiolata*	2.07	0.93	-	-	-	0.53	0.63	0.52
Common Burdock	*Arctium minus*	0.41	-	-	-	-	-	-	-
Yellow-Rocket	*Barbarea vulgaris*	0.41	-	0.80	-	-	-	-	0.52
Hoary-Alyssum	*Berteroa incana*	-	0.47	0.80	-	-	-	0.63	-
Black Mustard	*Brassica nigra*	-	-	-	-	-	-	0.63	-
Smooth Brome	*Bromus inermis*	0.41	-	0.80	-	-	-	0.63	-
Cheat Grass	*Bromus tectorum*	0.41	-	-	-	-	-	-	-
Shepherd's Purse	*Capsella Bursa-Pastoris*	-	-	-	-	-	-	0.63	-
Spotted Knapweed	*Centaurea stoebe*	0.83	-	-	-	-	-	1.26	-

Table 4. Continued.

Species		Community							
Common Name	Scientific Name	Mesic Forest	Wet Mesic Forest	Wet Mesic Prairie	Aquatic Submergent/ Emergent	2017 Mapped Aquatic Submergent/ Emergent	Shrub Carr	Mesic Prairie	Northern Sedge Meadow
Common Mouse-Ear	*Cerastium fontanum*	0.83	-	-	-	-	-	-	-
Canada Thistle	*Cirsium arvense*	0.41	0.47	0.80	-	-	0.53	0.63	-
Bull Thistle	*Cirsium vulgare*	-	0.47	0.80	-	-	0.53	0.63	0.52
Field Bindweed	*Convulvulus arvensis*	-	-	-	-	-	-	-	0.52
Common Hound's-Tongue	*Cynoglossum officinale*	0.83	0.93	0.80	-	-	0.53	0.63	-
Orchard Grass	*Dactylis glomerata*	0.41	0.47	-	-	-	-	-	-
Queen Anne's Lace	*Daucus carota*	0.83	0.47	-	-	-	-	0.63	-
Barnyard Grass	*Echinochloa crus-galli*	0.41	0.47	0.80	0.81	-	0.53	-	0.52
Quackgrass	*Elymus repens*	0.41	0.93	1.60	-	-	-	0.63	-
Common Dog-Mustard	*Erucastrum gallicum*	-	-	-	-	-	-	0.63	-
Worm-Seed Mustard	*Erysimum cheiranthoides*	0.41	0.47	0.80	-	-	0.53	0.63	0.52
False Buckwheat	*Fallopia convolvulus*	-	-	-	-	-	0.53	-	0.52
Glossy Buckthorn	*Frangula alnus*	0.41	0.47	-	-	-	0.53	-	-
Brittle-Stem Hemp-Nettle	*Galeopsis tetrahit*	0.41	0.93	0.80	-	-	0.53	0.63	0.52
Creeping-Charlie	*Glechoma hederacea*	-	0.47	-	-	-	0.53	3.14	0.52
Dame's Rocket	*Hesperis matronalis*	0.41	0.47	0.80	-	-	0.53	0.63	0.52
Field Hawkweed	*Hieracium caespitosum*	-	-	-	-	-	0.53	-	-
Foxtail Barley	*Hordeum jubatum*	0.41	-	-	-	-	-	-	-
St. John's Wort	*Hypericum perforatum*	0.83	-	0.80	-	-	-	1.26	-
European Stickseed	Lappula Sqarrosa	-	-	-	-	-	-	0.63	-

Table 4. Continued.

Species		Community							
Common Name	Scientific Name	Mesic Forest	Wet Mesic Forest	Wet Mesic Prairie	Aquatic Submergent/ Emergent	2017 Mapped Aquatic Submergent/ Emergent	Shrub Carr	Mesic Prairie	Northern Sedge Meadow
Motherwort	*Leonurus cardiaca*	0.41	0.47	0.80	-	-	0.53	0.63	0.52
Common Daisy	*Leucanthemum vulgare*	0.41	-	0.80	-	-	0.53	0.63	-
Butter-N-Eggs	*Linaria vulgaris*	0.83	0.47	0.80	-	-	0.53	1.26	-
Perennial Rye	*Lolium perenne*	-	-	-	-	-	-	-	0.52
Tartarian Honeysuckle	*Lonicera tartarica*	0.41	-	-	-	-	0.53	-	-
Bird's-Foot Trefoil	*Lotus corniculatus*	0.41	-	-	-	-	-	-	-
Purple Loosestrife	*Lythrum salicaria*	0.41	0.47	-	0.81	-	0.53	-	0.52
Pineapple-Weed	*Matricaria discoidea*	-	-	-	-	-	-	0.63	-
Black Medic	*Medicago lupulina*	0.41	-	0.80	-	-	-	0.63	0.52
White Sweet Clover	*Melilotus albus*	0.41	-	-	-	-	-	-	0.52
Yellow Sweet Clover	*Melilotus officinalis*	0.41	-	-	-	-	-	-	-
Catnip	*Nepeta cataria*	0.41	0.47	1.60	-	-	0.53	0.63	0.52
Marsh-Pepper Smartweed	*Persicaria hydropiper*	-	0.47	0.80	0.81	0.55	2.65	-	2.62
Spotted Lady's Thumb	*Persicaria maculosa*	0.41	0.47	0.80	-	-	0.53	0.63	0.52
Reed Canary Grass	*Phalaris arundinacea*	0.83	0.93	1.60	0.81	-	0.53	1.26	2.62
Timothy	*Phleum pratense*	0.41	-	0.80	-	-	-	0.63	-
Common Reed	*Phragmites australis*	0.41	-	-	1.63	-	0.53	-	-
Common Plantain	*Plantago major*	0.41	-	0.80	-	-	0.53	0.63	-
Kentucky Bluegrass	*Poa pratensis*	0.83	-	-	-	-	-	0.63	-
Common Knotweed	*Polygonum aviculare*	0.41	-	-	-	-	-	0.63	-
Curly Dock	*Rumex crispus*	0.41	-	-	-	-	0.53	-	0.52
Bouncing-Bet	*Saponaria officinalis*	-	-	-	-	-	-	0.63	-

Table 4. Continued.

Species		Community							
Common Name	Scientific Name	Mesic Forest	Wet Mesic Forest	Wet Mesic Prairie	Aquatic Submergent/ Emergent	2017 Mapped Aquatic Submergent/ Emergent	Shrub Carr	Mesic Prairie	Northern Sedge Meadow
Chinese Foxtail	*Setaria faberi*	-	-	-	-	-	-	1.26	-
Yellow Foxtail	*Setaria pumila*	0.83	0.47	0.80	-	-	0.53	-	-
Bladder Campion	*Silene vulgaris*	0.41	-	0.80	-	-	-	-	-
Bittersweet Nightshade	*Solanum dulcamara*	-	-	-	-	-	0.53	-	-
Field Sow-Thistle	*Sonchus arvensis*	0.41	0.47	-	-	-	-	-	-
Grass-Like Starwort	*Stellaria graminea*	-	-	-	-	-	-	0.63	-
Common Dandelion	*Taraxacum officinale*	0.41	-	-	-	-	-	0.63	0.52
Red Clover	*Trifolium pratense*	-	0.47	-	-	-	-	-	-
White Clover	*Trifolium repens*	0.41	-	0.80	-	-	0.53	0.63	0.52
Hybrid Cattail	*Typha x glauca*	-	0.47	0.80	-	0.55	1.06	-	1.05
Common Mullein	*Verbascum Thapsus*	0.41	0.47	0.80	-	-	0.53	0.63	-
Cow Vetch	*Vicia cracca*	-	-	0.80	-	-	-	-	-

Wildlife

A total of 24 species were noted during the 2018 field season. There were two mammals (one new in 2018), three herptiles and nineteen avian species (fourteen new in 2018). Observations were noted when personnel were on-site for monitoring activities (Table 5).

Table 5. Wildlife Observations.

Species		Year Observed		
Common Name	Scientific Name	2017	2018	2019
Mammals				
White-tailed Deer	*Odocoileus virginianus*	■	■	
Muskrat	*Ondatra zibethicus*		■	
Herptiles				
Eastern American Toad	*Bufo americanus americanus*	■	■	
Painted Turtle	*Chrysemys picta*	■	■	
Leopard Frog	*Lithobates pipiens*	■	■	
Common Garter Snake	*Thamnophis sirtalis*	■		
Birds				
Red-winged Blackbird	*Agelaius phoeniceus*	■	■	
Blue-winged Teal	*Anas discors*		■	
Mallard	*Anas platyrhynchos*	■	■	
Great Egret	*Ardea alba*	■	■	
Great Blue Heron	*Ardea herodias*	■	■	
Canada Goose	*Branta canadensis*		■	
Green Heron	*Butorides virescens*		■	
Northern Cardinal	*Cardinalis cardinalis*		■	
Killdeer	*Charadrius vociferus*		■	
American Crow	*Corvus brachyrhynchos*		■	
Blue Jay	*Cyanocitta crstata*		■	
Bald Eagle	*Haleaeetus leucocephalus*	■		
Ringed-bill Gull	*Larus delawarensis*	■		
Hering Gull	*Larus smithsonianus*		■	
Belted Kingfisher	*Megaceryle alcyon*	■	■	
Osprey	*Pandion haliaetus*	■		
Black-capped Chickadee	*Poecile atricapillus*		■	
Common Grackle	*Quiscalus quiscula*		■	
Common Tern	*Sterna hirundo*	■		
Tree Swallow	*Tachycineta bicolor*		■	
American Robin	*Turdus migratorius*		■	
Solitary Sandpiper	*Tringa solitaria*		■	
Mourning Dove	*Zenaida macroura*		■	

Conclusions & Recommendations

Overall, the condition of South Channel two years after restoration is relatively normal. Native species can take 2-3 years to begin developing after seeding and planting. During that time many non-native upland and wetland species can become established due to the high levels of disturbance during initial restoration efforts, which negatively impacts the coverage of native species as well as the floristic quality index (FQI) and coefficient of conservatism (Mean C). The Mesic Prairie and Wet Mesic Prairie had the lowest native plant cover at 70.44% and 73.60%, respectively. There is room for improvement, but these communities increased native plant cover by ~30% compared to 2017. Since it takes time for seeded prairie species to establish, it can be expected that weedy species fill in these areas in the early years after seeding. With continued maintenance by Applied Ecological Services (AES), the prairie should achieve desired native species coverage. The greatest concern is damage to the Mesic Prairie plantings on the berms since they are access points for performing maintenance activities. The disturbance and soil compaction caused from driving or repeatedly walking on the berms has created areas that are void of vegetation and also areas that have higher coverage of weedy, disturbance prone plant species. It is recommended that the berms be re-seeded in 2019 and that further disturbance be confined and minimized on the berms.

Although not very abundant, species such as reed canary grass, *Phragmites* and purple loosestrife need to continue to be aggressively treated throughout the upcoming growing season. Continued treatment of narrow-leaved and hybrid cattail also needs to be performed, especially in areas near the Cattail Marsh Enhancement Community. Garlic mustard treatment also needs to continue to be performed, and it is crucial to continue garlic mustard control in the far eastern Mesic Forest to reduce the population and prevent future seed set in this area. Herbicide treatments and mowing operations should be conducted at the appropriate time of year to achieve best results. In some cases, maintenance activities should be conducted 2 or 3 times throughout the growing season in order to more effectively reduce populations. Continuation of invasive species control will be critical while planted and seeded communities fill in with desirable plant species.

The timed meander sampling protocol appears to be efficient in capturing the total number of species recorded at South Channel. During the 2018 surveys a total of 219 species were recorded across all communities. Of those 219 species 64 are non-native, and of those only 4 are species of greater concern (reed canary grass, *Phragmites*, purple loosestrife & garlic mustard). The above species are currently under control in most areas, but will continue to need aggressive monitoring and treatments in order to maintain their suppression and inhibit their ability to become re-established.

A

APPENDIX A

Vegetation Survey Data

SITE NAME: South Channel
COMMUNITY: N Sedge Meadow Enhancement, N Sedge Meadow Enhancement (Standing Water), N Sedge Meadow Restoration, N Sedge Meadow Restoration (Standing Water)
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

	191		100	158						1	1						
ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	**Cover**	**Relative Cover**	***Latin Name***	**Common Name**	**C-Value**	**p(n)**	**p(a)**	**pC(n)**	**pC(a)**	**Wetland Indicator Status (MW/NCNE)**	**Origin**	**Duration**	**Form**		**W**		**Dominant**
aceneg	1	0.523560209	*Acer negundo*	*box elder*	*0*	0.01	0.005	#####	####	FAC	Native	perennial	tree			0	
acerub	1	0.523560209	*Acer rubrum*	*red maple*	*3*	0.01	0.005	#####	####	FAC	Native	perennial	tree			0	
achmil	1	0.523560209	*Achillea millefolium*	*common yarrow, milfoil*	*1*	0.01	0.005	#####	####	FACU	Native	perennial	forb			3	
alitri	2	1.047120419	*Alisma triviale*	*northern water-plantain*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	semi-aquatic			-5	x
allpet	1	0.523560209	*Alliaria petiolata*	*garlic mustard*	*0*	0	0.005	#####	####	FAC	Introduced	biennial	forb			0	
alninc	1	0.523560209	*Alnus incana*	*speckled alder, tag alder*	*4*	0.01	0.005	#####	####	FACW	Native	perennial	shrub			-3	
ascsyr	1	0.523560209	*Asclepias syriaca*	*common milkweed*	*1*	0.01	0.005	#####	####	UPL	Native	perennial	forb			5	
barvul	1	0.523560209	*Barbarea vulgaris*	*winter-cress, yellow-rocket*	*0*	0	0.005	#####	####	FAC	Introduced	biennial/per----	forb			0	
calcan	5	2.617801047	*Calamagrostis*	*blue-joint grass*	*5*	0.03	0.026	#####	####	OBL	Native	perennial	grass			-5	x
caltpal	1	0.523560209	*Caltha palustris*	*cowslip, marsh-marigold, yellow*	*6*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
caraqu	2	1.047120419	*Carex aquatilis*	*water sedge*	*7*	0.01	0.01	#####	####	OBL	Native		0		0	-5	x
carbeb	2	1.047120419	*Carex bebbii*	*Bebb's sedge*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
carcom	2	1.047120419	*Carex comosa*	*bristly sedge*	*5*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
carlac	5	2.617801047	*Carex lacustris*	*common lake sedge*	*6*	0.03	0.026	#####	####	OBL	Native	perennial	sedge			-5	x
carret	2	1.047120419	*Carex retrorsa*	*deflexed bottlebrush sedge, knot-*	*6*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
carsti	1	0.523560209	*Carex stipata*	*common fox sedge*	*2*	0.01	0.005	#####	####	OBL	Native	perennial	sedge			-5	
carvul	2	1.047120419	*Carex vulpinoidea*	*brown fox sedge*	*2*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
cerdem	1	0.523560209	*Ceratophyllum*	*coon's-tail, hornwort*	*3*	0.01	0.005	#####	####	OBL	Native	perennial	aquatic			-5	
cicmac	1	0.523560209	*Cicuta maculata*	*spotted water-hemlock*	*6*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
cirvul	1	0.523560209	*Cirsium vulgare*	*bull thistle, common thistle*	*0*	0	0.005	#####	####	FACU	Introduced	biennial	forb			3	
conarv	1	0.523560209	*Convolvulus arvensis*	*field bindweed*	*0*	0	0.005	#####	####	UPL	Introduced	perennial	vine			5	
elepal	1	0.523560209	*Eleocharis palustris*	*common spike-rush, marsh spike-*	*6*	0.01	0.005	#####	####	OBL	Native	perennial	sedge			-5	
erehie	1	0.523560209	*Erechtites hieraciifolius*	*fireweed*	*2*	0.01	0.005	#####	####	UPL	Native	annual	forb			5	
eristr	1	0.523560209	*Erigeron strigosus*	*rough fleabane*	*2*	0.01	0.005	#####	####	FACU	Native	annual	forb			3	
eryche	1	0.523560209	*Erysimum cheiranthoides*	*worm-seed mustard, worm-seed*	*0*	0	0.005	#####	####	FACU	Introduced	annual	forb			3	
eupper	1	0.523560209	*Eupatorium perfoliatum*	*boneset*	*6*	0.01	0.005	#####	####	FACW	Native	perennial	forb			-3	
frapen	1	0.523560209	*Fraxinus pennsylvanica*	*green ash, red ash*	*2*	0.01	0.005	#####	####	FACW	Native	perennial	tree			-3	
galtet	1	0.523560209	*Galeopsis tetrahit*	*brittle-stem hemp-nettle,*	*0*	0	0.005	#####	####	0	Introduced	annual	forb	x			
glehed	1	0.523560209	*Glechoma hederacea*	*creeping-Charlie*	*0*	0	0.005	#####	####	FACU	Introduced	perennial	forb			3	
glygra	2	1.047120419	*Glyceria grandis*	*American manna grass*	*6*	0.01	0.01	#####	####	OBL	Native	perennial	grass			-5	x
glystr	1	0.523560209	*Glyceria striata*	*fowl manna grass*	*4*	0.01	0.005	#####	####	OBL	Native	perennial	grass			-5	
hesmat	1	0.523560209	*Hesperis matronalis*	*dame's rocket*	*0*	0	0.005	#####	####	FACU	Introduced	biennial/per----	forb			3	
impcap	1	0.523560209	*Impatiens capensis*	*orange jewelweed*	*2*	0.01	0.005	#####	####	FACW	Native	annual	forb			-3	
iriver	1	0.523560209	*Iris versicolor*	*northern blue flag*	*5*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
jundud	2	1.047120419	*Juncus dudleyi*	*Dudley's rush*	*4*	0.01	0.01	#####	####	FACW	Native	perennial	rush			-3	x
juneff	2	1.047120419	*Juncus effusus*	*common rush, soft rush*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	rush			-5	x
junten	2	1.047120419	*Juncus tenuis*	*path rush*	*1*	0.01	0.01	#####	####	FAC	Native	perennial	rush			0	x
lemmin	2	1.047120419	*Lemna minor*	*common duckweed*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	aquatic			-5	x
leocar	1	0.523560209	*Leonurus cardiaca*	*lion's-tail, motherwort*	*0*	0	0.005	#####	####	0	Introduced	perennial	forb	x			
leuvul	1	0.523560209	*Leucanthemum vulgare*	*common daisy, field daisy,*	*0*	0	0.005	#####	####	UPL	Introduced	perennial	forb			5	
ludpal	1	0.523560209	*Ludwigia palustris*	*marsh purslane, marsh seed-box,*	*4*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
lycame	1	0.523560209	*Lycopus americanus*	*common water-horehound*	*4*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
lytsal	1	0.523560209	*Lythrum salicaria*	*purple loosestrife*	*0*	0	0.005	#####	####	OBL	Introduced	perennial	forb			-5	
medlup	1	0.523560209	*Medicago lupulina*	*black medick*	*0*	0	0.005	#####	####	FACU	Introduced	annual/pien---	forb			3	
nepcat	1	0.523560209	*Nepeta cataria*	*catnip*	*0*	0	0.005	#####	####	FACU	Introduced	perennial	forb			3	
onosen	1	0.523560209	*Onoclea sensibilis*	*sensitive fern*	*5*	0.01	0.005	#####	####	FACW	Native	perennial	fern			-3	
osmcin	1	0.523560209	*Osmunda cinnamomea*	*cinnamon fern*	*7*	0.01	0.005	#####	####	0	Native	perennial	fern	x			
oxastr	1	0.523560209	*Oxalis stricta*	*common yellow oxalis*	*0*	0.01	0.005	#####	####	FACU	Native	perennial	forb			3	
perhyd	5	2.617801047	*Persicaria hydropiper*	*marsh-pepper smartweed, water-*	*0*	0	0.026	#####	####	OBL	Introduced	annual	forb			-5	x
permac	1	0.523560209	*Persicaria maculosa*	*heart's-ease, spotted lady's-*	*0*	0	0.005	#####	####	FACW	Introduced	annual			0	-3	
phaaru	5	2.617801047	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0.026	#####	####	FACW	Introduced	perennial	grass			-3	x
poapal	1	0.523560209	*Poa palustris*	*marsh bluegrass*	*5*	0.01	0.005	#####	####	FACW	Native	perennial	grass			-3	
popdel	1	0.523560209	*Populus deltoides*	*eastern cottonwood*	*2*	0.01	0.005	#####	####	FAC	Native	perennial	tree			0	
potfol	1	0.523560209	*Potamogeton foliosus*	*leafy pondweed*	*6*	0.01	0.005	#####	####	OBL	Native		0		0	-5	
potnat	1	0.523560209	*Potamogeton natans*	*common pondweed*	*5*	0.01	0.005	#####	####	OBL	Native	perennial	aquatic			-5	
potans	2	1.047120419	*Potentilla anserina*	*silver-weed*	*4*	0.01	0.01	#####	####	FACW	Native		0		0	-3	x
ranpen	1	0.523560209	*Ranunculus*	*Pennsylvania buttercup*	*5*	0.01	0.005	#####	####	OBL	Native	annual/pere----	forb			-5	
ransce	1	0.523560209	*Ranunculus sceleratus*	*celery-leaf buttercup*	*3*	0.01	0.005	#####	####	OBL	Native	annual/pere----	forb			-5	
rumcri	1	0.523560209	*Rumex crispus*	*curly dock*	*0*	0	0.005	#####	####	FAC	Introduced	perennial	forb			0	
saglat	1	0.523560209	*Sagittaria latifolia*	*broad-leaved arrowhead*	*3*	0.01	0.005	#####	####	OBL	Native	perennial	semi-aquatic			-5	
schtab	5	2.617801047	*Schoenoplectus*	*soft-stem bulrush*	*4*	0.03	0.026	#####	####	OBL	Native	perennial	sedge			-5	x
sciatr	10	5.235602094	*Scirpus atrovirens*	*dark-green bulrush*	*3*	0.06	0.052	#####	####	OBL	Native	perennial	sedge			-5	x
siusua	1	0.523560209	*Sium suave*	*hemlock water-parsnip, common*	*5*	0.01	0.005	#####	####	OBL	Native	(annual/pe----	forb			-5	
spaame	10	5.235602094	*Sparganium americanum*	*American bur-reed*	*8*	0.06	0.052	#####	####	OBL	Native	perennial	aquatic			-5	x
taroff	1	0.523560209	*Taraxacum officinale*	*common dandelion*	*0*	0	0.005	#####	####	FACU	Introduced	perennial	forb			3	
traohi	1	0.523560209	*Tradescantia ohiensis*	*blue-jacket, common spiderwort,*	*5*	0.01	0.005	#####	####	FACU	Native	perennial	forb			3	
trirep	1	0.523560209	*Trifolium repens*	*white clover*	*0*	0	0.005	#####	####	FACU	Introduced	perennial	forb			3	
typgla	2	1.047120419	*Typha X glauca*	*hybrid cat-tail, white cat-tail*	*0*	0	0.01	#####	####	OBL	Introduced	perennial	semi-aquatic			-5	x
urtdio	1	0.523560209	*Urtica dioica*	*stinging nettle*	*1*	0.01	0.005	#####	####	FAC	Native	perennial	forb			0	
verhas	2	1.047120419	*Verbena hastata*	*blue vervain, simpler's-joy,*	*3*	0.01	0.01	#####	####	FACW	Native	biennial/per----	forb			-3	x
mimrin	2	1.047120419	*Mimulus ringens*	*monkey-flower*	*6*	0.01	0.01	#####	####	OBL	Native		0		0	-5	x
scicyp	2	1.047120419	*Scirpus cyperinus*	*wool-grass*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
epicil	1	0.523560209	*Epilobium ciliatum*	*hairy willow-herb*	*3*	0.01	0.005	#####	####	FACW	Native	perennial	forb			-3	
cypesc	2	1.047120419	*Cyperus esculentus*	*field nut sedge*	*0*	0.01	0.01	#####	####	FACW	Native		0		0	-3	x
cypbip	2	1.047120419	*Cyperus bipartitus*	*shining flat sedge, slender flat*	*3*	0.01	0.01	#####	####	FACW	Native	annual	sedge			-3	x
pensed	1	0.523560209	*Penthorum sedoides*	*ditch stonecrop*	*3*	0.01	0.005	#####	####	OBL	Native	perennial	forb			-5	
lolper	1	0.523560209	*Lolium perenne*	*English rye grass, perennial rye*	*0*	0	0.005	#####	####	FACU	Introduced	perennial	grass			3	
phyvir	1	0.523560209	*Physostegia virginiana*	*obedience plant*	*7*	0.01	0.005	#####	####	FACW	Native		0		0	-3	
elyvir	1	0.523560209	*Elymus virginicus*	*Virginia wild-rye*	*6*	0.01	0.005	#####	####	FACW	Native	perennial	grass			-3	
carhys	1	0.523560209	*Carex hystericina*	*bottlebrush sedge, porcupine*	*3*	0.01	0.005	#####	####	OBL	Native	perennial	sedge			-5	
echlob	1	0.523560209	*Echinocystis lobata*	*balsam-apple, wild-cucumber*	*2*	0.01	0.005	#####	####	FACW	Native	annual	vine			-3	
potnat	1	0.523560209	*Potamogeton natans*	*common pondweed*	*5*	0.01	0.005	#####	####	OBL	Native	perennial	aquatic			-5	
bidcer	20	10.47120419	*Bidens cernua*	*nodding beggar-ticks*	*4*	0.13	0.105	#####	####	OBL	Native	annual	forb			-5	x
schpun	1	0.523560209	*Schoenoplectus pungens*	*common three-square bulrush*	*5*	0.01	0.005	#####	####	OBL	Native	perennial	sedge			-5	
melalb	1	0.523560209	*Melilotus albus*	*white sweet-clover*	*0*	0	0.005	#####	####	FACU	Introduced	annual/pien---	forb			3	
lobcar	1	0.523560209	*Lobelia cardinalis*	*cardinal-flower*	*7*	0.01	0.005	#####	####	OBL	Native		0		0	-5	
lobsip	1	0.523560209	*Lobelia siphilitica*	*great blue lobelia*	*5*	0.01	0.005	#####	####	FACW	Native	perennial	forb			-3	
echcru	1	0.523560209	*Echinochloa crus-galli*	*barnyard grass, large barnyard*	*0*	0	0.005	#####	####	FACW	Introduced	annual	grass			-3	
spapec	1	0.523560209	*Spartina pectinata*	*prairie cord grass*	*5*	0.01	0.005	#####	####	FACW	Native	perennial	grass			-3	
ambart	1	0.523560209	*Ambrosia artemisiifolia*	*short ragweed*	*0*	0.01	0.005	#####	####	FACU	Native	annual	forb			3	
potnor	1	0.523560209	*Potentilla norvegica*	*Norwegian cinquefoil*	*0*	0.01	0.005	#####	####	FAC	Native	annual/pere----	forb			0	
junnod	1	0.523560209	*Juncus nodosus*	*joint rush*	*6*	0.01	0.005	#####	####	OBL	Native	perennial	rush			-5	
mencan	1	0.523560209	*Mentha canadensis*	*field mint, wild mint*	*3*	0.01	0.005	#####	####	FACW	Native	perennial	forb			-3	
lycuni	2	1.047120419	*Lycopus uniflorus*	*northern water-horehound*	*4*	0.01	0.01	#####	####	OBL	Native	perennial	forb			-5	x
pancap	1	0.523560209	*Panicum capillare*	*witch grass*	*1*	0.01	0.005	#####	####	FAC	Native		0		0	0	
agapau	1	0.523560209	*Agalinis paupercula*	*small-flowered false foxglove,*	*7*	0.01	0.005	#####	####	OBL	Native	annual	forb			-5	
pilpum	2	1.047120419	*Pilea pumila*	*Canadian clearweed*	*3*	0.01	0.01	#####	####	FACW	Native	annual	forb			-3	x
concan	1	0.523560209	*Conyza canadensis*	*Canadian horseweed, fleabane,*	*0*	0.01	0.005	#####	####	0	Native		0		0 x		
rubida	1	0.523560209	*Rubus idaeus*	*wild red raspberry*	*3*	0.01	0.005	#####	####	FAC	Native	perennial	shrub			0	
falcon	1	0.523560209	*Fallopia convolvulus*	*black-bindweed, false buckwheat*	*0*	0	0.005	#####	####	FACU	Introduced		0		0	3	
leeory	10	5.235602094	*Leersia oryzoides*	*rice cutgrass*	*3*	0.06	0.052	#####	####	OBL	Native	perennial	grass			-5	x
eleaci	2	1.047120419	*Eleocharis acicularis*	*needle spike-rush*	*5*	0.01	0.01	#####	####	OBL	Native	perennial	sedge			-5	x
elocan	2	1.047120419	*Elodea canadensis*	*Canadian waterweed, common*	*3*	0.01	0.01	#####	####	OBL	Native	perennial	aquatic			-5	x

