Matchett Road and Malden Road Ecopassage Location and Solution Study

Preliminary Study of Siting Alternatives and Structure Design
City of Windsor
Project # ONS2103A

Final

Prepared for:

City of Windsor

310-350 City Hall Square West Windsor ON N9A 6S1

November 2023

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310-350 City Hall Square West Windsor ON N9A 6S1

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November 2023

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1.0 Introduction

1.1 Purpose and Objectives

The City of Windsor (the City) retained Wood Environment and Infrastructure Solutions (Wood) to undertake a study to determine the preferred location and to identify potential and alternative solutions (crossing type) as well as possible locations for ecopassages on Matchett Road and Malden Road in the City of Windsor. The goal of ecopassages on Matchett Road and Malden Road is to ultimately provide an ecological connection between Ojibway Park and the Springgarden Forest Life Science ANSI (commonly known as Spring Garden Natural Area; SGNA; Figure 1-A and Figure 1-B), in combination with other proposed efforts in the City (Section 1.3; Figure 1-A). In the City, Matchett Road lies between Ojibway Park and the Ojibway Prairie Provincial Nature Reserve, and Malden Road lies between Ojibway Prairie Provincial Nature Reserve and the SGNA, all of which are part of the Ojibway Prairie Complex Area of Natural and Scientific Interest (ANSI). As identified in the previous reports (LGL, 2015), there is a wide range of options that serve various purposes when considering the optimal ecopassage solution to connect these areas. A preferred location and solution study has been recommended as a first step in considering ecopassages for both major north-south roads in the Ojibway Praire Complex. This study will assess the optimal locations to construct the ecopassages and recommend the design type.

1.2 Study Area

The Study Area considered for this project contains the Ojibway Prairie Complex ANSIs and Provincially Significant Wetlands (PSW) and Oakwood Park Wetland in the City of Windsor, and the LaSalle Woods and Turkey Creek Wetlands in the northern portion of the Town of La Salle (Figure 1-B). The Study Area contains the SGNA – Oakwood Park crossing (i.e., Rt. Hon. Herb Gray Parkway Tunnel Top 5) and the proposed crossing on Ojibway Parkway (between Ojibway Park and Black Oak Heritage Park). These crossings, along with the potential crossings on Matchett Road and Malden Road, would positively affect wildlife movement through natural areas.

The Ojibway Prairie Complex is fragmented by residential and commercial land uses and a road network of local, collector, and arterial roads. The provincial Highway/E.C. Row Expressway is the northern limit of the Study Area, and the new Gordie Howe International Bridge will occur to the northwest. Other land uses within the Study Area include rail corridors and yards, utility corridors, the Ambassador Golf Club, and agriculture. The southern limit of the Study Area occurs at Laurier Drive/Parkway in the Town of LaSalle (Figure 1-A and Figure 1-B).

1.3 Description of Other Local Ecopassages and Crossings

There are currently two constructed ecopassages within the City, both associated with the Rt. Hon. Herb Gray Parkway (Parkway). Tunnel Top T5, located northwest of Todd Lane and Cabana Road West, is 160 meters (m) long by 120 m wide (575 m^2), spanning the below-grade portion of Highway 401. The outer edges of T5 are protected by parapet walls, fencing and dense vegetation to help safely guide wildlife across the structure. At the east end, a large concrete box culvert provides safe passage for wildlife under the Parkway's integrated multi-use trail.

Tunnel Top T5 is vegetated with native grasses, wildflowers and shrubs that provide suitable wildlife habitat on the structure and an effective ecological connection between the SGNA and Oakwood Park.

The T5 ecopassage is used by various wildlife, including deer, coyote, wild turkey and two species at risk (SAR) snakes. Ground-nesting birds and SAR plants have also been observed on the structure.

The other ecopassage is located at Matchett Road, just north of Chappus Street. This structure is a 16 m ACO Wildlife KT500 Slotted Tunnel. It fits flush to the roadway, and the slotted upper surface allows airflow in and out of the tunnel. The ecopassage was installed to facilitate movement of SAR snakes from protected habitat within the Chappus Street Restoration Area (east side of Matchett Road) to created habitat within the Parkway ecological landscape. To date, SAR snakes have approached the tunnel entrance on the east side of Matchett Road but have not yet travelled through the tunnel.

Lastly, one proposed ecopassage within the City of Windsor would cross Ojibway Parkway south of Broadway Street. This proposed ecopassage is subject to a Municipal Class Environmental Assessment (Class EA) study, which is currently ongoing. The proposed crossing would provide an ecological connection between Black Oak Heritage Park and Ojibway Park, facilitating safe passage for area wildlife and SAR between these two significant natural heritage areas. The proposed crossing is large enough to accommodate the movement of small to large-sized mammals, reptiles, and amphibians. It would be vegetated with native plant species to provide food and nectar sources for birds and pollinators.

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4684000 4682000 4680000 4678000 4676000

DETROIT (U.S.A.)
WINDSOR (CANADA)
Detroit River
North Tilston
South Tilston
Jackson
Superior
Matchette
Mic Mac
Maurice Belanger
Malden
Virginia
South Cameron Woodlot
Aboriginal
Partington
Bellewood
Tallgrass Prairie Heritage
Spring Garden Natural Area
Fazio
Curry
Oakwood
Black Oak Heritage
Ojibway Park
Ojibway Parkway Trail
Turkey Creek
CITY OF WINDSOR
TOWN OF LASALLE
Senator Paul Lucier Park
Ojibway Oaks Park
V. Marcotte Park
G. Craig Park
Turtle Club
Lasalle Conservation Lands
Natalie Park
S. Budimir Park
Brunet Park
Trillium Park
John Dupuis Park
Lafferty Park
Kenwood Park
Sandwich West Park
Paul Wilkinson Park
Gilbert Park
R. Carrick Memorial Track & Field Facility
Vollmer Culture And Recreation Complex
Essex Golf And Country Club
Seven Lakes Golf Course
Victory Park
Brain Briggs Park
SANDWICH STREET
COLLEGE AVENUE
CAMPBELL AVENUE
TECUMSEH ROAD WEST
OUELLETTE AVENUE
PRINCE ROAD
TOTTEN STREET
DOUGALL AVENUE
SOUTH CAMERON BOULEVARD
HURON CHURCH ROAD
E C ROW EXPRESSWAY
HIGHWAY 3
ARMANDA STREET
OJIBWAY PARKWAY
HIGHWAY 401
GRAND MARAIS ROAD WEST
ACADEMY DRIVE
SPRUCEWOOD AVENUE
CABANA ROAD WEST
TODD LANE
FRONT ROAD WEST
REAUME AVENUE
NORMANDY STREET
COUSINEAU ROAD
MATCHETTE ROAD
REAUME ROAD
BOUFFARD ROAD
LAURIER DRIVE
MICHIGAN AVENUE
MALDEN ROAD
DISPUTED ROAD
VICTORY STREET
FRONT ROAD

LEGEND

- Approximate Study Area
- Watercourse
- Waterbody
- Railway
- Hydro Line
- Municipal Border (Lower and Single Tier)
- National Border
- Municipal Park and Golf Course (Boundaries Approximate)
- Municipal Trails (City of Windsor)
- Regulation Area (Essex Region Conservation Authority)
- Significant Groundwater Recharge Area

NOTES:
- Aerial imagery extracted from Essex County interactive map, 2019.

0 0.25 0.5 1 1.5 2 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

THE CITY OF WINDSOR ONTARIO, CANADA

wsp

MALDEN AND MATCHETTE ECO PASSAGE STUDY

Municipal Policy Context

PROJECT N°: ONS2103A

FIGURE: 1-A

SCALE: 1:27,000

DATE: November 2023

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4684000 4682000 4680000 4678000 4676000

DETROIT (U.S.A.)
WINDSOR (CANADA)
Detroit River
SANDWICH STREET
COLLEGE AVENUE
PRINCE ROAD
TECUMSEH ROAD WEST
CAMPBELL AVENUE
TOTTEN STREET
QUELLETTE AVENUE
DOUGALL AVENUE
SOUTH CAMERON BOULEVARD
HURON CHURCH ROAD
South Cameron Wetland Complex
E/C ROW EXPRESSWAY
HIGHWAY 3
ARMANDA STREET
Prairie Remnants (Blackoak Woods) Life ANSI
Ojibway Black Oak Woods
Black Oak Wetland Complex
OJIBWAY PARKWAY
Prairie Remnants (Ojibway Park) Life ANSI
Ojibway Prairie Complex
Ojibway Prairie Wetland Complex
Prairie Remnants (Titcombe Road North) Life ANSI
Ojibway Prairie Provincial Nature Reserve Life ANSI
Ojibway Praire Provincial Park
Prairie Remnants (Southeast Of Nature Reserve) Life ANSI
HIGHWAY 401
GRAND MARAIS ROAD WEST
ACADEMY DRIVE
Turkey Creek
Prairie Remnants (Springgarden Forest) Life ANSI
Oakwood Park Wetland
SPRUCEWOOD AVENUE
Springgarden Road Praire
CITY OF WINDSOR
TOWN OF LASALLE
CABANA ROAD WEST
TODD LANE
St Clair College Praire
FRONT ROAD WEST
REAUME AVENUE
Turkey Creek
Turkey Creek Wetlands
NORMANDY STREET
LaSalle Woods
Lasalle Woods
COUSINEAU ROAD
Reaume Praire
MATCHETTE ROAD
REAUME ROAD
BOUFFARD ROAD
LAURIER DRIVE
MICHIGAN AVENUE
DISPUTED ROAD
MALDEN ROAD
ON047
VICTORY STREET
FRONT ROAD
Detroit River Marshes