Species Richness:

Total Species	103
Native Species	79
Non-Native Species	24
Proportion Native Cover	76.70
Percent Cover Native	82.72
Percent Cover Non-Native	17.28

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	3.81
Unweighted FQI	33.87
Weighted Mean C (wC)	4.08
Weighted FQI (wFQIn)	36.28

Floristic Quality Metrics: All Species

Unweighted Mean C	2.92
Unweighted FQIa	29.66
Weighted Mean C (wCa)	3.38
Weighted FQI (wFQIa)	34.27

Wetland Species:

Mean W	-2.30
Native Wetland Species	66
Percent Native Wetland	64.08
Percent Cover Native	70
Percent Wetland Cover	80

Dominance

Percent Total Aerial Coverage	191.00
50%	95.5
20%	38.2

SITE NAME: South Channel
COMMUNITY: Shrub Carr Upland Planting, Shrub Carr Wetland Restoration, Tag Alder Enhancement
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

189 100 153 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	ENTER COVER	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form		W	Dominant
agrsto	2	1.058201058	*Agrostis stolonifera*	creeping bent	0	0	0.011	#####	####	FACW	Introduced	perennial	grass		-3	x
alitri	1	0.529100529	*Alisma triviale*	northern water-	4	0	0.005	#####	####	OBL	Native	perennial	semi-aquatic		-5	
allpet	1	0.529100529	*Alliaria petiolata*	garlic mustard	0	0	0.005	#####	####	FAC	Introduced	biennial	forb		0	
alninc	40	21.16402116	*Alnus incana*	speckled alder,	4	0.3	0.212	#####	####	FACW	Native	perennial	shrub		-3	x
ascsyr	1	0.529100529	*Asclepias syriaca*	common	1	0	0.005	#####	####	UPL	Native	perennial	forb		5	
bidcer	2	1.058201058	*Bidens cernua*	nodding beggar-	4	0	0.011	#####	####	OBL	Native	annual	forb		-5	x
calcan	2	1.058201058	*Calamagrostis canadensis*	blue-joint grass	5	0	0.011	#####	####	OBL	Native	perennial	grass		-5	x
carbeb	1	0.529100529	*Carex bebbii*	Bebb's sedge	4	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
carcom	2	1.058201058	*Carex comosa*	bristly sedge	5	0	0.011	#####	####	OBL	Native	perennial	sedge		-5	x
carlac	1	0.529100529	*Carex lacustris*	common lake	6	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
carret	1	0.529100529	*Carex retrorsa*	deflexed	6	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
carsti	1	0.529100529	*Carex stipata*	common fox	2	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
carvul	1	0.529100529	*Carex vulpinoidea*	brown fox sedge	2	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
cirarv	1	0.529100529	*Cirsium arvense*	Canada thistle,	0	0	0.005	#####	####	FACU	Introduced	perennial	forb		3	
cirvul	1	0.529100529	*Cirsium vulgare*	bull thistle,	0	0	0.005	#####	####	FACU	Introduced	biennial	forb		3	
corser	1	0.529100529	*Cornus sericea*	red osier	3	0	0.005	#####	####	FACW	Native	perennial	shrub		-3	
cynoff	1	0.529100529	*Cynoglossum officinale*	common hound's-	0	0	0.005	#####	####	UPL	Introduced	biennial	forb		5	
cypbip	2	1.058201058	*Cyperus bipartitus*	shining flat sedge,	3	0	0.011	#####	####	FACW	Native	annual	sedge		-3	x
cypesc	2	1.058201058	*Cyperus esculentus*	field nut sedge	0	0	0.011	#####	####	FACW	Native		0	0	-3	x
echcru	1	0.529100529	*Echinochloa crus-galli*	barnyard grass,	0	0	0.005	#####	####	FACW	Introduced	annual	grass		-3	
eleaci	20	10.58201058	*Eleocharis acicularis*	needle spike-rush	5	0.1	0.106	#####	####	OBL	Native	perennial	sedge		-5	x
elepal	1	0.529100529	*Eleocharis palustris*	common spike-	6	0	0.005	#####	####	OBL	Native	perennial	sedge		-5	
elyhys	1	0.529100529	*Elymus hystrix*	bottlebrush grass,	6	0	0.005	#####	####	FACU	Native	perennial	grass		3	
elyvir	1	0.529100529	*Elymus virginicus*	Virginia wild-rye	6	0	0.005	#####	####	FACW	Native	perennial	grass		-3	
erehie	1	0.529100529	*Erechtites hieraciifolius*	fireweed	2	0	0.005	#####	####	UPL	Native	annual	forb		5	
eryche	1	0.529100529	*Erysimum cheiranthoides*	worm-seed	0	0	0.005	#####	####	FACU	Introduced	annual	forb		3	
eupper	1	0.529100529	*Eupatorium perfoliatum*	boneset	6	0	0.005	#####	####	FACW	Native	perennial	forb		-3	
falcon	1	0.529100529	*Fallopia convolvulus*	black-bindweed,	0	0	0.005	#####	####	FACU	Introduced		0	0	3	
fraaln	1	0.529100529	*Frangula alnus*	glossy buckthorn	0	0	0.005	#####	####	FAC	Introduced	perennial	shrub		0	
frapen	2	1.058201058	*Fraxinus pennsylvanica*	green ash, red ash	2	0	0.011	#####	####	FACW	Native	perennial	tree		-3	x
fravir	1	0.529100529	*Fragaria virginiana*	wild strawberry	1	0	0.005	#####	####	FACU	Native	perennial	forb		3	
galtet	1	0.529100529	*Galeopsis tetrahit*	brittle-stem hemp-	0	0	0.005	#####	####	0	Introduced	annual	forb		x	
glehed	1	0.529100529	*Glechoma hederacea*	creeping-Charlie	0	0	0.005	#####	####	FACU	Introduced	perennial	forb		3	
glystr	2	1.058201058	*Glyceria striata*	fowl manna grass	4	0	0.011	#####	####	OBL	Native	perennial	grass		-5	x
hesmat	1	0.529100529	*Hesperis matronalis*	dame's rocket	0	0	0.005	#####	####	FACU	Introduced	biennial/per	forb		3	
hiecae	1	0.529100529	*Hieracium caespitosum*	field hawkweed	0	0	0.005	#####	####	0	Introduced	perennial	forb		x	
impcap	1	0.529100529	*Impatiens capensis*	orange	2	0	0.005	#####	####	FACW	Native	annual	forb		-3	
iriver	1	0.529100529	*Iris versicolor*	northern blue flag	5	0	0.005	#####	####	OBL	Native	perennial	forb		-5	
junbre	1	0.529100529	*Juncus brevicaudatus*	narrow-panicle	6	0	0.005	#####	####	OBL	Native	perennial	rush		-5	
juncan	1	0.529100529	*Juncus canadensis*	Canadian rush	7	0	0.005	#####	####	OBL	Native	perennial	rush		-5	
jundud	1	0.529100529	*Juncus dudleyi*	Dudley's rush	4	0	0.005	#####	####	FACW	Native	perennial	rush		-3	
juneff	1	0.529100529	*Juncus effusus*	common rush,	4	0	0.005	#####	####	OBL	Native	perennial	rush		-5	
junnod	1	0.529100529	*Juncus nodosus*	joint rush	6	0	0.005	#####	####	OBL	Native	perennial	rush		-5	
junten	1	0.529100529	*Juncus tenuis*	path rush	1	0	0.005	#####	####	FAC	Native	perennial	rush		0	
leeory	5	2.645502646	*Leersia oryzoides*	rice cutgrass	3	0	0.026	#####	####	OBL	Native	perennial	grass		-5	x
lemmin	1	0.529100529	*Lemna minor*	common	4	0	0.005	#####	####	OBL	Native	perennial	aquatic		-5	
leocar	1	0.529100529	*Leonurus cardiaca*	lion's-tail,	0	0	0.005	#####	####	0	Introduced	perennial	forb		x	
leuvul	1	0.529100529	*Leucanthemum vulgare*	common daisy,	0	0	0.005	#####	####	UPL	Introduced	perennial	forb		5	
linvul	1	0.529100529	*Linaria vulgaris*	butter-and-eggs	0	0	0.005	#####	####	UPL	Introduced	perennial	forb		5	
lontat	1	0.529100529	*Lonicera tatarica*	Tartarian	0	0	0.005	#####	####	FACU	Introduced	perennial	shrub		3	
ludpal	2	1.058201058	*Ludwigia palustris*	marsh purslane,	4	0	0.011	#####	####	OBL	Native	perennial	forb		-5	x
lycame	1	0.529100529	*Lycopus americanus*	common water-	4	0	0.005	#####	####	OBL	Native	perennial	forb		-5	
lycuni	1	0.529100529	*Lycopus uniflorus*	northern water-	4	0	0.005	#####	####	OBL	Native	perennial	forb		-5	
lytsal	1	0.529100529	*Lythrum salicaria*	purple loosestrife	0	0	0.005	#####	####	OBL	Introduced	perennial	forb		-5	
mencan	1	0.529100529	*Mentha canadensis*	field mint, wild	3	0	0.005	#####	####	FACW	Native	perennial	forb		-3	
mimrin	1	0.529100529	*Mimulus ringens*	monkey-flower	6	0	0.005	#####	####	OBL	Native		0	0	-5	
nepcat	1	0.529100529	*Nepeta cataria*	catnip	0	0	0.005	#####	####	FACU	Introduced	perennial	forb		3	
nymodo	1	0.529100529	*Nymphaea odorata*	fragrant water-	6	0	0.005	#####	####	OBL	Native	perennial	aquatic		-5	
onosen	1	0.529100529	*Onoclea sensibilis*	sensitive fern	5	0	0.005	#####	####	FACW	Native	perennial	fern		-3	
osmcin	1	0.529100529	*Osmunda cinnamomea*	cinnamon fern	7	0	0.005	#####	####	0	Native	perennial	fern		x	
oxastr	1	0.529100529	*Oxalis stricta*	common yellow	0	0	0.005	#####	####	FACU	Native	perennial	forb		3	
pancap	1	0.529100529	*Panicum capillare*	witch grass	1	0	0.005	#####	####	FAC	Native		0	0	0	
pensed	1	0.529100529	*Penthorum sedoides*	ditch stonecrop	3	0	0.005	#####	####	OBL	Native	perennial	forb		-5	
perhyd	5	2.645502646	*Persicaria hydropiper*	marsh-pepper	0	0	0.026	#####	####	OBL	Introduced	annual	forb		-5	x
permac	1	0.529100529	*Persicaria maculosa*	heart's-ease,	0	0	0.005	#####	####	FACW	Introduced	annual		0	-3	
phaaru	1	0.529100529	*Phalaris arundinacea*	reed canary grass	0	0	0.005	#####	####	FACW	Introduced	perennial	grass		-3	
phraus	1	0.529100529	*Phragmites australis*	common reed	0	0	0.005	#####	####	FACW	Introduced	perennial	grass		-3	
phyvir	1	0.529100529	*Physostegia virginiana*	obedience plant	7	0	0.005	#####	####	FACW	Native		0	0	-3	
pilpum	5	2.645502646	*Pilea pumila*	Canadian	3	0	0.026	#####	####	FACW	Native	annual	forb		-3	x
plamaj	1	0.529100529	*Plantago major*	common plantain	0	0	0.005	#####	####	FAC	Introduced	perennial	forb		0	
popdel	1	0.529100529	*Populus deltoides*	eastern	2	0	0.005	#####	####	FAC	Native	perennial	tree		0	
potnor	1	0.529100529	*Potentilla norvegica*	Norwegian	0	0	0.005	#####	####	FAC	Native	annual/pere	forb		0	
ranpen	1	0.529100529	*Ranunculus pensylvanicus*	Pennsylvania	5	0	0.005	#####	####	OBL	Native	annual/pere	forb		-5	
ransce	1	0.529100529	*Ranunculus sceleratus*	celery-leaf	3	0	0.005	#####	####	OBL	Native	annual/pere	forb		-5	
ribame	1	0.529100529	*Ribes americanum*	American black	4	0	0.005	#####	####	FACW	Native	perennial	shrub		-3	
rumcri	1	0.529100529	*Rumex crispus*	curly dock	0	0	0.005	#####	####	FAC	Introduced	perennial	forb		0	
saglat	1	0.529100529	*Sagittaria latifolia*	broad-leaved	3	0	0.005	#####	####	OBL	Native	perennial	semi-aquatic		-5	
salint	1	0.529100529	*Salix interior*	sandbar willow	2	0	0.005	#####	####	FACW	Native	perennial	shrub		-3	
salnig	5	2.645502646	*Salix nigra*	black willow	4	0	0.026	#####	####	OBL	Native	perennial	tree		-5	x
schtab	5	2.645502646	*Schoenoplectus tabernaemontani*	soft-stem bulrush	4	0	0.026	#####	####	OBL	Native	perennial	sedge		-5	x
sciatr	2	1.058201058	*Scirpus atrovirens*	dark-green	3	0	0.011	#####	####	OBL	Native	perennial	sedge		-5	x
scicyp	2	1.058201058	*Scirpus cyperinus*	wool-grass	4	0	0.011	#####	####	OBL	Native	perennial	sedge		-5	x
scugal	1	0.529100529	*Scutellaria galericulata*	common skullcap,	5	0	0.005	#####	####	OBL	Native	perennial	forb		-5	
setpum	1	0.529100529	*Setaria pumila*	pigeon grass,	0	0	0.005	#####	####	FAC	Introduced	annual	grass		0	
siusua	1	0.529100529	*Sium suave*	hemlock water-	5	0	0.005	#####	####	OBL	Native	(annual/type	forb		-5	
soldul	1	0.529100529	*Solanum dulcamara*	bittersweet	0	0	0.005	#####	####	FAC	Introduced	perennial	vine		0	
spaame	2	1.058201058	*Sparganium americanum*	American bur-	8	0	0.011	#####	####	OBL	Native	perennial	aquatic		-5	x
spapec	1	0.529100529	*Spartina pectinata*	prairie cord grass	5	0	0.005	#####	####	FACW	Native	perennial	grass		-3	
spialb	1	0.529100529	*Spiraea alba*	white	4	0	0.005	#####	####	FACW	Native	perennial	shrub		-3	
symlan	1	0.529100529	*Symphyotrichum lanceolatum*	lance-leaved	4	0	0.005	#####	####	FACW	Native	perennial	forb		-3	
thadas	1	0.529100529	*Thalictrum dasycarpum*	purple meadow-	4	0	0.005	#####	####	FACW	Native	perennial	forb		-3	
trirep	1	0.529100529	*Trifolium repens*	white clover	0	0	0.005	#####	####	FACU	Introduced	perennial	forb		3	
typgla	2	1.058201058	*Typha X glauca*	hybrid cat-tail,	0	0	0.011	#####	####	OBL	Introduced	perennial	semi-aquatic		-5	x
urtdio	2	1.058201058	*Urtica dioica*	stinging nettle	1	0	0.011	#####	####	FAC	Native	perennial	forb		0	x
verhas	1	0.529100529	*Verbena hastata*	blue vervain,	3	0	0.005	#####	####	FACW	Native	biennial/per	forb		-3	
vertha	1	0.529100529	*Verbascum thapsus*	common mullein	0	0	0.005	#####	####	UPL	Introduced	biennial	forb		5	
vitrip	1	0.529100529	*Vitis riparia*	river bank grape	2	0	0.005	#####	####	FAC	Native	perennial	vine		0	

Species Richness:

Total Species	97
Native Species	67
Non-Native Species	30
Proportion Native Cover	69.07
Percent Cover Native	80.95
Percent Cover Non-Native	19.05

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	3.84
Unweighted FQI	31.40
Weighted Mean C (wC)	3.97
Weighted FQI (wFQIn)	32.47

Floristic Quality Metrics: All Species

Unweighted Mean C	2.65
Unweighted FQIa	26.09
Weighted Mean C (wCa)	3.21
Weighted FQI (wFQIa)	31.63

Wetland Species:

Mean W	-2.14
Native Wetland Species	61
Percent Native Wetland Species	62.89
Percent Cover Native Wetland Species	78
Percent Wetland Cover	88

Dominance

Percent Total Aerial Coverage	189
50%	94.5
20%	37.8

SITE NAME: South Channel
COMMUNITY: Wet Mesic Prairie Planting
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

	125	100	92												
ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	**ENTER COVER**	**Relative Cover**	***Latin Name***	**Common Name**	**C-Value**	**p(n)**	**p(a)**	**pC(n)**	**pC(a)**	**Wetland Indicator Status (MW/NCNE)**	**Origin**	**Duration**	**Form**		**W**	**Dominant**
achmil	1	0.8	*Achillea millefolium*	*common yarrow,*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
agrsto	2	1.6	*Agrostis stolonifera*	*creeping bent*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	X
ascsyr	1	0.8	*Asclepias syriaca*	*common*	*1*	0.01	0	#####	####	UPL	Native	perennial	forb		5	
barvul	1	0.8	*Barbarea vulgaris*	*winter-cress,*	*0*	0	0	#####	####	FAC	Introduced	biennial/per	forb		0	
berinc	1	0.8	*Berteroa incana*	*hoary false*	*0*	0	0	#####	####	0	Introduced	annual/pere	forb		x	
broine	1	0.8	*Bromus inermis*	*Smooth brome*	*0*	0	0	#####	####	UPL	Introduced	perennial	grass		5	
calcan	10	8	*Calamagrostis canadensis*	*blue-joint grass*	*5*	0.11	0.1	#####	####	OBL	Native	perennial	grass		-5	X
carbeb	2	1.6	*Carex bebbii*	*Bebb's sedge*	*4*	0.02	0	#####	####	OBL	Native	perennial	sedge		-5	X
carcom	5	4	*Carex comosa*	*bristly sedge*	*5*	0.05	0	#####	####	OBL	Native	perennial	sedge		-5	X
carhys	1	0.8	*Carex hystericina*	*bottlebrush*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carlac	1	0.8	*Carex lacustris*	*common lake*	*6*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carret	2	1.6	*Carex retrorsa*	*deflexed*	*6*	0.02	0	#####	####	OBL	Native	perennial	sedge		-5	X
carsti	2	1.6	*Carex stipata*	*common fox*	*2*	0.02	0	#####	####	OBL	Native	perennial	sedge		-5	X
carvul	2	1.6	*Carex vulpinoidea*	*brown fox sedge*	*2*	0.02	0	#####	####	OBL	Native	perennial	sedge		-5	X
cirarv	1	0.8	*Cirsium arvense*	*Canada thistle,*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
cirvul	1	0.8	*Cirsium vulgare*	*bull thistle,*	*0*	0	0	#####	####	FACU	Introduced	biennial	forb		3	
eryche	1	0.8	*Erysimum cheiranthoides*	*worm-seed*	*0*	0	0	#####	####	FACU	Introduced	annual	forb		3	
galtet	1	0.8	*Galeopsis tetrahit*	*brittle-stem hemp-*	*0*	0	0	#####	####	0	Introduced	annual	forb		x	
hesmat	1	0.8	*Hesperis matronalis*	*dame's rocket*	*0*	0	0	#####	####	FACU	Introduced	biennial/per	forb		3	
hypper	1	0.8	*Hypericum perforatum*	*St. John's-wort*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
leocar	1	0.8	*Leonurus cardiaca*	*lion's-tail,*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
leuvul	1	0.8	*Leucanthemum vulgare*	*common daisy,*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
linvul	1	0.8	*Linaria vulgaris*	*butter-and-eggs*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
lycame	2	1.6	*Lycopus americanus*	*common water-*	*4*	0.02	0	#####	####	OBL	Native	perennial	forb		-5	X
medlup	1	0.8	*Medicago lupulina*	*black medick*	*0*	0	0	#####	####	FACU	Introduced	annual/bien	forb		3	
monfis	10	8	*Monarda fistulosa*	*bee balm, wild*	*3*	0.11	0.1	#####	####	FACU	Native	perennial	forb		3	X
nepcat	2	1.6	*Nepeta cataria*	*catnip*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	X
oxastr	1	0.8	*Oxalis stricta*	*common yellow*	*0*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
permac	1	0.8	*Persicaria maculosa*	*heart's-ease,*	*0*	0	0	#####	####	FACW	Introduced	annual		0	-3	
phaaru	2	1.6	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	X
phlpra	1	0.8	*Phleum pratense*	*timothy*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
poapal	2	1.6	*Poa palustris*	*marsh bluegrass*	*5*	0.02	0	#####	####	FACW	Native	perennial	grass		-3	X
potnor	1	0.8	*Potentilla norvegica*	*Norwegian*	*0*	0.01	0	#####	####	FAC	Native	annual/pere	forb		0	
ransce	1	0.8	*Ranunculus sceleratus*	*celery-leaf*	*3*	0.01	0	#####	####	OBL	Native	annual/pere	forb		-5	
rudhir	5	4	*Rudbeckia hirta*	*black-eyed Susan*	*4*	0.05	0	#####	####	FACU	Native		0	0	3	X
sciatr	5	4	*Scirpus atrovirens*	*dark-green*	*3*	0.05	0	#####	####	OBL	Native	perennial	sedge		-5	X
silvul	1	0.8	*Silene vulgaris*	*bladder-campion,*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
solgig	1	0.8	*Solidago gigantea*	*giant goldenrod*	*3*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
traocc	1	0.8	*Tradescantia occidentalis*	*prairie*	*5*	0.01	0	#####	####	UPL	Native		0	0	5	
trirep	1	0.8	*Trifolium repens*	*white clover*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
urtdio	1	0.8	*Urtica dioica*	*stinging nettle*	*1*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
vertha	1	0.8	*Verbascum thapsus*	*common mullein*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
verhas	10	8	*Verbena hastata*	*blue vervain,*	*3*	0.11	0.1	#####	####	FACW	Native	biennial/per	forb		-3	X
zizaur	2	1.6	*Zizia aurea*	*golden*	*7*	0.02	0	#####	####	FAC	Native	perennial	forb		0	X
elyrep	2	1.6	*Elymus repens*	*quackgrass*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	X
concan	2	1.6	*Conyza canadensis*	*Canadian*	*0*	0.02	0	#####	####	0	Native		0	0	x	X
andger	1	0.8	*Andropogon gerardii*	*big blue-stem,*	*4*	0.01	0	#####	####	FAC	Native	perennial	grass		0	
pancap	1	0.8	*Panicum capillare*	*witch grass*	*1*	0.01	0	#####	####	FAC	Native		0	0	0	
echcru	1	0.8	*Echinochloa crus-galli*	*barnyard grass,*	*0*	0	0	#####	####	FACW	Introduced	annual	grass		-3	
typgla	1	0.8	*Typha X glauca*	*hybrid cat-tail,*	*0*	0	0	#####	####	OBL	Introduced	perennial	semi-aquatic		-5	
cynoff	1	0.8	*Cynoglossum officinale*	*common hound's-*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
spapec	1	0.8	*Spartina pectinata*	*prairie cord grass*	*5*	0.01	0	#####	####	FACW	Native	perennial	grass		-3	
glygra	2	1.6	*Glyceria grandis*	*American manna*	*6*	0.02	0	#####	####	OBL	Native	perennial	grass		-5	X
lobsip	5	4	*Lobelia siphilitica*	*great blue lobelia*	*5*	0.05	0	#####	####	FACW	Native	perennial	forb		-3	X
acerub	1	0.8	*Acer rubrum*	*red maple*	*3*	0.01	0	#####	####	FAC	Native	perennial	tree		0	
setpum	1	0.8	*Setaria pumila*	*pigeon grass,*	*0*	0	0	#####	####	FAC	Introduced	annual	grass		0	
cypesc	1	0.8	*Cyperus esculentus*	*field nut sedge*	*0*	0.01	0	#####	####	FACW	Native		0	0	-3	
perhyd	1	0.8	*Persicaria hydropiper*	*marsh-pepper*	*0*	0	0	#####	####	OBL	Introduced	annual	forb		-5	
pycvir	1	0.8	*Pycnanthemum virginianum*	*common*	*6*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
junten	2	1.6	*Juncus tenuis*	*path rush*	*1*	0.02	0	#####	####	FAC	Native	perennial	rush		0	X
viccra	1	0.8	*Vicia cracca*	*bird vetch, cow*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
plamaj	1	0.8	*Plantago major*	*common plantain*	*0*	0	0	#####	####	FAC	Introduced	perennial	forb		0	
erehie	1	0.8	*Erechtites hieraciifolius*	*fireweed*	*2*	0.01	0	#####	####	UPL	Native	annual	forb		5	
lycuni	5	4	*Lycopus uniflorus*	*northern water-*	*4*	0.05	0	#####	####	OBL	Native	perennial	forb		-5	X

Species Richness:

Total Species	64
Native Species	35
Non-Native Species	29
Proportion Native Cover	54.69
Percent Cover Native	73.60
Percent Cover Non-Native	26.40

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	3.23
Unweighted FQI	19.10
Weighted Mean C (wC)	3.62
Weighted FQI (wFQIn)	21.41

Floristic Quality Metrics: All Species

Unweighted Mean C	1.77
Unweighted FQIa	14.13
Weighted Mean C (wCa)	2.66
Weighted FQI (wFQIa)	21.31

Wetland Species:

Mean W	-0.41
Native Wetland Species	27
Percent Native Wetland Species	42.19
Percent Cover Native Wetland Species	56
Percent Wetland Cover	65

Dominance

Percent Total Aerial Coverage	125.00
50%	62.5
20%	25

SITE NAME: South Channel
COMMUNITY: Mesic Prairie Planting
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

159 100 112 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	ENTER COVER	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form		W	Dominant
achmil	1	0.628930818	*Achillea millefolium*	*common yarrow,*	*1*	0.01	0	#####	#####	FACU	Native	perennial	forb		3	
agrsto	1	0.628930818	*Agrostis stolonifera*	*creeping bent*	*0*	0	0	#####	#####	FACW	Introduced	perennial	grass		-3	
allpet	1	0.628930818	*Alliaria petiolata*	*garlic mustard*	*0*	0	0	#####	#####	FAC	Introduced	biennial	forb		0	
ambart	1	0.628930818	*Ambrosia artemisiifolia*	*short ragweed*	*0*	0.01	0	#####	#####	FACU	Native	annual	forb		3	
ascsyr	10	6.289308176	*Asclepias syriaca*	*common*	*1*	0.09	0.1	#####	#####	UPL	Native	perennial	forb		5	x
berinc	1	0.628930818	*Berteroa incana*	*hoary false*	*0*	0	0	#####	#####	0	Introduced	annual/perennial	forb		x	
branig	1	0.628930818	*Brassica nigra*	*black mustard*	*0*	0	0	#####	#####	0	Introduced	annual	forb		x	
broine	1	0.628930818	*Bromus inermis*	*Smooth brome*	*0*	0	0	#####	#####	UPL	Introduced	perennial	grass		5	
capbur	1	0.628930818	*Capsella bursa-pastoris*	*shepherd's-purse*	*0*	0	0	#####	#####	FACU	Introduced	annual	forb		3	
carbeb	1	0.628930818	*Carex bebbii*	*Bebb's sedge*	*4*	0.01	0	#####	#####	OBL	Native	perennial	sedge		-5	
carvul	1	0.628930818	*Carex vulpinoidea*	*brown fox sedge*	*2*	0.01	0	#####	#####	OBL	Native	perennial	sedge		-5	
chealb	1	0.628930818	*Chenopodium album*	*common lamb's-*	*0*	0.01	0	#####	#####	FACU	Native	annual	forb		3	
cirarv	1	0.628930818	*Cirsium arvense*	*Canada thistle,*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	
cirvul	1	0.628930818	*Cirsium vulgare*	*bull thistle,*	*0*	0	0	#####	#####	FACU	Introduced	biennial	forb		3	
concan	5	3.144654088	*Conyza canadensis*	*Canadian*	*0*	0.04	0	#####	#####	0	Native		0	0	x	x
cynoff	1	0.628930818	*Cynoglossum officinale*	*common hound's-*	*0*	0	0	#####	#####	UPL	Introduced	biennial	forb		5	
despin	1	0.628930818	*Descurainia pinnata*	*pinnate tansy*	*0*	0.01	0	#####	#####	0	Native		0	0	x	
elyrep	1	0.628930818	*Elymus repens*	*quackgrass*	*0*	0	0	#####	#####	FACU	Introduced	perennial	grass		3	
equarv	1	0.628930818	*Equisetum arvense*	*field horsetail*	*1*	0.01	0	#####	#####	FAC	Native	perennial	fern ally		0	
erugal	1	0.628930818	*Erucastrum gallicum*	*common dog-*	*0*	0	0	#####	#####	0	Introduced	annual/biennial	forb		x	
eryche	1	0.628930818	*Erysimum cheiranthoides*	*worm-seed*	*0*	0	0	#####	#####	FACU	Introduced	annual	forb		3	
galtet	1	0.628930818	*Galeopsis tetrahit*	*brittle-stem hemp-*	*0*	0	0	#####	#####	0	Introduced	annual	forb		x	
glehed	5	3.144654088	*Glechoma hederacea*	*creeping-Charlie*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	x
hesmat	1	0.628930818	*Hesperis matronalis*	*dame's rocket*	*0*	0	0	#####	#####	FACU	Introduced	biennial/perennial	forb		3	
hypper	2	1.257861635	*Hypericum perforatum*	*St. John's-wort*	*0*	0	0	#####	#####	UPL	Introduced	perennial	forb		5	
junten	1	0.628930818	*Juncus tenuis*	*path rush*	*1*	0.01	0	#####	#####	FAC	Native	perennial	rush		0	
lapsqu	1	0.628930818	*Lappula squarrosa*	*European*	*0*	0	0	#####	#####	0	Introduced	annual	forb		x	
leocar	1	0.628930818	*Leonurus cardiaca*	*lion's-tail,*	*0*	0	0	#####	#####	0	Introduced	perennial	forb		x	
leuvul	1	0.628930818	*Leucanthemum vulgare*	*common daisy,*	*0*	0	0	#####	#####	UPL	Introduced	perennial	forb		5	
linvul	2	1.257861635	*Linaria vulgaris*	*butter-and-eggs*	*0*	0	0	#####	#####	UPL	Introduced	perennial	forb		5	
lytsal	1	0.628930818	*Lythrum salicaria*	*purple loosestrife*	*0*	0	0	#####	#####	OBL	Introduced	perennial	forb		-5	
matdis	1	0.628930818	*Matricaria discoidea*	*pineapple-weed*	*0*	0	0	#####	#####	FACU	Introduced	annual	forb		3	
medlup	1	0.628930818	*Medicago lupulina*	*black medick*	*0*	0	0	#####	#####	FACU	Introduced	annual/biennial	forb		3	
monfis	10	6.289308176	*Monarda fistulosa*	*bee balm, wild*	*3*	0.09	0.1	#####	#####	FACU	Native	perennial	forb		3	x
nepcat	1	0.628930818	*Nepeta cataria*	*catnip*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	
oxastr	1	0.628930818	*Oxalis stricta*	*common yellow*	*0*	0.01	0	#####	#####	FACU	Native	perennial	forb		3	
panvir	2	1.257861635	*Panicum virgatum*	*switch grass*	*4*	0.02	0	#####	#####	FAC	Native	perennial	grass		0	
percar	1	0.628930818	*Persicaria careyi*	*Carey's heart's-*	*6*	0.01	0	#####	#####	FACW	Native	annual	forb		-3	
permac	1	0.628930818	*Persicaria maculosa*	*heart's-ease,*	*0*	0	0	#####	#####	FACW	Introduced	annual		0	-3	
phaaru	2	1.257861635	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0	#####	#####	FACW	Introduced	perennial	grass		-3	
phlpra	1	0.628930818	*Phleum pratense*	*timothy*	*0*	0	0	#####	#####	FACU	Introduced	perennial	grass		3	
plamaj	1	0.628930818	*Plantago major*	*common plantain*	*0*	0	0	#####	#####	FAC	Introduced	perennial	forb		0	
poapra	1	0.628930818	*Poa pratensis*	*Kentucky*	*0*	0	0	#####	#####	FAC	Introduced	perennial	grass		0	
polavi	1	0.628930818	*Polygonum aviculare*	*common*	*0*	0	0	#####	#####	FAC	Introduced	annual	forb		0	
potnor	1	0.628930818	*Potentilla norvegica*	*Norwegian*	*0*	0.01	0	#####	#####	FAC	Native	annual/perennial	forb		0	
pruvul	1	0.628930818	*Prunella vulgaris*	*heal-all*	*1*	0.01	0	#####	#####	FAC	Native	perennial	forb		0	
ratpin	1	0.628930818	*Ratibida pinnata*	*pinnate prairie*	*4*	0.01	0	#####	#####	UPL	Native	perennial	forb		5	
rubida	1	0.628930818	*Rubus idaeus*	*wild red*	*3*	0.01	0	#####	#####	FAC	Native	perennial	shrub		0	
rudhir	5	3.144654088	*Rudbeckia hirta*	*black-eyed Susan*	*4*	0.04	0	#####	#####	FACU	Native		0	0	3	x
sciatr	1	0.628930818	*Scirpus atrovirens*	*dark-green*	*3*	0.01	0	#####	#####	OBL	Native	perennial	sedge		-5	
solgig	2	1.257861635	*Solidago gigantea*	*giant goldenrod*	*3*	0.02	0	#####	#####	FACW	Native	perennial	forb		-3	
stegra	1	0.628930818	*Stellaria graminea*	*grass-like*	*0*	0	0	#####	#####	UPL	Introduced	perennial	forb		5	
taroff	1	0.628930818	*Taraxacum officinale*	*common*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	
traohi	1	0.628930818	*Tradescantia ohiensis*	*blue-jacket,*	*5*	0.01	0	#####	#####	FACU	Native	perennial	forb		3	
trirep	1	0.628930818	*Trifolium repens*	*white clover*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	
urtdio	1	0.628930818	*Urtica dioica*	*stinging nettle*	*1*	0.01	0	#####	#####	FAC	Native	perennial	forb		0	
vertha	1	0.628930818	*Verbascum thapsus*	*common mullein*	*0*	0	0	#####	#####	UPL	Introduced	biennial	forb		5	
verhas	10	6.289308176	*Verbena hastata*	*blue vervain,*	*3*	0.09	0.1	#####	#####	FACW	Native	biennial/perennial	forb		-3	x
sornut	2	1.257861635	*Sorghastrum nutans*	*yellow Indian*	*5*	0.02	0	#####	#####	FACU	Native	perennial	grass		3	
boucur	5	3.144654088	*Bouteloua curtipendula*	*side-oats grama*	*6*	0.04	0	#####	#####	0	Native		0	0	x	x
censto	2	1.257861635	*Centaurea stoebe*	*spotted*	*0*	0	0	#####	#####	UPL	Introduced	biennial/perennial	forb		5	
elycan	20	12.57861635	*Elymus canadensis*	*Canada wild-rye,*	*4*	0.18	0.1	#####	#####	FACU	Native	perennial	grass		3	x
andger	5	3.144654088	*Andropogon gerardii*	*big blue-stem,*	*4*	0.04	0	#####	#####	FAC	Native	perennial	grass		0	
eutgra	2	1.257861635	*Euthamia graminifolia*	*grass-leaved*	*4*	0.02	0	#####	#####	FAC	Native	perennial	forb		0	
sapoff	1	0.628930818	*Saponaria officinalis*	*bouncing-bet,*	*0*	0	0	#####	#####	FACU	Introduced	perennial	forb		3	
allste	1	0.628930818	*Allium stellatum*	*Autumn onion,*	*9*	0.01	0	#####	#####	0	Native	perennial	forb		x	
daucar	1	0.628930818	*Daucus carota*	*Queen Anne's-*	*0*	0	0	#####	#####	UPL	Introduced	biennial	forb		5	
pruvir	1	0.628930818	*Prunus virginiana*	*chokecherry*	*3*	0.01	0	#####	#####	FACU	Native	perennial	tree/shrub		3	
frapen	5	3.144654088	*Fraxinus pennsylvanica*	*green ash, red*	*2*	0.04	0	#####	#####	FACW	Native	perennial	tree		-3	x
aceneg	5	3.144654088	*Acer negundo*	*box elder*	*0*	0.04	0	#####	#####	FAC	Native	perennial	tree		0	x
alninc	2	1.257861635	*Alnus incana*	*speckled alder,*	*4*	0.02	0	#####	#####	FACW	Native	perennial	shrub		-3	
corser	3	1.886792453	*Cornus sericea*	*red osier*	*3*	0.03	0	#####	#####	FACW	Native	perennial	shrub		-3	
setfab	2	1.257861635	*Setaria faberi*	*Chinese foxtail,*	*0*	0	0	#####	#####	FACU	Introduced	annual	grass		3	

Species Richness:

Total Species	73
Native Species	35
Non-Native Species	38
Proportion Native Cover	47.95
Percent Cover Native	70.44
Percent Cover Non-Native	29.56

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	2.69
Unweighted FQI	15.89
Weighted Mean C (wC)	2.88
Weighted FQI (wFQIn)	17.06

Floristic Quality Metrics: All Species

Unweighted Mean C	1.29
Unweighted FQIa	11.00
Weighted Mean C (wCa)	2.03
Weighted FQI (wFQIa)	17.36

Wetland Species:

Mean W	1.32
Native Wetland Species	19
Percent Native Wetland Species	26.03
Percent Cover Native Wetland Species	29
Percent Wetland Cover	35

Dominance

Percent Total Aerial Coverage	159
50%	79.5
20%	31.8

SITE NAME: South Channel
COMMUNITY: Wet Mesic Forested Wetland Enhancement, Wet Mesic Forest Restoration
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