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LEGEND

- Approximate Study Area
- Watercourse
- Waterbody
- Railway
- Hydro Line
- Municipal Border (Lower and Single Tier)
- National Border
- Name — ANSI
- Name — Provincially Significant Wetland
- Name — Environmentally Significant Area
- Name — Important Bird Area of Canada
- Name — Provincial Park

0 0.25 0.5 1 1.5 2 Kilometres

NOTES:
- Aerial imagery extracted from Essex County interactive map, 2019.

Datum: NAD83
Projection: UTM Zone 17N

N W E S

THE CITY OF WINDSOR ONTARIO, CANADA wood.

MALDEN AND MATCHETTE ECO PASSAGE STUDY

Provincial Policy Context

PROJECT N°: ONS2103A | **FIGURE: 1-B**

SCALE: 1:27,000 | DATE: November 2021

2.0 Wildlife and Roads: Road Map

A variety of sources regarding road ecology were reviewed. Sources included journals, conference presentations and technical papers, articles, and previous studies in Ontario and beyond (Table 1). Information on preferred crossing types, crossing widths, ingress and egress locations and styles, fencing considerations, and crossing location preferences were noted and are included within this report.

Table 1 Road Ecology Sources Reviewed

ROAD ECOLOGY SOURCES REVIEWED
Barnum, S. (2003). Identifying the Best Locations to Provide Safe Highway Crossing Opportunities for Wildlife. International Conference on Ecology & Transportation, (p. 246). Lake Placid, New York.
Bissonette, J. A., & Adair, W. (2008). Restoring habitat permeability to roaded landscapes with isometrically-scaled wildlife crossings. Biological Conservation 141(2008) 482-488.
Center for Environmental Excellence by AASHTO. (2020). Chapter 3 Designing for Environmental Stewardship in Construction & Maintenance, 3.4. Designing to Accommodate Wildlife, Habitat Connectivity, and Safe Crossings. In Environmental Issue Construction and Maintenance Practices Compendium.
Eberhardt, E. (2008). Current and potential wildlife fatality hotspots along the Thousand Islands Parkway in eastern Ontario, Canada. Ottawa, ON: M. Sc. Thesis, Department of Geography and Environmental Studies, Carleton University.
Holder, S. (2018, July 31). Animals Need Infrastructure Too. Bloomberg.
Ministry of Transportation. (2016). Environmental Guide for Mitigating Road Impacts to Wildlife. St. Catharines, Ontario, 107 pages: Updated final report submitted by Eco-Kare International to the Ministry of Transportation, version March 2017.
Ontario Ministry of Natural Resources and Forestry. (2016). Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario. Queen's Printer for Ontario. 112 pp.
Ontario Road Ecology Group, Toronto Zoo. (2010). A Guide to Road Ecology in Ontario. Environment Canada Habitat Stewardship Program for Species at Risk.
Reed, D. F., & Ward, A. L. (1985). Efficacy of methods advocated to reduce deer-vehicle accidents: research and rationale in the USA. Routes et faune sauvage. Service d'Etudes Techniques de Routes et Autoroutes, Bagneaux, France. Pages 285-293.
Ruediger, B. (2003). A Rapid Assessment Process for Determining Potential Wildlife, Fish and Plant Linkages for Highways. International Conference on Ecology and Transportation. Ecology Program Leader for Road and Highways USDA Forest Service, 200 E. Broadway, MIssoula, MT.
Traffic Injury Research Foundation. (2012). Wildlife-vehicle Collisions in Canada: A Review of the Literature and a Compendium of Existing Data Sources.
U.S. Department of Transportation. (2011). Wildlife Crossing Structure Handbook Design and Evaluation in North America. Publication No. FHWA-CFL/TD-11-003.
Wildlife Collision Prevention Program. (2021). Collision Facts. Retrieved from https://www.wildlifecollisions.ca/collision/collision-facts.htm

Wildlife crossing structures are intended to increase habitat permeability and connectivity across roads and reduce the negative effects of roadways on wildlife and populations. Wildlife crossing structures can be above-grade (overpasses) or below-grade (underpasses) structures designed to facilitate the movement of animals and connections among populations. The following road map has been provided to document the objectives and guide selecting and locating the ecopassages (Figure 2-A; adapted from

Wildlife and Roads, 2007). The road map also provides a timeline of when monitoring and evaluation of crossing effectiveness, as well as maintenance, should occur after the final determinations are made.