	215	100	182				1	1										
ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	**ENTER COVER**	**Relative Cover**	***Latin Name***	**Common Name**	**C-Value**	**p(n)**	**p(a)**	**pC(n)**	**pC(a)**	**Wetland Indicator Status (MW/NCNE)**	**Origin**	**Duration**	**Form**		**W**	**Dominant**
aceneg	20	9.302325581	*Acer negundo*	*box elder*	*0*	0.11	0.1	#####	####	FAC	Native	perennial	tree		0	x
acesac	5	2.325581395	*Acer saccharinum*	*silver maple, soft*	*2*	0.03	0	#####	####	FACW	Native	perennial	tree		-3	x
alitri	2	0.930232558	*Alisma triviale*	*northern water-*	*4*	0.01	0	#####	####	OBL	Native	perennial	semi-aquatic		-5	
allpet	2	0.930232558	*Alliaria petiolata*	*garlic mustard*	*0*	0	0	#####	####	FAC	Introduced	biennial	forb		0	
ascsyr	1	0.465116279	*Asclepias syriaca*	*common*	*1*	0.01	0	#####	####	UPL	Native	perennial	forb		5	
betpum	1	0.465116279	*Betula pumila*	*bog birch, dwarf*	*7*	0.01	0	#####	####	OBL	Native	perennial	shrub		-5	
bidfro	1	0.465116279	*Bidens frondosa*	*common beggar-*	*1*	0.01	0	#####	####	FACW	Native	annual	forb		-3	
calcan	5	2.325581395	*Calamagrostis canadensis*	*blue-joint grass*	*5*	0.03	0	#####	####	OBL	Native	perennial	grass		-5	x
carlac	2	0.930232558	*Carex lacustris*	*common lake*	*6*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carret	2	0.930232558	*Carex retrorsa*	*deflexed*	*6*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carsco	1	0.465116279	*Carex scoparia*	*broom sedge*	*4*	0.01	0	#####	####	FACW	Native	perennial	sedge		-3	
carsti	1	0.465116279	*Carex stipata*	*common fox*	*2*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
cirarv	1	0.465116279	*Cirsium arvense*	*Canada thistle,*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
cirvul	1	0.465116279	*Cirsium vulgare*	*bull thistle,*	*0*	0	0	#####	####	FACU	Introduced	biennial	forb		3	
corser	1	0.465116279	*Cornus sericea*	*red osier dogwood*	*3*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
elyrep	2	0.930232558	*Elymus repens*	*quackgrass*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
equarv	1	0.465116279	*Equisetum arvense*	*field horsetail*	*1*	0.01	0	#####	####	FAC	Native	perennial	fern ally		0	
erehie	2	0.930232558	*Erechtites hieraciifolius*	*fireweed*	*2*	0.01	0	#####	####	UPL	Native	annual	forb		5	
eryche	1	0.465116279	*Erysimum cheiranthoides*	*worm-seed*	*0*	0	0	#####	####	FACU	Introduced	annual	forb		3	
eupper	1	0.465116279	*Eupatorium perfoliatum*	*boneset*	*6*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
fravir	1	0.465116279	*Fragaria virginiana*	*wild strawberry*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
frapen	40	18.60465116	*Fraxinus pennsylvanica*	*green ash, red ash*	*2*	0.22	0.2	#####	####	FACW	Native	perennial	tree		-3	x
galtet	2	0.930232558	*Galeopsis tetrahit*	*brittle-stem hemp-*	*0*	0	0	#####	####	0	Introduced	annual	forb		x	
hesmat	1	0.465116279	*Hesperis matronalis*	*dame's rocket*	*0*	0	0	#####	####	FACU	Introduced	biennial/per	forb		3	
impcap	1	0.465116279	*Impatiens capensis*	*orange jewelweed*	*2*	0.01	0	#####	####	FACW	Native	annual	forb		-3	
iriver	1	0.465116279	*Iris versicolor*	*northern blue flag*	*5*	0.01	0	#####	####	OBL	Native	perennial	forb		-5	
jugnig	5	2.325581395	*Juglans nigra*	*black walnut*	*3*	0.03	0	#####	####	FACU	Native	perennial	tree		3	x
juneff	1	0.465116279	*Juncus effusus*	*common rush, soft*	*4*	0.01	0	#####	####	OBL	Native	perennial	rush		-5	
junnod	1	0.465116279	*Juncus nodosus*	*joint rush*	*6*	0.01	0	#####	####	OBL	Native	perennial	rush		-5	
junten	1	0.465116279	*Juncus tenuis*	*path rush*	*1*	0.01	0	#####	####	FAC	Native	perennial	rush		0	
larlar	1	0.465116279	*Larix laricina*	*larch, tamarack*	*8*	0.01	0	#####	####	FACW	Native	perennial	tree		-3	
lemmin	2	0.930232558	*Lemna minor*	*common*	*4*	0.01	0	#####	####	OBL	Native	perennial	aquatic		-5	
linvul	1	0.465116279	*Linaria vulgaris*	*butter-and-eggs*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
loncan	1	0.465116279	*Lonicera canadensis*	*American fly*	*8*	0.01	0	#####	####	FACU	Native	perennial	shrub		3	
lycame	2	0.930232558	*Lycopus americanus*	*common water-*	*4*	0.01	0	#####	####	OBL	Native	perennial	forb		-5	
lytsal	1	0.465116279	*Lythrum salicaria*	*purple loosestrife*	*0*	0	0	#####	####	OBL	Introduced	perennial	forb		-5	
mencan	1	0.465116279	*Mentha canadensis*	*field mint, wild*	*3*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
mimrin	1	0.465116279	*Mimulus ringens*	*monkey-flower*	*6*	0.01	0	#####	####	OBL	Native		0	0	-5	
nymodo	1	0.465116279	*Nymphaea odorata*	*fragrant water-lily*	*6*	0.01	0	#####	####	OBL	Native	perennial	aquatic		-5	
onosen	1	0.465116279	*Onoclea sensibilis*	*sensitive fern*	*5*	0.01	0	#####	####	FACW	Native	perennial	fern		-3	
osmcin	1	0.465116279	*Osmunda cinnamomea*	*cinnamon fern*	*7*	0.01	0	#####	####	0	Native	perennial	fern		x	
oxastr	1	0.465116279	*Oxalis stricta*	*common yellow*	*0*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
parqui	2	0.930232558	*Parthenocissus quinquefolia*	*Virginia creeper,*	*5*	0.01	0	#####	####	FACU	Native	perennial	vine		3	
perhyd	1	0.465116279	*Persicaria hydropiper*	*marsh-pepper*	*0*	0	0	#####	####	OBL	Introduced	annual	forb		-5	
permac	1	0.465116279	*Persicaria maculosa*	*heart's-ease,*	*0*	0	0	#####	####	FACW	Introduced	annual		0	-3	
perpen	1	0.465116279	*Persicaria pensylvanica*	*Pennsylvania*	*1*	0.01	0	#####	####	FACW	Native	annual	forb		-3	
persag	1	0.465116279	*Persicaria sagittata*	*arrow-leaved*	*6*	0.01	0	#####	####	OBL	Native	annual	vine		-5	
phaaru	2	0.930232558	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	
picgla	1	0.465116279	*Picea glauca*	*white spruce*	*7*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
poapal	1	0.465116279	*Poa palustris*	*marsh bluegrass*	*5*	0.01	0	#####	####	FACW	Native	perennial	grass		-3	
poptre	15	6.976744186	*Populus tremuloides*	*aspen, quaking*	*2*	0.08	0.1	#####	####	FAC	Native	perennial	tree		0	x
potnor	1	0.465116279	*Potentilla norvegica*	*Norwegian*	*0*	0.01	0	#####	####	FAC	Native	annual/pere	forb		0	
quemac	1	0.465116279	*Quercus macrocarpa*	*bur oak*	*5*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
ribame	1	0.465116279	*Ribes americanum*	*American black*	*4*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
samcan	1	0.465116279	*Sambucus canadensis*	*elderberry*	*3*	0.01	0	#####	####	FACU	Native	perennial	shrub		3	
schtab	2	0.930232558	*Schoenoplectus tabernaemontani*	*soft-stem bulrush*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
sciatr	1	0.465116279	*Scirpus atrovirens*	*dark-green*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
spaame	2	0.930232558	*Sparganium americanum*	*American bur-*	*8*	0.01	0	#####	####	OBL	Native	perennial	aquatic		-5	
spialb	1	0.465116279	*Spiraea alba*	*white*	*4*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
stapal	1	0.465116279	*Stachys palustris*	*hedge-nettle,*	*5*	0.01	0	#####	####	OBL	Native	perennial	forb		-5	
thadio	1	0.465116279	*Thalictrum dioicum*	*early meadow-rue*	*7*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
thuocc	1	0.465116279	*Thuja occidentalis*	*northern white-*	*9*	0.01	0	#####	####	FACW	Native	perennial	tree		-3	
tripra	1	0.465116279	*Trifolium pratense*	*red clover*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
tsucan	1	0.465116279	*Tsuga canadensis*	*northern hemlock*	*8*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
typgla	1	0.465116279	*Typha X glauca*	*hybrid cat-tail,*	*0*	0	0	#####	####	OBL	Introduced	perennial	semi-aquatic		-5	
urtdio	1	0.465116279	*Urtica dioica*	*stinging nettle*	*1*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
vertha	1	0.465116279	*Verbascum thapsus*	*common mullein*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
verhas	2	0.930232558	*Verbena hastata*	*blue vervain,*	*3*	0.01	0	#####	####	FACW	Native	biennial/per	forb		-3	
vibtri	1	0.465116279	*Viburnum trilobum*	*American*	*6*	0.01	0	#####	####	FAC	Native	perennial	shrub		0	
dacglo	1	0.465116279	*Dactylis glomerata*	*orchard grass*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
elyvir	1	0.465116279	*Elymus virginicus*	*Virginia wild-rye*	*6*	0.01	0	#####	####	FACW	Native	perennial	grass		-3	
concan	2	0.930232558	*Conyza canadensis*	*Canadian*	*0*	0.01	0	#####	####	0	Native		0	0	x	
cynoff	2	0.930232558	*Cynoglossum officinale*	*common hound's-*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
echcru	1	0.465116279	*Echinochloa crus-galli*	*barnyard grass,*	*0*	0	0	#####	####	FACW	Introduced	annual	grass		-3	
setpum	1	0.465116279	*Setaria pumila*	*pigeon grass,*	*0*	0	0	#####	####	FAC	Introduced	annual	grass		0	
agrsto	2	0.930232558	*Agrostis stolonifera*	*creeping bent*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	
leocar	1	0.465116279	*Leonurus cardiaca*	*lion's-tail,*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
pancap	1	0.465116279	*Panicum capillare*	*witch grass*	*1*	0.01	0	#####	####	FAC	Native		0	0	0	
ransce	2	0.930232558	*Ranunculus sceleratus*	*celery-leaf*	*3*	0.01	0	#####	####	OBL	Native	annual/pere	forb		-5	
spapec	1	0.465116279	*Spartina pectinata*	*prairie cord grass*	*5*	0.01	0	#####	####	FACW	Native	perennial	grass		-3	
glehed	1	0.465116279	*Glechoma hederacea*	*creeping-Charlie*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
nepcat	1	0.465116279	*Nepeta cataria*	*catnip*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
berinc	1	0.465116279	*Berteroa incana*	*hoary false*	*0*	0	0	#####	####	0	Introduced	annual/pere	forb		x	
daucar	1	0.465116279	*Daucus carota*	*Queen Anne's-lace*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
solgig	1	0.465116279	*Solidago gigantea*	*giant goldenrod*	*3*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
carbeb	1	0.465116279	*Carex bebbii*	*Bebb's sedge*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
sonarv	1	0.465116279	*Sonchus arvensis*	*field sow-thistle*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
sciatr	1	0.465116279	*Scirpus atrovirens*	*dark-green*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
scicyp	1	0.465116279	*Scirpus cyperinus*	*wool-grass*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
pinstr	1	0.465116279	*Pinus strobus*	*eastern white pine*	*5*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
salnig	15	6.976744186	*Salix nigra*	*black willow*	*4*	0.08	0.1	#####	####	OBL	Native	perennial	tree		-5	x
fraaln	1	0.465116279	*Frangula alnus*	*glossy buckthorn*	*0*	0	0	#####	####	FAC	Introduced	perennial	shrub		0	
elyhys	1	0.465116279	*Elymus hystrix*	*bottlebrush grass,*	*6*	0.01	0	#####	####	FACU	Native	perennial	grass		3	
osmreg	1	0.465116279	*Osmunda regalis*	*royal fern*	*7*	0.01	0	#####	####	0	Native	perennial	fern		x	
alninc	5	2.325581395	*Alnus incana*	*speckled alder,*	*4*	0.03	0	#####	####	FACW	Native	perennial	shrub		-3	x

Species Richness:

Total Species	95
Native Species	68
Non-Native Species	27
Proportion Native Cover	71.58
Percent Cover Native	84.65
Percent Cover Non-Native	15.35

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	4.06
Unweighted FQI	33.47
Weighted Mean C (wC)	2.98
Weighted FQI (wFQIn)	24.60

Floristic Quality Metrics: All Species

Unweighted Mean C	2.91
Unweighted FQIa	28.32
Weighted Mean C (wCa)	2.53
Weighted FQI (wFQIa)	24.62

Wetland Species:

Mean W	-1.19
Native Wetland Species	51
Percent Native Wetland Species	53.68
Percent Cover Native Wetland Species	73
Percent Wetland Cover	80

Dominance

Percent Total Aerial Coverage	215
50%	107.5
20%	43

SITE NAME: South Channel
COMMUNITY: Aquatic Submergent/Emergent Restoration
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

123 100 117 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	ENTER COVER	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form	W	Dominant
alitri	1	0.81300813	*Alisma triviale*	*northern water-*	*4*	0.01	0	#####	####	OBL	Native	perennial	semi-aquatic	-5	
calcan	2	1.62601626	*Calamagrostis canadensis*	*blue-joint grass*	*5*	0.02	0	#####	####	OBL	Native	perennial	grass	-5	
caraqu	1	0.81300813	*Carex aquatilis*	*water sedge*	*7*	0.01	0	#####	####	OBL	Native		0 0	-5	
carbeb	1	0.81300813	*Carex bebbii*	*Bebb's sedge*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge	-5	
carcom	1	0.81300813	*Carex comosa*	*bristly sedge*	*5*	0.01	0	#####	####	OBL	Native	perennial	sedge	-5	
carlac	1	0.81300813	*Carex lacustris*	*common lake*	*6*	0.01	0	#####	####	OBL	Native	perennial	sedge	-5	
cicbul	1	0.81300813	*Cicuta bulbifera*	*bulblet water-*	*7*	0.01	0	#####	####	OBL	Native	perennial	forb	-5	
elepal	1	0.81300813	*Eleocharis palustris*	*common spike-*	*6*	0.01	0	#####	####	OBL	Native	perennial	sedge	-5	
glystr	1	0.81300813	*Glyceria striata*	*fowl manna grass*	*4*	0.01	0	#####	####	OBL	Native	perennial	grass	-5	
impcap	1	0.81300813	*Impatiens capensis*	*orange*	*2*	0.01	0	#####	####	FACW	Native	annual	forb	-3	
iriver	1	0.81300813	*Iris versicolor*	*northern blue*	*5*	0.01	0	#####	####	OBL	Native	perennial	forb	-5	
juneff	1	0.81300813	*Juncus effusus*	*common rush,*	*4*	0.01	0	#####	####	OBL	Native	perennial	rush	-5	
junten	2	1.62601626	*Juncus tenuis*	*path rush*	*1*	0.02	0	#####	####	FAC	Native	perennial	rush	0	
lemmin	1	0.81300813	*Lemna minor*	*common*	*4*	0.01	0	#####	####	OBL	Native	perennial	aquatic	-5	
lytsal	1	0.81300813	*Lythrum salicaria*	*purple loosestrife*	*0*	0	0	#####	####	OBL	Introduced	perennial	forb	-5	
nymodo	2	1.62601626	*Nymphaea odorata*	*fragrant water-*	*6*	0.02	0	#####	####	OBL	Native	perennial	aquatic	-5	
phraus	2	1.62601626	*Phragmites australis*	*common reed*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass	-3	
poncor	2	1.62601626	*Pontederia cordata*	*pickerel-weed*	*8*	0.02	0	#####	####	OBL	Native	perennial	semi-aquatic	-5	
potfol	2	1.62601626	*Potamogeton foliosus*	*leafy pondweed*	*6*	0.02	0	#####	####	OBL	Native		0 0	-5	
potnat	5	4.06504065	*Potamogeton natans*	*common*	*5*	0.04	0	#####	####	OBL	Native	perennial	aquatic	-5	
potzos	1	0.81300813	*Potamogeton zosteriformis*	*flat-stem*	*6*	0.01	0	#####	####	OBL	Native	perennial	aquatic	-5	
ransce	1	0.81300813	*Ranunculus sceleratus*	*celery-leaf*	*3*	0.01	0	#####	####	OBL	Native	annual/perennial	forb	-5	
saglat	2	1.62601626	*Sagittaria latifolia*	*broad-leaved*	*3*	0.02	0	#####	####	OBL	Native	perennial	semi-aquatic	-5	
schpun	1	0.81300813	*Schoenoplectus pungens*	*common three-*	*5*	0.01	0	#####	####	OBL	Native	perennial	sedge	-5	
schtab	15	12.19512195	*Schoenoplectus*	*soft-stem bulrush*	*4*	0.13	0.1	#####	####	OBL	Native	perennial	sedge	-5	x
sciatr	5	4.06504065	*Scirpus atrovirens*	*dark-green*	*3*	0.04	0	#####	####	OBL	Native	perennial	sedge	-5	
scicyp	5	4.06504065	*Scirpus cyperinus*	*wool-grass*	*4*	0.04	0	#####	####	OBL	Native	perennial	sedge	-5	
siusua	1	0.81300813	*Sium suave*	*hemlock water-*	*5*	0.01	0	#####	####	OBL	Native	(annual?)/perennial	forb	-5	
spaame	40	32.5203252	*Sparganium americanum*	*American bur-*	*8*	0.34	0.3	#####	####	OBL	Native	perennial	aquatic	-5	x
leeory	10	8.130081301	*Leersia oryzoides*	*rice cutgrass*	*3*	0.09	0.1	#####	####	OBL	Native	perennial	grass	-5	x
spapec	1	0.81300813	*Spartina pectinata*	*prairie cord grass*	*5*	0.01	0	#####	####	FACW	Native	perennial	grass	-3	
elocan	5	4.06504065	*Elodea canadensis*	*Canadian*	*3*	0.04	0	#####	####	OBL	Native	perennial	aquatic	-5	
nupadv	1	0.81300813	*Nuphar advena*	*yellow pond-lily,*	*8*	0.01	0	#####	####	OBL	Native	perennial	aquatic	-5	
perhyd	1	0.81300813	*Persicaria hydropiper*	*marsh-pepper*	*0*	0	0	#####	####	OBL	Introduced	annual	forb	-5	
lycame	1	0.81300813	*Lycopus americanus*	*common water-*	*4*	0.01	0	#####	####	OBL	Native	perennial	forb	-5	
phaaru	1	0.81300813	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass	-3	
echcru	1	0.81300813	*Echinochloa crus-galli*	*barnyard grass,*	*0*	0	0	#####	####	FACW	Introduced	annual	grass	-3	
verhas	1	0.81300813	*Verbena hastata*	*blue vervain,*	*3*	0.01	0	#####	####	FACW	Native	biennial/perennial	forb	-3	

Species Richness:

Total Species	38
Native Species	33
Non-Native Species	5
Proportion Native Cover	86.84
Percent Cover Native	95.12
Percent Cover Non-Native	4.88

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	4.73
Unweighted FQI	27.16
Weighted Mean C (wC)	5.47
Weighted FQI (wFQIn)	31.42

Floristic Quality Metrics: All Species

Unweighted Mean C	4.11
Unweighted FQIa	25.31
Weighted Mean C (wCa)	5.20
Weighted FQI (wFQIa)	32.07

Wetland Species:

Mean W	-4.55
Native Wetland Species	33
Percent Native Wetland Species	86.84
Percent Cover Native Wetland Species	95
Percent Wetland Cover	100

Dominance

Percent Total Aerial Coverage	123
50%	61.5
20%	24.6

SITE NAME: South Channel
COMMUNITY: Aquatic Submergent/Emergent - 2017 Mapped
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

182 100 180 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	ENTER COVER	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form		W	Dominant
lemmin	50	27.47252747	*Lemna minor*	*common*	*4*	0.28	0.3	#####	####	OBL	Native	perennial	aquatic		-5	x
myrsib	60	32.96703297	*Myriophyllum sibiricum*	*common water-*	*6*	0.33	0.3	#####	####	OBL	Native	perennial	aquatic		-5	
spaame	50	27.47252747	*Sparganium americanum*	*American bur-*	*8*	0.28	0.3	#####	####	OBL	Native	perennial	aquatic		-5	x
cypesc	1	0.549450549	*Cyperus esculentus*	*field nut sedge*	*0*	0.01	0	#####	####	FACW	Native		0	0	-3	
eleobt	1	0.549450549	*Eleocharis obtusa*	*blunt spike-rush*	*3*	0.01	0	#####	####	OBL	Native	annual/perennial	sedge		-5	
typgla	1	0.549450549	*Typha X glauca*	*hybrid cat-tail,*	*0*	0	0	#####	####	OBL	Introduced	perennial	semi-aquatic		-5	
leeory	1	0.549450549	*Leersia oryzoides*	*rice cutgrass*	*3*	0.01	0	#####	####	OBL	Native	perennial	grass		-5	
sciatr	1	0.549450549	*Scirpus atrovirens*	*dark-green*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
saglat	1	0.549450549	*Sagittaria latifolia*	*broad-leaved*	*3*	0.01	0	#####	####	OBL	Native	perennial	semi-aquatic		-5	
perhyd	1	0.549450549	*Persicaria hydropiper*	*marsh-pepper*	*0*	0	0	#####	####	OBL	Introduced	annual	forb		-5	
calcan	2	1.098901099	*Calamagrostis canadensis*	*blue-joint grass*	*5*	0.01	0	#####	####	OBL	Native	perennial	grass		-5	
nymodo	1	0.549450549	*Nymphaea odorata*	*fragrant water-*	*6*	0.01	0	#####	####	OBL	Native	perennial	aquatic		-5	
potnat	5	2.747252747	*Potamogeton natans*	*common*	*5*	0.03	0	#####	####	OBL	Native	perennial	aquatic		-5	
alninc	1	0.549450549	*Alnus incana*	*speckled alder,*	*4*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
schtab	2	1.098901099	*Schoenoplectus*	*soft-stem bulrush*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
potfol	2	1.098901099	*Potamogeton foliosus*	*leafy pondweed*	*6*	0.01	0	#####	####	OBL	Native		0	0	-5	
scicyp	2	1.098901099	*Scirpus cyperinus*	*wool-grass*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
						0										
						0										
						0										
						0										
						0										
						0										
						0										
						0										
						0										
						0										
						0										
						0										

Species Richness:

Total Species	17
Native Species	15
Non-Native Species	2
Proportion Native Cover	88.24
Percent Cover Native	98.90
Percent Cover Non-Native	1.10

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	4.27
Unweighted FQI	16.52
Weighted Mean C (wC)	5.81
Weighted FQI (wFQIn)	22.48

Floristic Quality Metrics: All Species

Unweighted Mean C	3.76
Unweighted FQIa	15.52
Weighted Mean C (wCa)	5.74
Weighted FQI (wFQIa)	23.67

Wetland Species:

Mean W	-4.76
Native Wetland Species	15
Percent Native Wetland Species	88.24
Percent Cover Native Wetland Species	99
Percent Wetland Cover	100

Dominance

Percent Total Aerial Coverage	182
50%	91
20%	36.4

SITE NAME: South Channel
COMMUNITY: Mesic Forest Restoration
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

246 102.0746888 189 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	ENTER COVER	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form		W	Dominant
abibal	1	0.414937759	*Abies balsamea*	*balsam fir*	*5*	0.01	0	#####	####	FACW	Native	perennial	tree		-3	
aceneg	40	16.59751037	*Acer negundo*	*box elder*	*0*	0.21	0.2	#####	####	FAC	Native	perennial	tree		0	x
acesac	1	0.414937759	*Acer saccharinum*	*silver maple, soft*	*2*	0.01	0	#####	####	FACW	Native	perennial	tree		-3	
achmil	1	0.414937759	*Achillea millefolium*	*common yarrow,*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
agrsto	1	0.414937759	*Agrostis stolonifera*	*creeping bent*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	
allpet	5	2.074688797	*Alliaria petiolata*	*garlic mustard*	*0*	0	0	#####	####	FAC	Introduced	biennial	forb		0	x
alninc	2	0.829875519	*Alnus incana*	*speckled alder, tag*	*4*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
ambart	1	0.414937759	*Ambrosia artemisiifolia*	*short ragweed*	*0*	0.01	0	#####	####	FACU	Native	annual	forb		3	
anecan	1	0.414937759	*Anemone canadensis*	*Canada anemone*	*4*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
arcmin	1	0.414937759	*Arctium minus*	*common burdock,*	*0*	0	0	#####	####	FACU	Introduced	biennial	forb		3	
ascsyr	5	2.074688797	*Asclepias syriaca*	*common milkweed*	*1*	0.03	0	#####	####	UPL	Native	perennial	forb		5	x
athfil	1	0.414937759	*Athyrium filix-femina*	*common lady fern*	*5*	0.01	0	#####	####	FAC	Native	perennial	fern		0	
barvul	1	0.414937759	*Barbarea vulgaris*	*winter-cress,*	*0*	0	0	#####	####	FAC	Introduced	biennial/per	forb		0	
betpap	1	0.414937759	*Betula papyrifera*	*paper birch*	*3*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
broine	1	0.414937759	*Bromus inermis*	*Smooth brome*	*0*	0	0	#####	####	UPL	Introduced	perennial	grass		5	
brotec	1	0.414937759	*Bromus tectorum*	*cheat grass,*	*0*	0	0	#####	####	UPL	Introduced	annual	grass		5	
calcan	2	0.829875519	*Calamagrostis canadensis*	*blue-joint grass*	*5*	0.01	0	#####	####	OBL	Native	perennial	grass		-5	
caraqu	1	0.414937759	*Carex aquatilis*	*water sedge*	*7*	0.01	0	#####	####	OBL	Native		0	0	-5	
carbeb	1	0.414937759	*Carex bebbii*	*Bebb's sedge*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carhys	1	0.414937759	*Carex hystericina*	*bottlebrush sedge,*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carsti	1	0.414937759	*Carex stipata*	*common fox sedge*	*2*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
carvul	1	0.414937759	*Carex vulpinoidea*	*brown fox sedge*	*2*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
celocc	1	0.414937759	*Celtis occidentalis*	*northern*	*4*	0.01	0	#####	####	FAC	Native	perennial	tree		0	
censto	2	0.829875519	*Centaurea stoebe*	*spotted knapweed*	*0*	0	0	#####	####	UPL	Introduced	biennial/per	forb		5	
cerfon	2	0.829875519	*Cerastium fontanum*	*common mouse-*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
cirarv	1	0.414937759	*Cirsium arvense*	*Canada thistle,*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
corser	1	0.414937759	*Cornus sericea*	*red osier dogwood*	*3*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
cynoff	2	0.829875519	*Cynoglossum officinale*	*common hound's-*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
dacglo	1	0.414937759	*Dactylis glomerata*	*orchard grass*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
daucar	2	0.829875519	*Daucus carota*	*Queen Anne's-lace*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
despin	1	0.414937759	*Descurainia pinnata*	*pinnate tansy*	*0*	0.01	0	#####	####	0	Native		0	0	x	
drymar	1	0.414937759	*Dryopteris marginalis*	*marginal shield*	*9*	0.01	0	#####	####	FACU	Native	perennial	fern		3	
elyrep	1	0.414937759	*Elymus repens*	*quackgrass*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
equarv	1	0.414937759	*Equisetum arvense*	*field horsetail*	*1*	0.01	0	#####	####	FAC	Native	perennial	fern ally		0	
erehie	2	0.829875519	*Erechtites hieraciifolius*	*fireweed*	*2*	0.01	0	#####	####	UPL	Native	annual	forb		5	
eristr	1	0.414937759	*Erigeron strigosus*	*rough fleabane*	*2*	0.01	0	#####	####	FACU	Native	annual	forb		3	
eryche	1	0.414937759	*Erysimum cheiranthoides*	*worm-seed*	*0*	0	0	#####	####	FACU	Introduced	annual	forb		3	
fravir	1	0.414937759	*Fragaria virginiana*	*wild strawberry*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
fraaln	1	0.414937759	*Frangula alnus*	*glossy buckthorn*	*0*	0	0	#####	####	FAC	Introduced	perennial	shrub		0	
frapen	5	2.074688797	*Fraxinus pennsylvanica*	*green ash, red ash*	*2*	0.03	0	#####	####	FACW	Native	perennial	tree		-3	x
galtet	1	0.414937759	*Galeopsis tetrahit*	*brittle-stem hemp-*	*0*	0	0	#####	####	0	Introduced	annual	forb		x	
galbor	1	0.414937759	*Galium boreale*	*northern bedstraw*	*5*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
geuale	1	0.414937759	*Geum aleppicum*	*yellow avens*	*3*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
hesmat	1	0.414937759	*Hesperis matronalis*	*dame's rocket*	*0*	0	0	#####	####	FACU	Introduced	biennial/per	forb		3	
horjub	1	0.414937759	*Hordeum jubatum*	*foxtail barley,*	*0*	0	0	#####	####	FAC	Introduced	perennial	grass		0	
impcap	1	0.414937759	*Impatiens capensis*	*orange jewelweed*	*2*	0.01	0	#####	####	FACW	Native	annual	forb		-3	
jugnig	2	0.829875519	*Juglans nigra*	*black walnut*	*3*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
junten	1	0.414937759	*Juncus tenuis*	*path rush*	*1*	0.01	0	#####	####	FAC	Native	perennial	rush		0	
juncom	1	0.414937759	*Juniperus communis*	*common juniper*	*3*	0.01	0	#####	####	UPL	Native	perennial	shrub		5	
elyvir	25	10.37344398	*Elymus virginicus*	*Virginia wild-rye*	*6*	0.13	0.1	#####	####	FACW	Native	perennial	grass		-3	x
concan	10	4.149377593	*Conyza canadensis*	*Canadian*	*0*	0.05	0	#####	####	0	Native		0	0	x	x
echcru	1	0.414937759	*Echinochloa crus-galli*	*barnyard grass,*	*0*	0	0	#####	####	FACW	Introduced	annual	grass		-3	
oenvil	1	0.414937759	*Oenothera villosa*	*hairy evening-*	*3*	0.01	0	#####	####	FAC	Native	biennial/per	forb		0	
agealt	1	0.414937759	*Ageratina altissima*	*white snakeroot*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
hypper	2	0.829875519	*Hypericum perforatum*	*St. John's-wort*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
leocar	1	0.414937759	*Leonurus cardiaca*	*lion's-tail,*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
leuvul	1	0.414937759	*Leucanthemum vulgare*	*common daisy,*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
linvul	2	0.829875519	*Linaria vulgaris*	*butter-and-eggs*	*0*	0	0	#####	####	UPL	Introduced	perennial	forb		5	
lontat	1	0.414937759	*Lonicera tatarica*	*Tartarian*	*0*	0	0	#####	####	FACU	Introduced	perennial	shrub		3	
lotcor	1	0.414937759	*Lotus corniculatus*	*bird's-foot trefoil*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
lycame	1	0.414937759	*Lycopus americanus*	*common water-*	*4*	0.01	0	#####	####	OBL	Native	perennial	forb		-5	
medlup	1	0.414937759	*Medicago lupulina*	*black medick*	*0*	0	0	#####	####	FACU	Introduced	annual/bien	forb		3	
meloff	1	0.414937759	*Melilotus officinalis*	*yellow sweet-*	*0*	0	0	#####	####	FACU	Introduced	annual/bien	forb		3	
nepcat	1	0.414937759	*Nepeta cataria*	*catnip*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
osmcla1	1	0.414937759	*Osmorhiza claytonii*	*bland sweet cicely,*	*5*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
oxastr	1	0.414937759	*Oxalis stricta*	*common yellow*	*0*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
parqui	1	0.414937759	*Parthenocissus quinquefolia*	*Virginia creeper,*	*5*	0.01	0	#####	####	FACU	Native	perennial	vine		3	
permac	1	0.414937759	*Persicaria maculosa*	*heart's-ease,*	*0*	0	0	#####	####	FACW	Introduced	annual		0	-3	
phaaru	2	0.829875519	*Phalaris arundinacea*	*reed canary grass*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	
phlpra	1	0.414937759	*Phleum pratense*	*timothy*	*0*	0	0	#####	####	FACU	Introduced	perennial	grass		3	
picgla	1	0.414937759	*Picea glauca*	*white spruce*	*7*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
pinstr	1	0.414937759	*Pinus strobus*	*eastern white pine*	*5*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
plamaj	1	0.414937759	*Plantago major*	*common plantain*	*0*	0	0	#####	####	FAC	Introduced	perennial	forb		0	
poapra	2	0.829875519	*Poa pratensis*	*Kentucky*	*0*	0	0	#####	####	FAC	Introduced	perennial	grass		0	
polavi	1	0.414937759	*Polygonum aviculare*	*common*	*0*	0	0	#####	####	FAC	Introduced	annual	forb		0	
popbal	10	4.149377593	*Populus balsamifera*	*balsam poplar,*	*4*	0.05	0	#####	####	FACW	Native	perennial	tree		-3	x
popdel	10	4.149377593	*Populus deltoides*	*eastern*	*2*	0.05	0	#####	####	FAC	Native	perennial	tree		0	x
poptre	2	0.829875519	*Populus tremuloides*	*aspen, quaking*	*2*	0.01	0	#####	####	FAC	Native	perennial	tree		0	
potnor	1	0.414937759	*Potentilla norvegica*	*Norwegian*	*0*	0.01	0	#####	####	FAC	Native	annual/pere	forb		0	
pruvul	1	0.414937759	*Prunella vulgaris*	*heal-all*	*1*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
querub	1	0.414937759	*Quercus rubra*	*northern red oak*	*5*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
ribame	1	0.414937759	*Ribes americanum*	*American black*	*4*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
rubida	1	0.414937759	*Rubus idaeus*	*wild red raspberry*	*3*	0.01	0	#####	####	FAC	Native	perennial	shrub		0	
rumcri	1	0.414937759	*Rumex crispus*	*curly dock*	*0*	0	0	#####	####	FAC	Introduced	perennial	forb		0	
salint	1	0.414937759	*Salix interior*	*sandbar willow*	*2*	0.01	0	#####	####	FACW	Native	perennial	shrub		-3	
salnig	10	4.149377593	*Salix nigra*	*black willow*	*4*	0.05	0	#####	####	OBL	Native	perennial	tree		-5	x
samcan	1	0.414937759	*Sambucus canadensis*	*elderberry*	*3*	0.01	0	#####	####	FACU	Native	perennial	shrub		3	
sciatr	1	0.414937759	*Scirpus atrovirens*	*dark-green*	*3*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
scicyp	1	0.414937759	*Scirpus cyperinus*	*wool-grass*	*4*	0.01	0	#####	####	OBL	Native	perennial	sedge		-5	
silvul	1	0.414937759	*Silene vulgaris*	*bladder-campion,*	*0*	0	0	#####	####	0	Introduced	perennial	forb		x	
solcan	1	0.414937759	*Solidago canadensis*	*Canadian*	*1*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
sonarv	1	0.414937759	*Sonchus arvensis*	*field sow-thistle*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
stapal	1	0.414937759	*Stachys palustris*	*hedge-nettle,*	*5*	0.01	0	#####	####	OBL	Native	perennial	forb		-5	
taroff	1	0.414937759	*Taraxacum officinale*	*common*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
thadio	1	0.414937759	*Thalictrum dioicum*	*early meadow-rue*	*7*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
thuocc	5	2.074688797	*Thuja occidentalis*	*northern white-*	*9*	0.03	0	#####	####	FACW	Native	perennial	tree		-3	x
tilame	1	0.414937759	*Tilia americana*	*American linden,*	*5*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
trirep	1	0.414937759	*Trifolium repens*	*white clover*	*0*	0	0	#####	####	FACU	Introduced	perennial	forb		3	
tsucan	1	0.414937759	*Tsuga canadensis*	*northern hemlock*	*8*	0.01	0	#####	####	FACU	Native	perennial	tree		3	
ulmrub	1	0.414937759	*Ulmus rubra*	*red elm, slippery*	*4*	0.01	0	#####	####	FAC	Native	perennial	tree		0	
urtdio	1	0.414937759	*Urtica dioica*	*stinging nettle*	*1*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
vertha	1	0.414937759	*Verbascum thapsus*	*common mullein*	*0*	0	0	#####	####	UPL	Introduced	biennial	forb		5	
verhas	2	0.829875519	*Verbena hastata*	*blue vervain,*	*3*	0.01	0	#####	####	FACW	Native	biennial/per	forb		-3	
vibtri	1	0.414937759	*Viburnum trilobum*	*American*	*6*	0.01	0	#####	####	FAC	Native	perennial	shrub		0	
viosor	1	0.414937759	*Viola sororia*	*common blue*	*3*	0.01	0	#####	####	FAC	Native	annual/pere	forb		0	
vitrip	1	0.414937759	*Vitis riparia*	*river bank grape*	*2*	0.01	0	#####	####	FAC	Native	perennial	vine		0	
zizaur	1	0.414937759	*Zizia aurea*	*golden alexanders*	*7*	0.01	0	#####	####	FAC	Native	perennial	forb		0	
phyvir	1	0.414937759	*Physostegia virginiana*	*obedience plant*	*7*	0.01	0	#####	####	FACW	Native		0	0	-3	
setpum	2	0.829875519	*Setaria pumila*	*pigeon grass,*	*0*	0	0	#####	####	FAC	Introduced	annual	grass		0	
lobsip	1	0.414937759	*Lobelia siphilitica*	*great blue lobelia*	*5*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
lytsal	1	0.414937759	*Lythrum salicaria*	*purple loosestrife*	*0*	0	0	#####	####	OBL	Introduced	perennial	forb		-5	
solgig	2	0.829875519	*Solidago gigantea*	*giant goldenrod*	*3*	0.01	0	#####	####	FACW	Native	perennial	forb		-3	
traohi	1	0.414937759	*Tradescantia ohiensis*	*blue-jacket,*	*5*	0.01	0	#####	####	FACU	Native	perennial	forb		3	
phraus	1	0.414937759	*Phragmites australis*	*common reed*	*0*	0	0	#####	####	FACW	Introduced	perennial	grass		-3	
melalb	1	0.414937759	*Melilotus albus*	*white sweet-clover*	*0*	0	0	#####	####	FACU	Introduced	annual/bien	forb		3	

Species Richness:

Total Species	115
Native Species	64
Non-Native Species	51
Proportion Native Cover	55.65
Percent Cover Native	78.42
Percent Cover Non-Native	21.58

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	3.80
Unweighted FQI	30.38
Weighted Mean C (wC)	2.89
Weighted FQI (wFQIn)	23.15

Floristic Quality Metrics: All Species

Unweighted Mean C	2.11
Unweighted FQIa	22.66
Weighted Mean C (wCa)	2.22
Weighted FQI (wFQIa)	23.85

Wetland Species:

Mean W	0.44
Native Wetland Species	46
Percent Native Wetland Species	40.00
Percent Cover Native Wetland Species	62
Percent Wetland Cover	71

Dominance

Percent Total Aerial Coverage	246
50%	123
20%	49.2

SITE NAME: South Channel
COMMUNITY: Site Summary/Comprehensive Species List
COUNTY: Marinette
PLOT NUMBER:
SURVEYORS: LaPlant/Linder
SURVEY DATE: August 22nd & 23rd, 2018
COMMENTS:

177.00 99.72 146.75 1 1

ENTER SPECIES CODE (i.e.Carex stricta= CARSTR)	Cover	Relative Cover	*Latin Name*	Common Name	C-Value	p(n)	p(a)	pC(n)	pC(a)	Wetland Indicator Status (MW/NCNE)	Origin	Duration	Form		W	Dominant
abibal	0.125	0.07	*Abies*	*balsam fir*	5	0	7E-04	#####	0.00353	FACW	Native	perennial	tree		-3	
aceneg	8.25	4.65	*Acer negundo*	*box elder*	0	0.06	0.047	#####	0.00000	FAC	Native	perennial	tree		0	
acerub	0.25	0.14	*Acer rubrum*	*red maple*	3	0	0.001	#####	0.00424	FAC	Native	perennial	tree		0	
acesac	0.75	0.42	*Acer*	*silver maple, soft maple*	2	0.01	0.004	#####	0.00847	FACW	Native	perennial	tree		-3	
achmil	0.5	0.28	*Achillea*	*common yarrow, milfoil*	1	0	0.003	#####	0.00282	FACU	Native	perennial	forb		3	
agapau	0.125	0.07	*Agalinis*	*small-flowered false foxglove,*	7	0	7E-04	#####	0.00494	OBL	Native	annual	forb		-5	
agealt	0.125	0.07	*Ageratina*	*white snakeroot*	1	0	7E-04	#####	0.00071	FACU	Native	perennial	forb		3	
agrsto	1	0.56	*Agrostis*	*creeping bent grass, creeping*	0	0	0.006	#####	0.00000	FACW	Introduced	perennial	grass		-3	
alitri	0.75	0.42	*Alisma triviale*	*northern water-plantain*	4	0.01	0.004	#####	0.01695	OBL	Native	perennial	semi-aquatic		-5	
allpet	0.75	0.42	*Alliaria*	*garlic mustard*	0	0	0.004	#####	0.00000	FAC	Introduced	biennial	forb		0	
allste	0.125	0.07	*Allium*	*Autumn onion, prairie onion, wild*	9	0	7E-04	#####	0.00636	0	Native	perennial	forb	x		
alninc	6.375	3.59	*Alnus incana*	*speckled alder, tag alder*	4	0.04	0.036	#####	0.14407	FACW	Native	perennial	shrub		-3	
ambart	0.375	0.21	*Ambrosia*	*short ragweed*	0	0	0.002	#####	0.00000	FACU	Native	annual	forb		3	
andger	0.75	0.42	*Andropogon*	*big blue-stem, turkey-foot*	4	0.01	0.004	#####	0.01695	FAC	Native	perennial	grass		0	
anecan	0.125	0.07	*Anemone*	*Canada anemone*	4	0	7E-04	#####	0.00282	FACW	Native	perennial	forb		-3	
arcmin	0.125	0.07	*Arctium*	*common burdock, lesser burdock*	0	0	7E-04	#####	0.00000	FACU	Introduced	biennial	forb		3	
ascsyr	2.375	1.34	*Asclepias*	*common milkweed*	1	0.02	0.013	#####	0.01342	UPL	Native	perennial	forb		5	
athfil	0.125	0.07	*Athyrium filix-*	*common lady fern*	5	0	7E-04	#####	0.00353	FAC	Native	perennial	fern		0	
barvul	0.375	0.21	*Barbarea*	*winter-cress, yellow-rocket*	0	0	0.002	#####	0.00000	FAC	Introduced	biennial/per	forb		0	
berinc	0.375	0.21	*Berteroa*	*hoary false madwort, hoary-*	0	0	0.002	#####	0.00000	0	Introduced	annual/perenn	forb	x		
betpap	0.125	0.07	*Betula*	*paper birch*	3	0	7E-04	#####	0.00212	FACU	Native	perennial	tree		3	
betpum	0.125	0.07	*Betula pumila*	*bog birch, dwarf birch, swamp*	7	0	7E-04	#####	0.00494	OBL	Native	perennial	shrub		-5	
bidcer	2.75	1.55	*Bidens cernua*	*nodding beggar-ticks*	4	0.02	0.016	#####	0.06215	OBL	Native	annual	forb		-5	
bidfro	0.125	0.07	*Bidens*	*common beggar-ticks*	1	0	7E-04	#####	0.00071	FACW	Native	annual	forb		-3	
boucur	0.625	0.35	*Bouteloua*	*side-oats grama*	6	0	0.004	#####	0.02119	0	Native		0	0 x		
branig	0.125	0.07	*Brassica nigra*	*black mustard*	0	0	7E-04	#####	0.00000	0	Introduced	annual	forb	x		
broine	0.375	0.21	*Bromus*	*Smooth brome*	0	0	0.002	#####	0.00000	UPL	Introduced	perennial	grass		5	
brotec	0.125	0.07	*Bromus*	*cheat grass, downy brome,*	0	0	7E-04	#####	0.00000	UPL	Introduced	annual	grass		5	
calcan	3.5	1.97	*Calamagrostis*	*blue-joint grass*	5	0.02	0.02	#####	0.09887	OBL	Native	perennial	grass		-5	
caltpal	0.125	0.07	*Caltha*	*cowslip, marsh-marigold, yellow*	6	0	7E-04	#####	0.00424	OBL	Native	perennial	forb		-5	
capbur	0.125	0.07	*Capsella*	*shepherd's-purse*	0	0	7E-04	#####	0.00000	FACU	Introduced	annual	forb		3	
caraqu	0.5	0.28	*Carex*	*water sedge*	7	0	0.003	#####	0.01977	OBL	Native		0	0	-5	
carbeb	1.125	0.63	*Carex bebbii*	*Bebb's sedge*	4	0.01	0.006	#####	0.02542	OBL	Native	perennial	sedge		-5	
carcom	1.25	0.70	*Carex comosa*	*bristly sedge*	5	0.01	0.007	#####	0.03531	OBL	Native	perennial	sedge		-5	
carhys	0.375	0.21	*Carex*	*bottlebrush sedge, porcupine*	3	0	0.002	#####	0.00636	OBL	Native	perennial	sedge		-5	
carlac	1.25	0.70	*Carex*	*common lake sedge*	6	0.01	0.007	#####	0.04237	OBL	Native	perennial	sedge		-5	
carret	0.875	0.49	*Carex retrorsa*	*deflexed bottlebrush sedge, knot-*	6	0.01	0.005	#####	0.02966	OBL	Native	perennial	sedge		-5	
carsco	0.125	0.07	*Carex*	*broom sedge*	4	0	7E-04	#####	0.00282	FACW	Native	perennial	sedge		-3	
carsti	0.75	0.42	*Carex stipata*	*common fox sedge*	2	0.01	0.004	#####	0.00847	OBL	Native	perennial	sedge		-5	
carvul	0.875	0.49	*Carex*	*brown fox sedge*	2	0.01	0.005	#####	0.00989	OBL	Native	perennial	sedge		-5	
celocc	0.125	0.07	*Celtis*	*northern hackberry*	4	0	7E-04	#####	0.00282	FAC	Native	perennial	tree		0	
censto	0.5	0.28	*Centaurea*	*spotted knapweed*	0	0	0.003	#####	0.00000	UPL	Introduced	biennial/per	forb		5	
cerdem	0.125	0.07	*Ceratophyllu*	*coon's-tail, hornwort*	3	0	7E-04	#####	0.00212	OBL	Native	perennial	aquatic		-5	
cerfon	0.25	0.14	*Cerastium*	*common mouse-ear chickweed*	0	0	0.001	#####	0.00000	FACU	Introduced	perennial	forb		3	
chealb	0.125	0.07	*Chenopodium*	*common lamb's-quarters*	0	0	7E-04	#####	0.00000	FACU	Native	annual	forb		3	
cicbul	0.125	0.07	*Cicuta*	*bulblet water-hemlock*	7	0	7E-04	#####	0.00494	OBL	Native	perennial	forb		-5	
cicmac	0.125	0.07	*Cicuta*	*spotted water-hemlock*	6	0	7E-04	#####	0.00424	OBL	Native	perennial	forb		-5	
cirarv	0.625	0.35	*Cirsium*	*Canada thistle, creeping thistle,*	0	0	0.004	#####	0.00000	FACU	Introduced	perennial	forb		3	
cirvul	0.625	0.35	*Cirsium*	*bull thistle, common thistle*	0	0	0.004	#####	0.00000	FACU	Introduced	biennial	forb		3	
conarv	0.125	0.07	*Convolvulus*	*field bindweed*	0	0	7E-04	#####	0.00000	UPL	Introduced	perennial	vine		5	
concan	2.5	1.41	*Conyza*	*Canadian horseweed, fleabane,*	0	0.02	0.014	#####	0.00000	0	Native		0	0 x		
corser	0.75	0.42	*Cornus*	*red osier dogwood*	3	0.01	0.004	#####	0.01271	FACW	Native	perennial	shrub		-3	
cynoff	0.875	0.49	*Cynoglossum*	*common hound's-tongue, gypsy-*	0	0	0.005	#####	0.00000	UPL	Introduced	biennial	forb		5	
cypbip	0.5	0.28	*Cyperus*	*shining flat sedge, slender flat*	3	0	0.003	#####	0.00847	FACW	Native	annual	sedge		-3	
cypesc	0.75	0.42	*Cyperus*	*field nut sedge*	0	0.01	0.004	#####	0.00000	FACW	Native		0	0	-3	
dacglo	0.25	0.14	*Dactylis*	*orchard grass*	0	0	0.001	#####	0.00000	FACU	Introduced	perennial	grass		3	
daucar	0.5	0.28	*Daucus carota*	*Queen Anne's-lace*	0	0	0.003	#####	0.00000	UPL	Introduced	biennial	forb		5	
despin	0.25	0.14	*Descurainia*	*pinnate tansy mustard, western*	0	0	0.001	#####	0.00000	0	Native		0	0 x		
drymar	0.125	0.07	*Dryopteris*	*marginal shield fern, marginal*	9	0	7E-04	#####	0.00636	FACU	Native	perennial	fern		3	
echcru	0.75	0.42	*Echinochloa*	*barnyard grass, large barnyard*	0	0	0.004	#####	0.00000	FACW	Introduced	annual	grass		-3	
echlob	0.125	0.07	*Echinocystis*	*balsam-apple, wild-cucumber*	2	0	7E-04	#####	0.00141	FACW	Native	annual	vine		-3	
eleaci	2.75	1.55	*Eleocharis*	*needle spike-rush*	5	0.02	0.016	#####	0.07768	OBL	Native	perennial/	sedge		-5	
eleobt	0.125	0.07	*Eleocharis*	*blunt spike-rush*	3	0	7E-04	#####	0.00212	OBL	Native	annual/perenn	sedge		-5	
elepal	0.375	0.21	*Eleocharis*	*common spike-rush, marsh spike-*	6	0	0.002	#####	0.01271	OBL	Native	perennial	sedge		-5	
elycan	3.375	1.90	*Elymus*	*Canada wild-rye, Great Plains*	4	0.02	0.019	#####	0.07627	FACU	Native	perennial	grass		3	
elyhys	0.25	0.14	*Elymus hystrix*	*bottlebrush grass, eastern*	6	0	0.001	#####	0.00847	FACU	Native	perennial	grass		3	
elyrep	0.75	0.42	*Elymus repens*	*quackgrass*	0	0	0.004	#####	0.00000	FACU	Introduced	perennial	grass		3	
elyvir	3.5	1.97	*Elymus*	*Virginia wild-rye*	6	0.02	0.02	#####	0.11864	FACW	Native	perennial	grass		-3	
epicil	0.125	0.07	*Epilobium*	*hairy willow-herb*	3	0	7E-04	#####	0.00212	FACW	Native	perennial	forb		-3	
equarv	0.125	0.07	*Equisetum*	*field horsetail*	1	0	7E-04	#####	0.00071	FAC	Native	perennial	fern ally		0	
erehie	0.875	0.49	*Erechtites*	*fireweed*	2	0.01	0.005	#####	0.00989	UPL	Native	annual	forb		5	
eristr	0.25	0.14	*Erigeron*	*rough fleabane*	2	0	0.001	#####	0.00282	FACU	Native	annual	forb		3	
erugal	0.125	0.07	*Erucastrum*	*common dog-mustard, dog-*	0	0	7E-04	#####	0.00000	0	Introduced	annual/bien	forb	x		
eryche	0.75	0.42	*Erysimum*	*worm-seed mustard, worm-seed*	0	0	0.004	#####	0.00000	FACU	Introduced	annual	forb		3	
eupper	0.375	0.21	*Eupatorium*	*boneset*	6	0	0.002	#####	0.01271	FACW	Native	perennial	forb		-3	
falcon	0.5	0.28	*Fallopia*	*black-bindweed, false buckwheat*	0	0	0.003	#####	0.00000	FACU	Introduced		0	0	3	
fraaln	0.375	0.21	*Frangula*	*glossy buckthorn*	0	0	0.002	#####	0.00000	FAC	Introduced	perennial	shrub		0	
frapen	6.625	3.73	*Fraxinus*	*green ash, red ash*	2	0.05	0.037	#####	0.07486	FACW	Native	perennial	tree		-3	
fravir	0.375	0.21	*Fragaria*	*wild strawberry*	1	0	0.002	#####	0.00212	FACU	Native	perennial	forb		3	
galbor	0.125	0.07	*Galium*	*northern bedstraw*	5	0	7E-04	#####	0.00353	FAC	Native	perennial	forb		0	
galtet	0.875	0.49	*Galeopsis*	*brittle-stem hemp-nettle,*	0	0	0.005	#####	0.00000	0	Introduced	annual	forb	x		
geuale	0.125	0.07	*Geum*	*yellow avens*	3	0	7E-04	#####	0.00212	FAC	Native	perennial	forb		0	
glehed	1	0.56	*Glechoma*	*creeping-Charlie*	0	0	0.006	#####	0.00000	FACU	Introduced	perennial	forb		3	
glygra	0.5	0.28	*Glyceria*	*American manna grass*	6	0	0.003	#####	0.01695	OBL	Native	perennial	grass		-5	
glystr	0.5	0.28	*Glyceria*	*fowl manna grass*	4	0	0.003	#####	0.01130	OBL	Native	perennial	grass		-5	
hesmat	0.75	0.42	*Hesperis*	*dame's rocket*	0	0	0.004	#####	0.00000	FACU	Introduced	biennial/per	forb		3	
hiecae	0.125	0.07	*Hieracium*	*field hawkweed*	0	0	7E-04	#####	0.00000	0	Introduced	perennial	forb	x		
horjub	0.125	0.07	*Hordeum*	*foxtail barley, squirrel-tail grass*	0	0	7E-04	#####	0.00000	FAC	Introduced	perennial	grass		0	
hypper	0.25	0.14	*Hypericum*	*St. John's-wort*	0	0	0.001	#####	0.00000	UPL	Introduced	perennial	forb		5	
impcap	0.625	0.35	*Impatiens*	*orange jewelweed*	2	0	0.004	#####	0.00706	FACW	Native	annual	forb		-3	
iriver	0.5	0.28	*Iris versicolor*	*northern blue flag*	5	0	0.003	#####	0.01412	OBL	Native	perennial	forb		-5	
jugnig	0.25	0.14	*Juglans nigra*	*black walnut*	3	0	0.001	#####	0.00424	FACU	Native	perennial	tree		3	
junbre	0.125	0.07	*Juncus*	*narrow-panicle rush*	6	0	7E-04	#####	0.00424	OBL	Native	perennial	rush		-5	
juncan	0.125	0.07	*Juncus*	*Canadian rush*	7	0	7E-04	#####	0.00494	OBL	Native	perennial	rush		-5	
juncom	0.125	0.07	*Juniperus*	*common juniper*	3	0	7E-04	#####	0.00212	UPL	Native	perennial	shrub		5	
jundud	0.375	0.21	*Juncus dudleyi*	*Dudley's rush*	4	0	0.002	#####	0.00847	FACW	Native	perennial	rush		-3	
juneff	0.625	0.35	*Juncus effusus*	*common rush, soft rush*	4	0	0.004	#####	0.01412	OBL	Native	perennial	rush		-5	
junnod	0.375	0.21	*Juncus*	*joint rush*	6	0	0.002	#####	0.01271	OBL	Native	perennial	rush		-5	
junten	1.25	0.70	*Juncus tenuis*	*path rush*	1	0.01	0.007	#####	0.00706	FAC	Native	perennial	rush		0	
lapsqu	0.125	0.07	*Lappula*	*European stickseed, spiny*	0	0	7E-04	#####	0.00000	0	Introduced	annual	forb	x		
larlar	0.125	0.07	*Larix laricina*	*larch, tamarack*	8	0	7E-04	#####	0.00565	FACW	Native	perennial	tree		-3	
leeory	3.25	1.83	*Leersia*	*rice cutgrass*	3	0.02	0.018	#####	0.05508	OBL	Native	perennial	grass		-5	
lemmin	7	3.94	*Lemna minor*	*common duckweed*	4	0.05	0.04	#####	0.15819	OBL	Native	perennial	aquatic		-5	
leocar	0.75	0.42	*Leonurus*	*lion's-tail, motherwort*	0	0	0.004	#####	0.00000	0	Introduced	perennial	forb	x		
leuvul	0.625	0.35	*Leucanthemu*	*common daisy, field daisy,*	0	0	0.004	#####	0.00000	UPL	Introduced	perennial	forb		5	

Species Richness:

Total Species	219
Native Species	155
Non-Native Species	64
Proportion Native Cover	70.78
Percent Cover Native	82.68
Percent Cover Non-Native	17.32

Floristic Quality Metrics: Native Species Only

Unweighted Mean C	4.16
Unweighted FQI	51.81
Weighted Mean C (wC)	3.97
Weighted FQI (wFQIn)	49.47

Floristic Quality Metrics: All Species

Unweighted Mean C	2.95
Unweighted FQIa	43.59
Weighted Mean C (wCa)	3.29
Weighted FQI (wFQIa)	48.75

Wetland Species:

Mean W	-0.84
Native Wetland Species	112
Percent Native Wetland	51.14
Percent Cover Native	70
Percent Wetland Cover	77

Dominance

Percent Total Aerial Coverage	177.00
50%	88.50
20%	35.40

linvul	0.875	0.49	*Linaria*	*butter-and-eggs*	*0*	0	0.005	#####	*0.00000*	UPL	Introduced	perennial	forb			5
lobcar	0.125	0.07	*Lobelia*	*cardinal-flower*	*7*	0	7E-04	#####	*0.00494*	OBL	Native			0	0	-5
lobsip	0.875	0.49	*Lobelia*	*great blue lobelia*	*5*	0.01	0.005	#####	*0.02472*	FACW	Native	perennial	forb			-3
lolper	0.125	0.07	*Lolium*	*English rye grass, perennial rye*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	perennial	grass			3
loncan	0.125	0.07	*Lonicera*	*American fly honeysuckle*	*8*	0	7E-04	#####	*0.00565*	FACU	Native	perennial	shrub			3
lontat	0.25	0.14	*Lonicera*	*Tartarian honeysuckle*	*0*	0	0.001	#####	*0.00000*	FACU	Introduced	perennial	shrub			3
lotcor	0.125	0.07	*Lotus*	*bird's-foot trefoil*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	perennial	forb			3
ludpal	0.375	0.21	*Ludwigia*	*marsh purslane, marsh seed-box,*	*4*	0	0.002	#####	*0.00847*	OBL	Native	perennial	forb			-5
lycarne	1	0.56	*Lycopus*	*common water-horehound*	*4*	0.01	0.006	#####	*0.02260*	OBL	Native	perennial	forb			-5
lycuni	1	0.56	*Lycopus*	*northern water-horehound*	*4*	0.01	0.006	#####	*0.02260*	OBL	Native	perennial	forb			-5
lytsal	0.75	0.42	*Lythrum*	*purple loosestrife*	*0*	0	0.004	#####	*0.00000*	OBL	Introduced	perennial	forb			-5
matdis	0.125	0.07	*Matricaria*	*pineapple-weed*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	annual	forb			3
medlup	0.5	0.28	*Medicago*	*black medick*	*0*	0	0.003	#####	*0.00000*	FACU	Introduced	annual/biennial	forb			3
melalb	0.25	0.14	*Melilotus*	*white sweet-clover*	*0*	0	0.001	#####	*0.00000*	FACU	Introduced	annual/biennial	forb			3
meloff	0.125	0.07	*Melilotus*	*yellow sweet-clover*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	annual/biennial	forb			3
mencan	0.375	0.21	*Mentha*	*field mint, wild mint*	*3*	0	0.002	#####	*0.00636*	FACW	Native	perennial	forb			-3
mimrin	0.5	0.28	*Mimulus*	*monkey-flower*	*6*	0	0.003	#####	*0.01695*	OBL	Native			0	0	-5
monfis	2.5	1.41	*Monarda*	*bee balm, wild bergamot*	*3*	0.02	0.014	#####	*0.04237*	FACU	Native	perennial	forb			3
myrsib	7.5	4.23	*Myriophyllum*	*common water-milfoil, short-*	*6*	0.05	0.042	#####	*0.25424*	OBL	Native	perennial	aquatic			-5
nepcat	0.875	0.49	*Nepeta*	*catnip*	*0*	0	0.005	#####	*0.00000*	FACU	Introduced	perennial	forb			3
nupadv	0.125	0.07	*Nuphar*	*yellow pond-lily, yellow water-lily*	*8*	0	7E-04	#####	*0.00565*	OBL	Native	perennial	aquatic			-5
nymodo	0.625	0.35	*Nymphaea*	*fragrant water-lily*	*6*	0	0.004	#####	*0.02119*	OBL	Native	perennial	aquatic			-5
oenvil	0.125	0.07	*Oenothera*	*hairy evening-primrose*	*3*	0	7E-04	#####	*0.00212*	FAC	Native	biennial/perennial	forb			0
onosen	0.375	0.21	*Onoclea*	*sensitive fern*	*5*	0	0.002	#####	*0.01059*	FACW	Native	perennial	fern			-3
osmcin	0.375	0.21	*Osmunda*	*cinnamon fern*	*7*	0	0.002	#####	*0.01483*	0	Native	perennial	fern	x		
osmcla1	0.125	0.07	*Osmorhiza*	*bland sweet cicely, Clayton's*	*5*	0	7E-04	#####	*0.00353*	FACU	Native	perennial	forb			3
osmreg	0.125	0.07	*Osmunda*	*royal fern*	*7*	0	7E-04	#####	*0.00494*	0	Native	perennial	fern	x		
oxastr	0.75	0.42	*Oxalis stricta*	*common yellow oxalis*	*0*	0.01	0.004	#####	*0.00000*	FACU	Native	perennial	forb			3
pancap	0.5	0.28	*Panicum*	*witch grass*	*1*	0	0.003	#####	*0.00282*	FAC	Native			0	0	0
panvir	0.25	0.14	*Panicum*	*switch grass*	*4*	0	0.001	#####	*0.00565*	FAC	Native	perennial	grass			0
parqui	0.375	0.21	*Parthenocissu*	*Virginia creeper, woodbine*	*5*	0	0.002	#####	*0.01059*	FACU	Native	perennial	vine			3
pensed	0.25	0.14	*Penthorum*	*ditch stonecrop*	*3*	0	0.001	#####	*0.00424*	OBL	Native	perennial	forb			-5
percar	0.125	0.07	*Persicaria*	*Carey's heart's-ease, Carey's*	*6*	0	7E-04	#####	*0.00424*	FACW	Native	annual	forb			-3
perhyd	1.75	0.99	*Persicaria*	*marsh-pepper smartweed, water-*	*0*	0	0.01	#####	*0.00000*	OBL	Introduced	annual	forb			-5
permac	0.75	0.42	*Persicaria*	*heart's-ease, spotted lady's-*	*0*	0	0.004	#####	*0.00000*	FACW	Introduced	annual			0	-3
perpen	0.125	0.07	*Persicaria*	*Pennsylvania knotweed*	*1*	0	7E-04	#####	*0.00071*	FACW	Native	annual	forb			-3
persag	0.125	0.07	*Persicaria*	*arrow-leaved tearthumb*	*6*	0	7E-04	#####	*0.00424*	OBL	Native	annual	vine			-5
phaaru	1.875	1.06	*Phalaris*	*reed canary grass*	*0*	0	0.011	#####	*0.00000*	FACW	Introduced	perennial	grass			-3
phlpra	0.375	0.21	*Phleum*	*timothy*	*0*	0	0.002	#####	*0.00000*	FACU	Introduced	perennial	grass			3
phraus	0.5	0.28	*Phragmites*	*common reed grass*	*0*	0	0.003	#####	*0.00000*	FACW	Introduced	perennial	grass			-3
phyvir	0.375	0.21	*Physostegia*	*obedience plant*	*7*	0	0.002	#####	*0.01483*	FACW	Native			0	0	-3
picgla	0.25	0.14	*Picea glauca*	*white spruce*	*7*	0	0.001	#####	*0.00989*	FACU	Native	perennial	tree			3
pilpum	0.875	0.49	*Pilea pumila*	*Canadian clearweed*	*3*	0.01	0.005	#####	*0.01483*	FACW	Native	annual	forb			-3
pinstr	0.25	0.14	*Pinus strobus*	*eastern white pine*	*5*	0	0.001	#####	*0.00706*	FACU	Native	perennial	tree			3
plamaj	0.5	0.28	*Plantago*	*common plantain*	*0*	0	0.003	#####	*0.00000*	FAC	Introduced	perennial	forb			0
poapal	0.5	0.28	*Poa palustris*	*marsh bluegrass*	*5*	0	0.003	#####	*0.01412*	FACW	Native	perennial	grass			-3
poapra	0.375	0.21	*Poa pratensis*	*Kentucky bluegrass*	*0*	0	0.002	#####	*0.00000*	FAC	Introduced	perennial	grass			0
polavi	0.25	0.14	*Polygonum*	*common knotweed*	*0*	0	0.001	#####	*0.00000*	FAC	Introduced	annual	forb			0
poncor	0.25	0.14	*Pontederia*	*pickerel-weed*	*8*	0	0.001	#####	*0.01130*	OBL	Native	perennial	semi-aquatic			-5
popbal	1.25	0.70	*Populus*	*balsam poplar, hackmatack*	*4*	0.01	0.007	#####	*0.02825*	FACW	Native	perennial	tree			-3
popdel	1.5	0.85	*Populus*	*eastern cottonwood*	*2*	0.01	0.008	#####	*0.01695*	FAC	Native	perennial	tree			0
poptre	2.125	1.20	*Populus*	*aspen, quaking aspen, trembling*	*2*	0.01	0.012	#####	*0.02401*	FAC	Native	perennial	tree			0
potans	0.25	0.14	*Potentilla*	*silver-weed*	*4*	0	0.001	#####	*0.00565*	FACW	Native			0	0	-3
potfol	0.625	0.35	*Potamogeton*	*leafy pondweed*	*6*	0	0.004	#####	*0.02119*	OBL	Native			0	0	-5
potnat	1.5	0.85	*Potamogeton*	*common pondweed*	*5*	0.01	0.008	#####	*0.04237*	OBL	Native	perennial	aquatic			-5
potnor	0.75	0.42	*Potentilla*	*Norwegian cinquefoil*	*0*	0.01	0.004	#####	*0.00000*	FAC	Native	annual/perennial	forb			0
potzos	0.125	0.07	*Potamogeton*	*flat-stem pondweed, flat-*	*6*	0	7E-04	#####	*0.00424*	OBL	Native	perennial	aquatic			-5
pruvir	0.125	0.07	*Prunus*	*chokecherry*	*3*	0	7E-04	#####	*0.00212*	FACU	Native	perennial	tree/shrub			3
pruvul	0.25	0.14	*Prunella*	*heal-all*	*1*	0	0.001	#####	*0.00141*	FAC	Native	perennial	forb			0
pycvir	0.125	0.07	*Pycnanthemu*	*common mountain mint*	*6*	0	7E-04	#####	*0.00424*	FACW	Native	perennial	forb			-3
quemac	0.125	0.07	*Quercus*	*bur oak*	*5*	0	7E-04	#####	*0.00353*	FACU	Native	perennial	tree			3
querub	0.125	0.07	*Quercus rubra*	*northern red oak*	*5*	0	7E-04	#####	*0.00353*	FACU	Native	perennial	tree			3
ranpen	0.25	0.14	*Ranunculus*	*Pennsylvania buttercup*	*5*	0	0.001	#####	*0.00706*	OBL	Native	annual/perennial	forb			-5
ransce	0.75	0.42	*Ranunculus*	*celery-leaf buttercup*	*3*	0.01	0.004	#####	*0.01271*	OBL	Native	annual/perennial	forb			-5
ratpin	0.125	0.07	*Ratibida*	*pinnate prairie coneflower*	*4*	0	7E-04	#####	*0.00282*	UPL	Native	perennial	forb			5
ribame	0.375	0.21	*Ribes*	*American black currant*	*4*	0	0.002	#####	*0.00847*	FACW	Native	perennial	shrub			-3
rubida	0.375	0.21	*Rubus idaeus*	*wild red raspberry*	*3*	0	0.002	#####	*0.00636*	FAC	Native	perennial	shrub			0
rudhir	1.25	0.70	*Rudbeckia*	*black-eyed Susan*	*4*	0.01	0.007	#####	*0.02825*	FACU	Native			0	0	3
rumcri	0.375	0.21	*Rumex crispus*	*curly dock*	*0*	0	0.002	#####	*0.00000*	FAC	Introduced	perennial	forb			0
saglat	0.625	0.35	*Sagittaria*	*broad-leaved arrowhead*	*3*	0	0.004	#####	*0.01059*	OBL	Native	perennial	semi-aquatic			-5
salint	0.25	0.14	*Salix interior*	*sandbar willow*	*2*	0	0.001	#####	*0.00282*	FACW	Native	perennial	shrub			-3
salnig	3.75	2.11	*Salix nigra*	*black willow*	*4*	0.03	0.021	#####	*0.08475*	OBL	Native	perennial	tree			-5
samcan	0.25	0.14	*Sambucus*	*elderberry*	*3*	0	0.001	#####	*0.00424*	FACU	Native	perennial	shrub			3
sapoff	0.125	0.07	*Saponaria*	*bouncing-bet, soapwort*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	perennial	forb			3
schpun	0.25	0.14	*Schoenoplect*	*common three-square bulrush*	*5*	0	0.001	#####	*0.00706*	OBL	Native	perennial	sedge			-5
schtab	3.625	2.04	*Schoenoplect*	*soft-stem bulrush*	*4*	0.02	0.02	#####	*0.08192*	OBL	Native	perennial	sedge			-5
sciatr	3.375	1.90	*Scirpus*	*dark-green bulrush*	*3*	0.02	0.019	#####	*0.05720*	OBL	Native	perennial	sedge			-5
scicyp	1.625	0.92	*Scirpus*	*wool-grass*	*4*	0.01	0.009	#####	*0.03672*	OBL	Native	perennial	sedge			-5
scugal	0.125	0.07	*Scutellaria*	*common skullcap, marsh skullcap*	*5*	0	7E-04	#####	*0.00353*	OBL	Native	perennial	forb			-5
setfab	0.25	0.14	*Setaria faberi*	*Chinese foxtail, giant foxtail,*	*0*	0	0.001	#####	*0.00000*	FACU	Introduced	annual	grass			3
setpum	0.625	0.35	*Setaria*	*pigeon grass, yellow foxtail*	*0*	0	0.004	#####	*0.00000*	FAC	Introduced	annual	grass			0
silvul	0.25	0.14	*Silene vulgaris*	*bladder-campion, maiden's-tears*	*0*	0	0.001	#####	*0.00000*	0	Introduced	perennial	forb	x		
siusua	0.375	0.21	*Sium suave*	*hemlock water-parsnip, common*	*5*	0	0.002	#####	*0.01059*	OBL	Native	(annual/)perennial	forb			-5
solcan	0.125	0.07	*Solidago*	*Canadian goldenrod*	*1*	0	7E-04	#####	*0.00071*	FACU	Native	perennial	forb			3
soldul	0.125	0.07	*Solanum*	*bittersweet nightshade*	*0*	0	7E-04	#####	*0.00000*	FAC	Introduced	perennial	vine			0
solgig	0.75	0.42	*Solidago*	*giant goldenrod*	*3*	0.01	0.004	#####	*0.01271*	FACW	Native	perennial	forb			-3
sonarv	0.25	0.14	*Sonchus*	*field sow-thistle*	*0*	0	0.001	#####	*0.00000*	FACU	Introduced	perennial	forb			3
sornut	0.25	0.14	*Sorghastrum*	*yellow Indian grass*	*5*	0	0.001	#####	*0.00706*	FACU	Native	perennial	grass			3
spaame	13	7.32	*Sparganium*	*American bur-reed*	*8*	0.09	0.073	#####	*0.58757*	OBL	Native	perennial	aquatic			-5
spapec	0.625	0.35	*Spartina*	*prairie cord grass*	*5*	0	0.004	#####	*0.01766*	FACW	Native	perennial	grass			-3
spialb	0.25	0.14	*Spiraea alba*	*white meadowsweet*	*4*	0	0.001	#####	*0.00565*	FACW	Native	perennial	shrub			-3
stapal	0.25	0.14	*Stachys*	*hedge-nettle, marsh hedge-*	*5*	0	0.001	#####	*0.00706*	OBL	Native	perennial	forb			-5
stegra	0.125	0.07	*Stellaria*	*grass-like starwort*	*0*	0	7E-04	#####	*0.00000*	UPL	Introduced	perennial	forb			5
symlan	0.125	0.07	*Symphyotrich*	*lance-leaved panicled aster*	*4*	0	7E-04	#####	*0.00282*	FACW	Native	perennial	forb			-3
taroff	0.375	0.21	*Taraxacum*	*common dandelion*	*0*	0	0.002	#####	*0.00000*	FACU	Introduced	perennial	forb			3
thadas	0.125	0.07	*Thalictrum*	*purple meadow-rue, tall meadow-*	*4*	0	7E-04	#####	*0.00282*	FACW	Native	perennial	forb			-3
thadio	0.25	0.14	*Thalictrum*	*early meadow-rue*	*7*	0	0.001	#####	*0.00989*	FACU	Native	perennial	forb			3
thuocc	0.75	0.42	*Thuja*	*northern white-cedar*	*9*	0.01	0.004	#####	*0.03814*	FACW	Native	perennial	tree			-3
tilame	0.125	0.07	*Tilia*	*American linden, basswood*	*5*	0	7E-04	#####	*0.00353*	FACU	Native	perennial	tree			3
traocc	0.125	0.07	*Tradescantia*	*prairie spiderwort, western*	*5*	0	7E-04	#####	*0.00353*	UPL	Native			0	0	5
traohi	0.375	0.21	*Tradescantia*	*blue-jacket, common spiderwort,*	*5*	0	0.002	#####	*0.01059*	FACU	Native	perennial	forb			3
tripra	0.125	0.07	*Trifolium*	*red clover*	*0*	0	7E-04	#####	*0.00000*	FACU	Introduced	perennial	forb			3
trirep	0.625	0.35	*Trifolium*	*white clover*	*0*	0	0.004	#####	*0.00000*	FACU	Introduced	perennial	forb			3
tsucan	0.25	0.14	*Tsuga*	*northern hemlock*	*8*	0	0.001	#####	*0.01130*	FACU	Native	perennial	tree			3
typgla	0.875	0.49	*Typha X*	*hybrid cat-tail, white cat-tail*	*0*	0	0.005	#####	*0.00000*	OBL	Introduced	perennial	semi-aquatic			-5
ulmrub	0.125	0.07	*Ulmus rubra*	*red elm, slippery elm*	*4*	0	7E-04	#####	*0.00282*	FAC	Native	perennial	tree			0
urtdio	0.875	0.49	*Urtica dioica*	*stinging nettle*	*1*	0.01	0.005	#####	*0.00494*	FAC	Native	perennial	forb			0
verhas	3.5	1.97	*Verbena*	*blue vervain, simpler's-joy,*	*3*	0.02	0.02	#####	*0.05932*	FACW	Native	biennial/perennial	forb			-3
vertha	0.625	0.35	*Verbascum*	*common mullein*	*0*	0	0.004	#####	*0.00000*	UPL	Introduced	biennial	forb			5
vibtri	0.25	0.14	*Viburnum*	*American cranberry-bush*	*6*	0	0.001	#####	*0.00847*	FAC	Native	perennial	shrub			0
viccra	0.125	0.07	*Vicia cracca*	*bird vetch, cow vetch*	*0*	0	7E-04	#####	*0.00000*	0	Introduced	perennial	forb	x		
viosor	0.125	0.07	*Viola sororia*	*common blue violet*	*3*	0	7E-04	#####	*0.00212*	FAC	Native	annual/perennial	forb			0
vitrip	0.25	0.14	*Vitis riparia*	*river bank grape*	*2*	0	0.001	#####	*0.00282*	FAC	Native	perennial	vine			0
zizaur	0.375	0.21	*Zizia aurea*	*golden alexanders*	*7*	0	0.002	#####	*0.01483*	FAC	Native	perennial	forb			0

B

APPENDIX B

Timed-Meander Sampling Protocol

Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessment

Wisconsin Department of Natural Resources

INTRODUCTION

This standard operating procedure (SOP) describes the methods used by the Wisconsin Department of Natural Resources to conduct timed-meander surveys of wetland plant communities to determine wetland plant community condition. This SOP should be used in conjunction with the Floristic Quality Assessment Methodology for Wisconsin (Bernthal 2003). This SOP is based on and modified from procedures first developed and employed by the Lake Superior Research Institute (LSRI) (LSRI 2013). Possible uses for this protocol include Natural Heritage Inventory (NHI) surveys of State Natural Area wetland plant communities, FQA Benchmark Project surveys, water quality standards compliance surveys, wetland restoration site monitoring and wetland assessments for regulatory purposes.

DESCRIPTION

In this method, wetland types are first identified using aerial photographs and/or site investigations of the potential wetland(s) to be sampled. Assessment Areas (AAs) composed of relatively homogenous vegetation, are defined prior to sampling but can be modified after the survey based upon the conditions and features encountered during the survey. Natural communities, as defined by the NHI natural community classification, serve as the foundational unit of sampling (Table 1). When multiple types are present at a site, multiple Assessment Areas must be defined. Assign a wetland AA to the natural plant community type that it most closely resembles. If the AA's plant assemblage does not match any Natural Heritage Inventory community the dominant vegetation type (e.g., herbaceous, shrub, forested) may be noted. Table 1 contains a crosswalk to the Eggers and Reed classification system (2014).

Timed-meander start locations should begin far enough from the edge of a community type or from an anthropogenic disturbance (i.e., roadway, residential development, etc.) to avoid including transition zones from other plant communities in the survey. However, if the assessment area is surrounded by roadways, residential development, or other anthropogenic disturbance the timed-meander start location may be located at the edge of the disturbance. The survey consists of a search for all plant species present within a pre- or post- defined Assessment Area and an estimate of abundance and percent areal cover for each species at the end of the search period. The search takes place during timed intervals documented by the time keeper. The timer is paused when surveyors need to divert their attention from the search for any reason, such as conferring on an identification, documenting a rare species, or investigating an area with a plant composition different from the target community. The total time spent searching is an indication of search effort. All plant species are recorded when first observed and search intervals are documented on the Field Sheet. After all search intervals are complete, abundance and percent areal cover over the entire Assessment Area is estimated for each plant species, and notes on disturbance and other observations are documented.

The assessment areas must have homogeneous representation of wetland plants associated with each wetland community type. If a different wetland community type is encountered during a timed-meander survey of a given targeted community type, the timer is paused and the size of the new plant community is evaluated. If the new type is greater than 900 m^2 (30m x

30m) (9688 ft^2, 98ft x 98ft or approximately 0.09 hectare (0.25 acre), then the area is excluded from the Assessment Area and the search remains paused until the surveyors return to the targeted plant community. If necessary, the new community would need to be evaluated by a separate survey. If the new type is less than 900 m^2 in size, the search is resumed and the small pocket can be treated as an inclusion within the primary wetland type.

Invasive plant species and anthropogenic disturbances should be observed during the walk to and from the Assessment Area, and noted in comments on the Timed-Meander Survey Field Sheet. Additional condition assessment tools may also be used to evaluate the wetland's health. For regulatory decisions, the Condition Assessment in Section 3 of the Wisconsin Rapid Wetland Assessment Methodology version 2 (Trochlell 2014) should be used. A Disturbance Factor Checklist is used for rating disturbance levels for the FQA Benchmark Project surveys. For future wetland condition surveys the Disturbance Factors Checklist or a modification of it will be used to assess stressors that may be causing an impairment to the wetland.

Table 1: Examples of Wetland NHI Natural Communities and Crosswalk to Eggers and Reed (2014).[1]

NHI Natural community	Eggers and Reed (2014)	Dominant vegetation type
Submergent Marsh	Shallow Open Water Communities	Aquatic Herbaceous
Emergent Marsh	Shallow Water Marsh	Herbaceous
Northern Sedge Meadow	Sedge Meadow	Herbaceous
Southern Sedge Meadow	Sedge Meadow	Herbaceous
Wet-mesic Prairie	Wet/Wet-mesic Prairie	Herbaceous
Calcareous Fen	Calcareous Fen	Herbaceous
Boreal Rich Fen	N/A	Herbaceous
Central Poor Fen	N/A	Herbaceous
Ephemeral pond	Seasonally Flooded Basin	Herbaceous
Open Bog	Open Bog	Herbaceous/Low Shrub
Alder Thicket	Alder Thicket	Shrub
Shrub-carr	Shrub Carr	Shrub
Black Spruce Swamp	Coniferous Bog	Forested
Northern Wet-mesic Forest	Coniferous Swamp	Forested
Floodplain Forest	Floodplain Forest	Forested
Southern Hardwood Swamp	Hardwood Swamp	Forested

[1] Additional wetland community types, e.g., muskeg, interdunal, etc., may be surveyed. For a detailed description of each Natural Community, please refer to "Wisconsin's Natural Communities" on the WDNR NHI website.

DEFINITIONS

Assessment Area (AA): Discrete, homogenous area of a target plant community that is to be thoroughly sampled during the timed meander survey. Large wetlands/wetland complexes may contain multiple wetland assessment areas.

EO - Element Occurrence: In the Natural Heritage Inventory, a population of a species or an example of a natural community or natural feature naturally occurring at a specific, ecologically appropriate location.

Search: Locating, identifying and documenting plant species presence, while mentally noting percent cover. Previously un-documented plant species are continuously added until the search interval is paused or ends.

Search Interval: A pre-defined time interval, maintained by the time keeper. The search time may be paused whenever the active search for additional species stops for various reasons, including taking time to work out difficult identifications, documenting rare species, adjusting the Assessment Area or other reasons.

REFERENCES

Bernthal, Thomas W. 2003. Development of a Floristic Quality Assessment Methodology for Wisconsin**.**

Eggers, S.D. and D.M. Reed. 2014. Wetland Plants and Plant Communities of Minnesota and Wisconsin, Version 3.1. US. Army Corps of Engineers, S. Paul District, St. Paul, MN.

Lake Superior Research Institute (LSRI). 2013. Timed-meander Sampling Protocol for Forested and Non-forested Wetland Floristic Quality Assessment. University of Wisconsin-Superior. Superior, WI.

Trochlell, Patricia A. 2014. Wisconsin Rapid Wetland Assessment Methodology, version 2.

EQUIPMENT LIST

- ♦ Clipboard
- ♦ Compass
- ♦ Digital Camera
- ♦ Field Guides
- ♦ GPS Unit
- ♦ Digital watch with countdown timer
- ♦ Hand Lens (10X objective)
- ♦ Maps
- ♦ Markers
- ♦ Pencils (and sharpener/extra lead)
- ♦ Plant Collection Bags (i.e., Ziploc® Big Bags)
- ♦ Weather-Proof Datasheets

PROCEDURE

1. Upon arrival at the site, the survey team of two or more people must completely fill out the top portion of the WDNR Timed Meander Survey Sheet (Field Sheet) in Attachment 1 or other form for the Assessment Area (AA) to be surveyed. Use the Natural Heritage Inventory (NHI) Natural Community Descriptions to determine the appropriate plant community classification for the AA to be surveyed. If the survey involves an existing NHI Element Occurrence note the EO code. If the plant assemblage does not appear to match a natural community, note the dominant vegetation type from Table 1.

2. Start locations on the AA must begin at a point clearly within the target community type, away from transitional areas or anthropogenic disturbance (i.e., roadway, residential development, logging, ditching, etc.). The exception to this is that if an AA is immediately adjacent to an anthropogenic disturbance, then the start location may be located near the edge of this disturbance.

3. Travel to the AA start location and record any disturbance (e.g., invasive plants, logging, ditches) encountered while traveling to the survey start-up point on side 2 of the Field Sheet. This can also be completed at the end of the survey after the entire AA has been surveyed.

4. Take a waypoint at the survey start point using a handheld GPS unit. Record the starting point on the Field Sheet in decimal degrees. Indicate whether the GPS is set to a tracking function. This will create a record of survey locations over the course of the search.

5. Designate a lead observer and a data recorder for each survey; the observer will conduct the taxonomic identification and the recorder will complete the survey Field Sheet and operate the timer.

6. Set the countdown timer on the watch for 5 minutes. Start the stop watch and begin timing the first, 5-minute interval of the timed-meander survey. Standing at the start point, record all plants (ideally to species) that can be seen from the four cardinal directions before moving forward in search of new species. Upon reaching the end of a 5 minute interval, the timekeeper should instruct other observer(s) to stop searching until the next time interval begins.

7. Record plants using the full species name. Because there are numerous and often conflicting resources for accepted plant names (USDA Plants, Flora of North America, various state herbaria lists etc.), it is important to limit confusion caused by using multiple names for the same species. Therefore, this protocol follows the Wisconsin State Herbarium’s list of vascular flora, which has recently been updated to reflect the most recent taxonomic information and is available online. The State Herbarium nomenclature should be used for conducting plant surveys in Wisconsin whenever possible.

8. Record on the Field Sheet and collect all unknown, uncertain, and/or difficult-to-identify plant species, which will later be keyed or identified by experts (or eliminated from the analysis if identification is not possible).

9. Advance the search from the start point once the initial plants from the area surrounding the start point are recorded. Proceed walking through the site, taking care to identify all species encountered and making sure to investigate all vegetation layers. The search must always stay within the targeted plant community type for the duration of the survey, with one exception:

    a. If a different plant community type is encountered during the search, stop the watch to pause the elapsed time and evaluate the size of the community. If the new community type is less than 900 m^2 (30m x 30m or 0.09 hectares, 9688 ft^2 (98 ft x 98 ft) or 0.25 acres) the timed meander survey can continue through that community type.

    b. If the new community type is greater than 900 m^2, pause the survey until the surveyors have returned to the target plant community.

10. After each 5 minute time interval, the recorder should note on the Field Sheet the time interval in which those plant species were observed (i.e. 0-5 minutes, 5-10 minutes, 10-15 minutes, etc.). At the end of each time interval the observers may wish to briefly confer over any unknown species before resuming the next time interval. This reduces the number of unknown species for later office determination.

11. If an interruption of the process is necessary (e.g., intensive consulting with field guides and conferring with other surveyors over a difficult identification, bathroom breaks, difficult terrain, or vegetation encountered), stop the timer to pause the interval, eliminating these interruptions from the elapsed search time.

12. Pause the search if a rare, threatened, and/or endangered species is observed. Record the plant species on the Field Sheet, the location of the plant using the handheld GPS, take a digital photo of the species, and note associated species and other relevant information needed for the NHI Rare Plant Form. Collect a specimen if authorized and warranted. Resume the stop watch after all field recording is noted.

13. Typically a minimum of 30 minutes of total search time is needed to thoroughly search an AA. Stop the search when:
    a. A pre-defined area has been completely searched. For some uses of this SOP a search of an entire pre-defined area may be required, regardless of the time it takes, even if no new species are observed in a search interval, OR
    b. After 30 minutes of search time, one or no new species is found during the most recent 5 minute interval, OR
    c. After 30 minutes of search time, the number of species observed in the most recent 5 minute interval is less than 5% of the running total of recorded species (including unknowns). For example, if, after the 10^{th} five-minute interval (50 minutes of elapsed search time), 100 species have been observed, and 4 or fewer species were observed in the 10^{th} 5-minute interval, the survey should be ended. The justification for ending is that the survey has reached the point of

diminishing returns and has likely captured 90-95% of the species richness, and has likely captured 100% of the dominant and common species.

d. The search may end earlier than 30 minutes only if the entire AA has been thoroughly searched and no species were found in the final interval.

14. After the last search interval is completed take a waypoint at the survey end point using a handheld GPS unit. Record the waypoint on the Field Sheet in decimal degrees.

15. Once the species list is complete assign each species a percent cover based on an ocular estimate of the percent of the AA covered by the canopy of that species (see Figures 1 and 2). Estimate to the nearest whole number. For species that cover 1% or less, use 1.

16. For each species, assign an abundance code based upon the class categories listed in Table 2 below. Abundance estimates give a qualitative estimate of relative frequency and can be used to make comparisons with historically gathered site data. They also provide valuable data to compare species with small areal percent cover.

17. Record other data on the Field Sheet, including soil texture and pH on side 1, if taken. Animal species observed and other observations are recorded on side 2.

Table 2. Abundance Classification

Symbol	Abundance Code	Description
A	Abundant	The dominant plants throughout the site
C	Common	Locally abundant or frequently encountered
O	Occasional	Occasionally encountered, or locally common but absent or infrequent across much of site
U	Uncommon	Infrequently encountered
R	Rare	Very few plants seen

Figure 1: Comparison chart for visual percentage estimation. NPS US Dept. of the Interior, Damage Assessment Handbook, 2002.

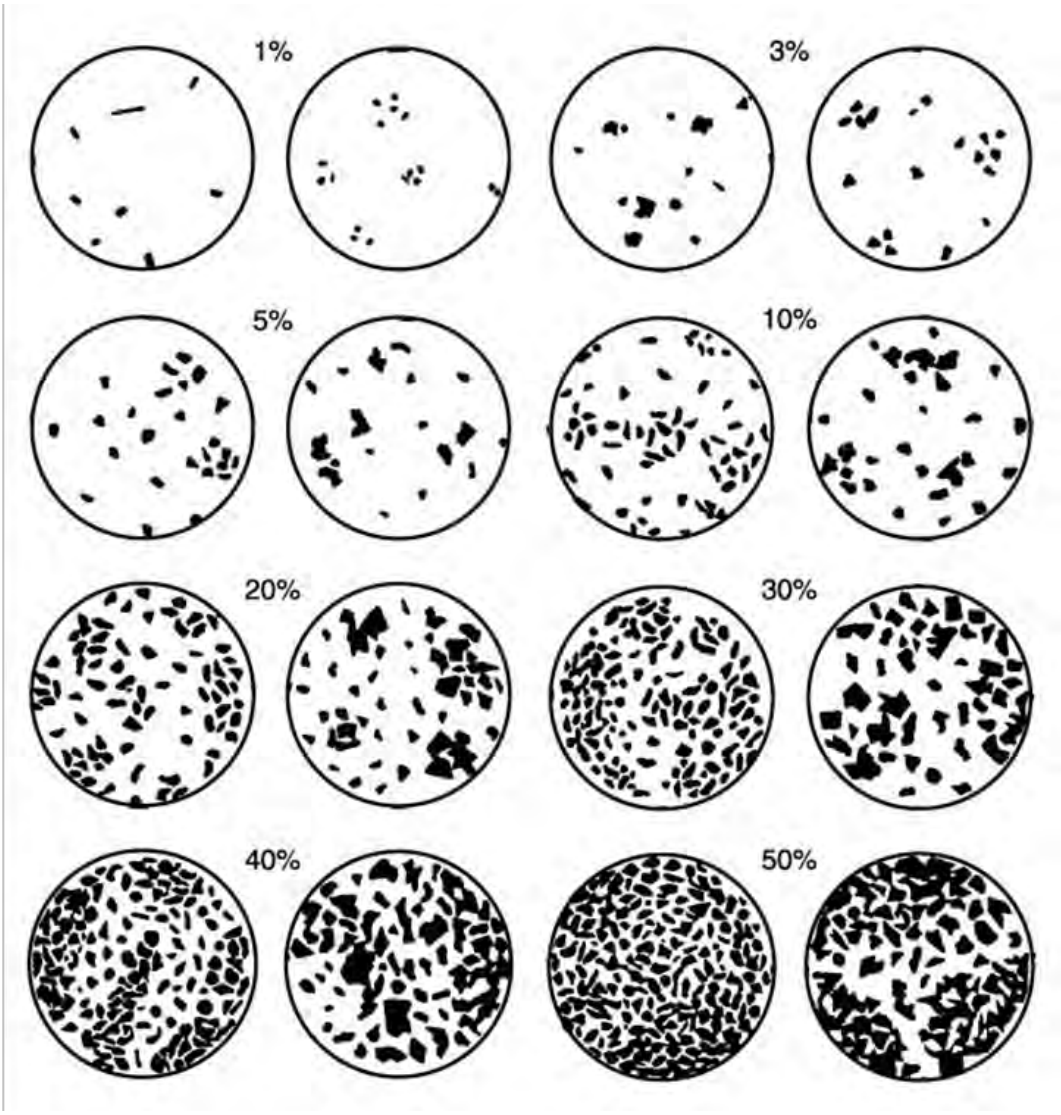
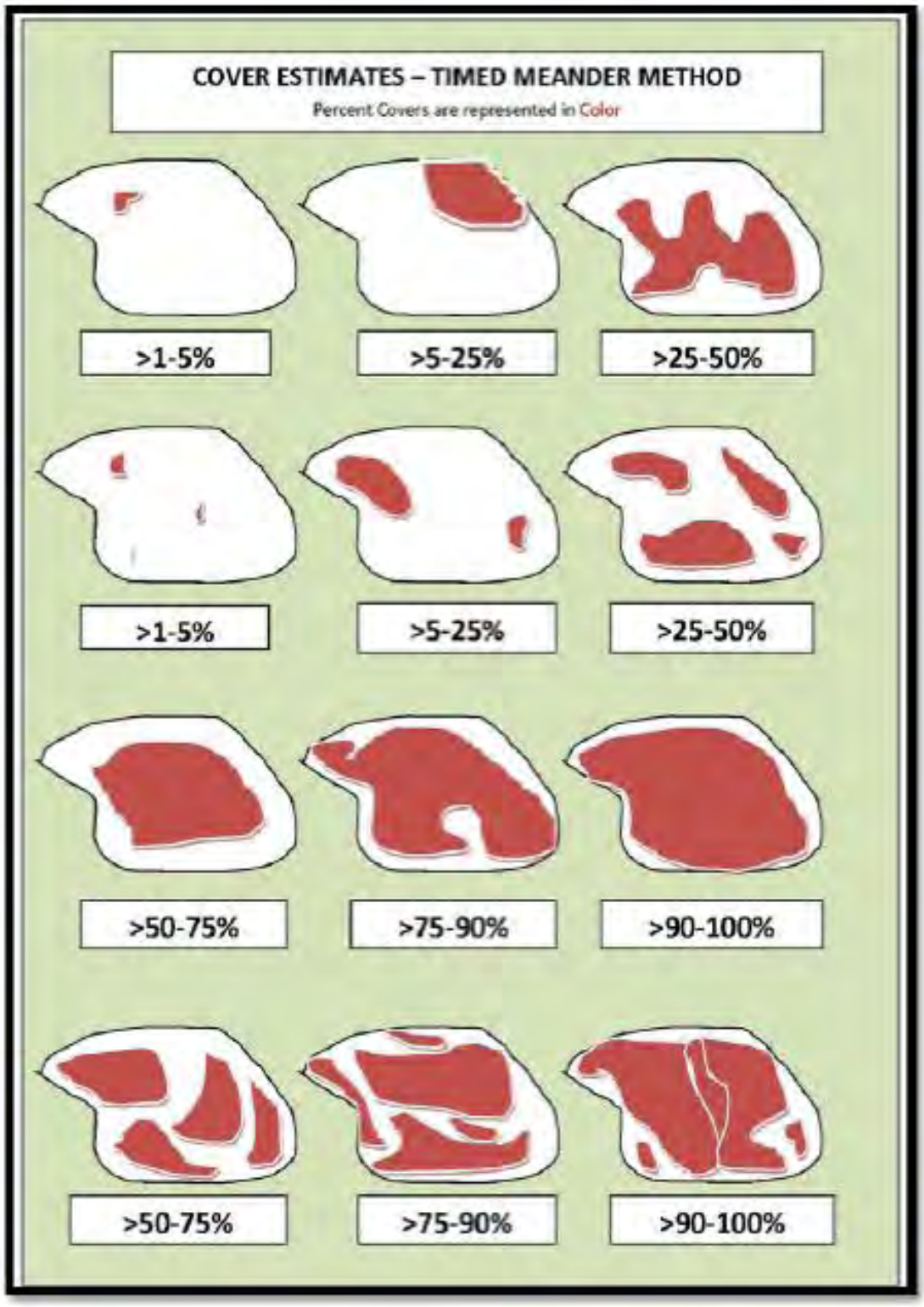


Figure 2: Cover estimates for timed meander method. LSRI 2013.



Attachment 1: WDNR Timed-Meander Survey Field Sheet, next page

WDNR Timed Meander Survey Field Sheet

Observers_____ Date_____

Property_____ Site Name_____ County_____

Access _____

Community Type _____ EOID (if existing EO) _____

GPS Used _____Start point (Dec Deg)_____ End point (Dec Deg)_____ Track Taken? Y N

Total Elapsed Search Time _____(mins) Soils & pH_____

Time		Species	%	AC	Notes	Time		Species	%	AC	Notes
0	1						36				
	2						37				
	3						38				
	4						39				
	5						40				
	6						41				
	7						42				
	8						43				
	9						44				
	10						45				
	11						46				
	12						47				
	13						48				
	14						49				
	15						50				
	16						51				
	17						52				
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	22						57				
	23						58				
	24						59				
	25						60				
	26						61				
	27						62				
	28						63				
	29						64				
	30						65				
	31						66				
	32						67				
	33						68				
	34						69				
	35						70				

Estimate % areal cover and abundance code for each species
AC: Abundance codes: A (abundant), C (common), O (occasional), U (uncommon), R (rare)

WDNR Timed Meander Survey Field Sheet

Time		Species	%	AC	Notes
	71				
	72				
	73				
	74				
	75				
	76				
	77				
	78				
	79				
	80				
	81				
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	107				
	108				
	109				
	110				
	111				
	112				

Wetland Observation Notes
Waypoint #
Waypoint #
Waypoint #
Waypoint #
Waypoint #
Waypoint #
Animal Observations
Structural Notes
Invasive Species (note distance to AA if observed outside the AA)
Anthropogenic Disturbances
Other Notes

Estimate % areal cover and abundance code for each species
Abundance codes: A (abundant), C (common), O (occasional), U (uncommon), R (rare)

C

APPENDIX C

Photo Log

Aquatic Submergent/Emergent Facing E

Aquatic Submergent/Emergent Facing NE

Aquatic Submergent/Emergent Restoration Facing N

Mesic Forest Restoration Facing N

Mesic Forest Restoration Facing E

Mesic Forest Restoration Facing NE

Mesic Forest Restoration Facing NE

Mesic Forest Restoration Facing S

Mesic Forest Restoration Facing SE

Mesic Forest Restoration Facing SW

Mesic Forest Restoration Facing W

Mesic Forest Restoration Facing W

Mesic Prairie Planting Facing NE

Mesic Prairie Planting Facing S

Mesic Prairie Planting Facing SW

Northern Sedge Meadow Enhancement Facing E

Northern Sedge Meadow Enhancement Facing NW

Northern Sedge Meadow Enhancement Facing NW

Northern Sedge Meadow Enhancement Facing NW

Northern Sedge Meadow Enhancement Facing W

Northern Sedge Meadow Facing E

Northern Sedge Meadow Facing NE

Northern Sedge Meadow Facing SE

Northern Sedge Meadow Restoration Facing E

Northern Sedge Meadow Restoration Facing E

Northern Sedge Meadow Restoration Facing N

Northern Sedge Meadow Restoration Facing NW

Northern Sedge Meadow Restoration Facing S

Northern Sedge Meadow Restoration Facing S

Northern Sedge Meadow Restoration Facing W (2)

Northern Sedge Meadow Restoration Facing W

Open Water Facing NW

Open Water Facing S

Shrub-Carr Wetland Resoration Facing E

Shrub-Carr Wetland Restoration Facing E

Shrub-Carr Wetland Restoration Facing NE

Shrub-Carr Wetland Restoration Facing NW

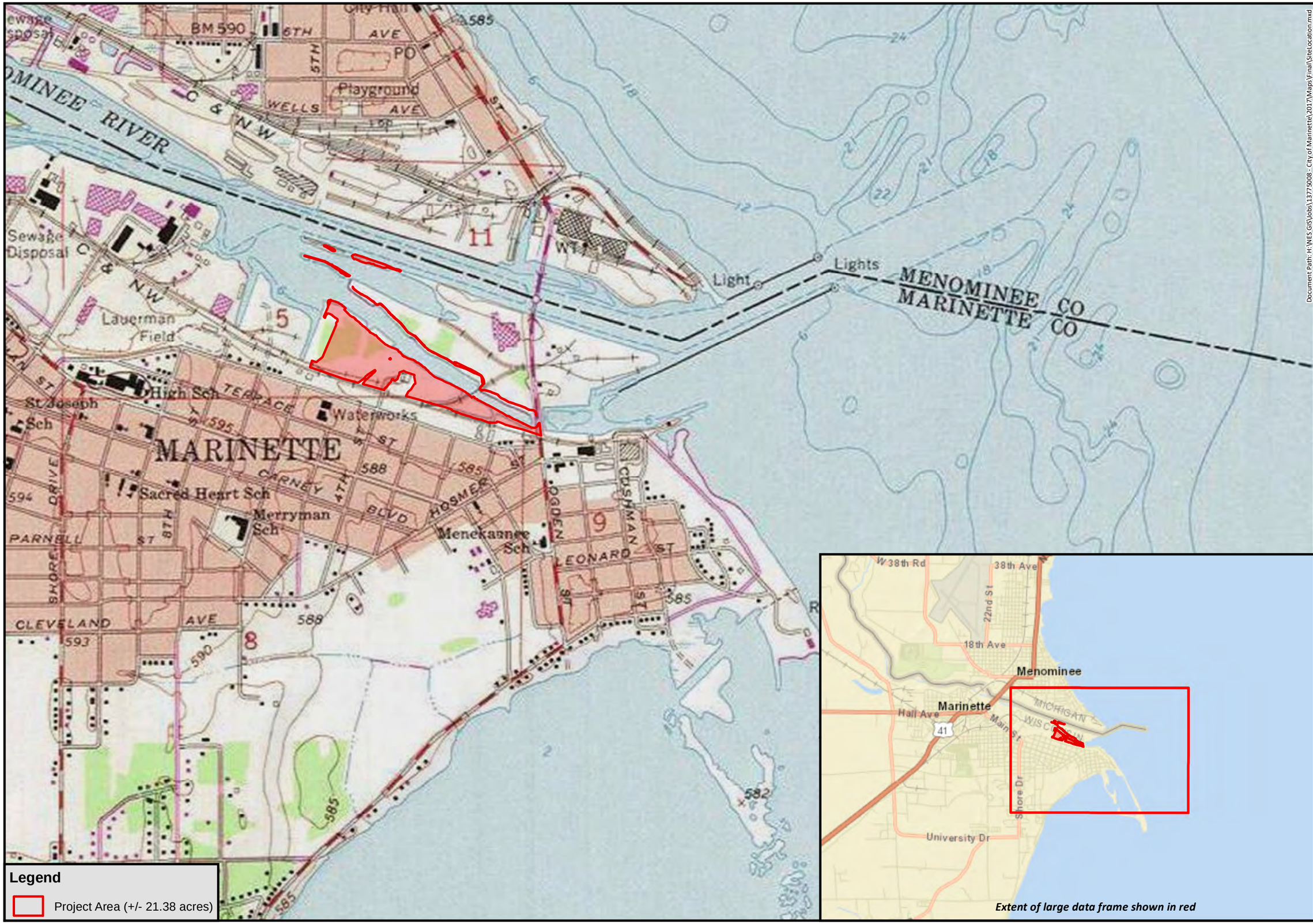
Shrub-Carr Wetland Restoration Facing S

Shrub-Carr Wetland Restoration Facing SW

Tag Alder Enhancement Facing N

Wet Mesic Prairie Planting Facing E

Wet Mesic Prairie Planting Facing N



Legend

Project Area (+/- 21.38 acres)

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Figure 1
Site Location

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

Located in part of:
Section 5,8, & 9, T30N, R24E
City of Marinette
Marinette County
Wisconsin

N

0 1,000
Feet

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Legend

- Carp Fencing (+/- 3161 ft)
- Goose Fencing (+/- 6669 ft)
- Channel for Northern Pike Spawning Habitat Access
- Parcel Lines

Micro Habitat Improvements

- Bat Box (1)
- Bat House - 1 pole w/ 2 boxes (6)
- Brush Pile (8)
- Existing Downed Willow to Remain (2)
- Fish Sticks (11)
- Great Blue Heron Nesting Platform - 1 post w/ 3 nests (3)
- Loafing Platform (2)
- Log Structure (3)
- Osprey Nesting Platform (1)
- Rock Pile (2)
- Screech Owl Nest Box (4)
- Tree Swallow / Eastern Bluebird Nest Box (19)
- Turtle Nesting (2)
- Willow Hinge Cut (6)
- Wood Duck Box (4)

- E-Mat
- Mulch and Plant
- Seed and Plant
- Clear and Grub, Seed and Plant

Community Type

- 1) Aquatic Submergent / Emergent Restoration (+/- 1.75 acres)
- 2) Cattail Marsh Enhancement (+/- 2.69 acres)
- 3) Mesic Forest Restoration (+/- 2.43 acres)
- 4) Mesic Prairie Planting (+/- 0.83 acres)
- 5) Northern Sedge Meadow Enhancement (+/- 0.72 acres)
- 6) Northern Sedge Meadow Enhancement (Standing Water) (+/- 2.47 acres)
- 7) Northern Sedge Meadow Restoration (+/- 2.71 acres)
- 8) Northern Sedge Meadow Restoration (Standing Water) (+/- 1.25 acres)
- 9) Open Water (+/- 0.45 acres)
- 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
- 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
- 12) Tag Alder Enhancement (+/- 1.20 acres)
- 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
- 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
- 15) Wet Mesic Forested Wetland Restoration (+/- 0.44 acres)
- 16) 2017 Mapped Aquatic Submergent/Emergent Restoration (2.13 acres)

NES ECOLOGICAL SERVICES
A Division of Robert E. Lee & Associates, Inc.

Figure 2
Plant Community Zones & Habitat Structures
Map 1

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

Sources: Robert E. Lee & Associates, Inc., Marinette County

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- 16) 2017 Mapped Aquatic Submergent/Emergent Restoration (2.13 acres)

NES ECOLOGICAL SERVICES
A Division of Robert E. Lee & Associates, Inc.

Figure 2
Plant Community Zones & Habitat Structures
Map 2

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

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Figure 2
Plant Community Zones & Habitat Structures
Map 3

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

Sources: Robert E. Lee & Associates, Inc., Marinette County

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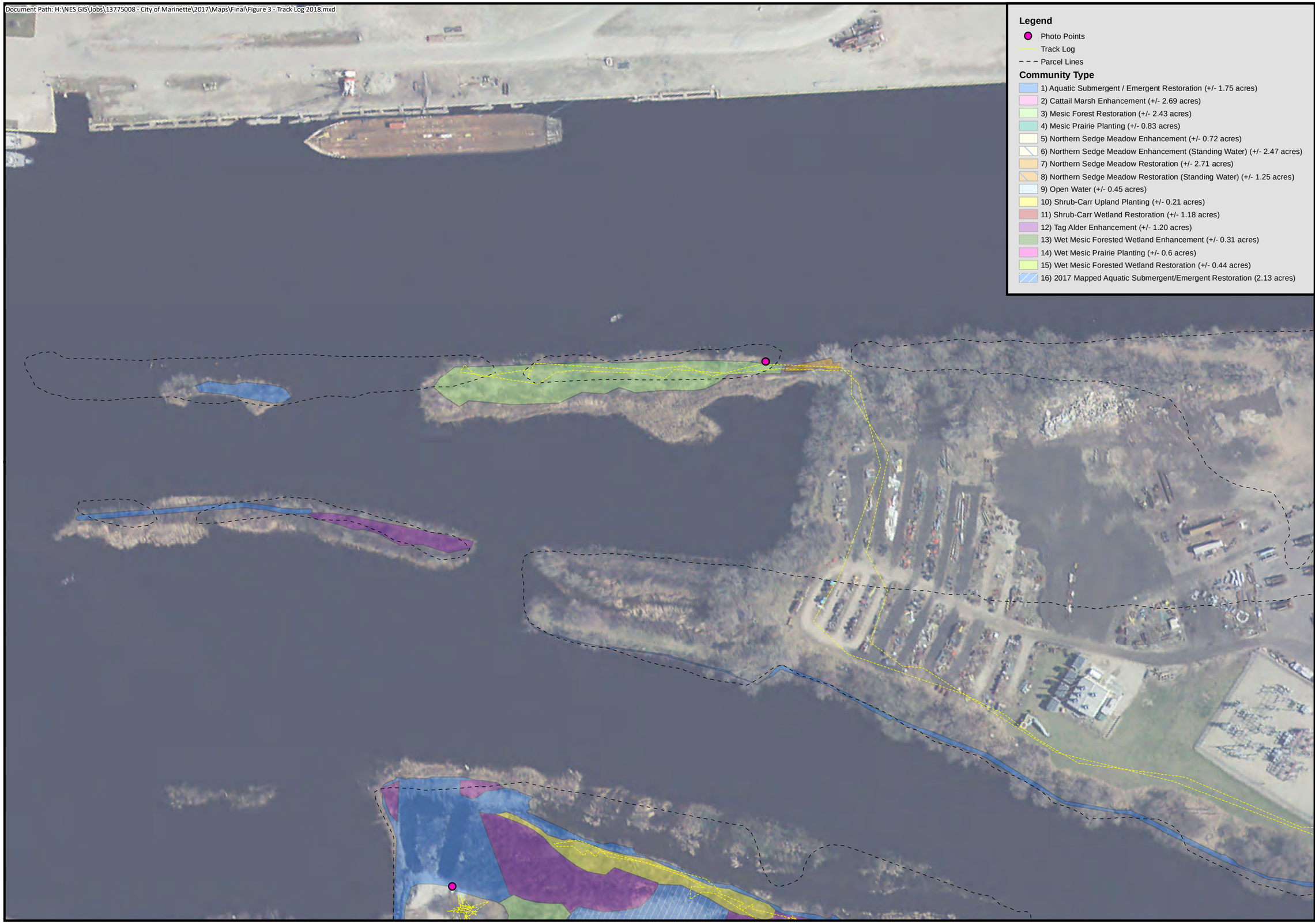

Legend

- Photo Points
- Track Log
- Parcel Lines

Community Type

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- 16) 2017 Mapped Aquatic Submergent/Emergent Restoration (2.13 acres)

NES ECOLOGICAL SERVICES
A Division of Robert E. Lee & Associates, Inc.

Figure 3
Photo Points
& Track Log
Map 1

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

Sources: Robert E. Lee & Associates, Inc., Marinette County

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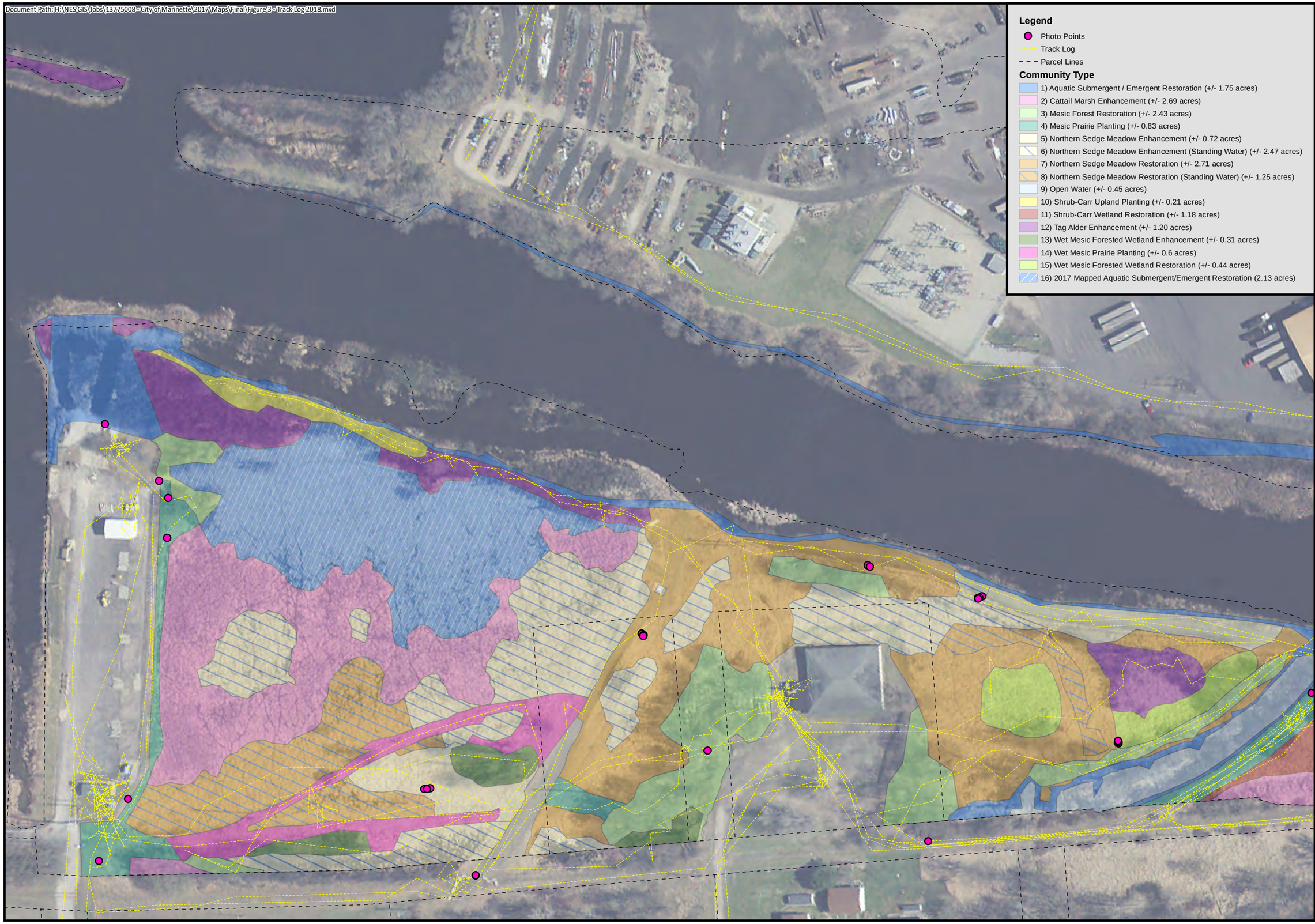

Legend

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- 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
- 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
- 12) Tag Alder Enhancement (+/- 1.20 acres)
- 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
- 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
- 15) Wet Mesic Forested Wetland Restoration (+/- 0.44 acres)
- 16) 2017 Mapped Aquatic Submergent/Emergent Restoration (2.13 acres)

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Figure 3
Photo Points
& Track Log
Map 2

2/5/2019

City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin

Sources: Robert E. Lee & Associates, Inc., Marinette County

Disclaimer: Robert E. Lee & Associates, Inc. makes every effort to ensure this map is free of erros but does not warrant the map or its features are either spatially or temporally accurate o fi for a particular use. Robert E. Lee & Associates, Inc., provides this map without any warranty of any kind whatsoever, either expressed or implied.

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Document Path: H:\NES GIS\Jobs\13775008 - City of Marinette\2017\Maps\Final\Figure 3 - Track Log 2018.mxd

Legend

- Photo Points
- Track Log
- Parcel Lines

Community Type

- 1) Aquatic Submergent / Emergent Restoration (+/- 1.75 acres)
- 2) Cattail Marsh Enhancement (+/- 2.69 acres)
- 3) Mesic Forest Restoration (+/- 2.43 acres)
- 4) Mesic Prairie Planting (+/- 0.83 acres)
- 5) Northern Sedge Meadow Enhancement (+/- 0.72 acres)
- 6) Northern Sedge Meadow Enhancement (Standing Water) (+/- 2.47 acres)
- 7) Northern Sedge Meadow Restoration (+/- 2.71 acres)
- 8) Northern Sedge Meadow Restoration (Standing Water) (+/- 1.25 acres)
- 9) Open Water (+/- 0.45 acres)
- 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
- 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
- 12) Tag Alder Enhancement (+/- 1.20 acres)
- 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
- 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
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