Figure 2-A Decision Road Map

The initial step in evaluating ecopassages is determining if wildlife mitigation is needed (identify mitigation need Figure 2-A). The need for wildlife mitigation is well documented and understood by the City; however, a list of existing significant conditions is provided in Section 3.0. In the first part of an ecopassage project, it is important to determine the scope (planning and time constraints), the wildlife and natural processes that may be affected, and the possible goals and objectives of the ecopassage. The second step of the decision-making road map should provide the greatest detail on the ecopassage and how to proceed with determining configuration, maintenance, and how to begin a cost analysis. The third, fourth, and fifth steps of the road map help integrate the project into the larger planning, construction, implementation, and monitoring processes.

The following sections aim to identify and determine the wildlife issues, identify ecopassage solutions and options, and identify placement for the Matchett and Malden ecopassages, initiating steps one and two. Recommendations have been provided in Sections 6.0, 7.0, and 8.0 to assist in future steps and planning.

3.0 Wildlife Issues

Reconnaissance fieldwork was completed in February and June 2021, and secondary sources were queried to inform existing conditions in the Study Area. Occurrences of SAR, provincially rare species, and information on ANSIs, Environmentally Sensitive Areas (ESA), and/or PSWs were collected. Secondary sources reviewed are provided in Appendix A.

To understand the potential wildlife issues in the area, species occurrence is presented below. It is assumed, by the nature of the request, the City understands the need for permeability of roads for wildlife; therefore, this reporting scope does not aim to provide a literature review on the effects of roads

on wildlife. Rather this section aims to identify the species, natural areas, and natural processes affected by the barriers of Matchett Road and Malden Road.

3.1 Flora and Natural Areas

Species lists compiled for the Study Area (Appendix B) produced 704 vascular plant species. Of the plant species recorded, 168 (24%) are non-native to the region (ranked as SE 1-5 or H by NHIC) and 117 of the non-native plants are ranked as highly abundant or invasive (SE4 or SE5). There are 123 provincially rare species (S1, S2, S3) and 21 provincially listed on the Endangered Species Act, 2007 (Table 2). One hundred and forty-six (146) species are prairie and savannah indicator species present on the Southern Ontario Floral Inventory Analysis (SOFIA) list (SOFIA, 2020) and 235 are rare or uncommon on the List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E; Oldham, 2017).

Table 2 Flora Species listed on the Endangered Species Act, 2007

SCIENTIFIC NAME	ENGLISH NAME	S RANK (PROVINCIAL)	G RANK (GLOBAL)	ESA
Agalinis skinneriana	Skinner's False Foxglove	S1	G3G4	END
Aletris farinosa	White Colicroot	S2	G5	END
Ammannia robusta	Scarlet Ammannia	S1	G5	END
Arisaema dracontium	Green Dragon	S3	G5	SC
Castanea dentata	American Chestnut	S1S2	G4	END
Chimaphila maculata	Spotted Wintergreen	S2	G5	THR
Cornus florida	Eastern Flowering Dogwood	S2?	G5	END
Fraxinus quadrangulata	Blue Ash	S2?	G5	THR
Gymnocladus dioicus	Kentucky Coffee-tree	S2	G5	THR
Hibiscus moscheutos	Swamp Rose-mallow	S3	G5	SC
Juglans cinerea	Butternut	S2?	G3	END
Lespedeza virginica	Slender Bush-clover	S1	G5	END
Liatris spicata	Dense Blazing-star	S2	G5	THR
Liparis liliifolia	Purple Twayblade	S2S3	G5	THR
Morus rubra	Red Mulberry	S2	G5	END
Platanthera leucophaea	Eastern Prairie Fringed Orchid	S2	G2G3	END
Polygala incarnata	Pink Milkwort	S1	G5	END
Quercus shumardii	Shumard Oak	S3	G5	SC
Rosa setigera	Climbing Prairie Rose	S2S3	G5	SC
Solidago riddellii	Riddell's Goldenrod	S3	G5	SC
Symphyotrichum praealtum	Willow-leaved Aster	S2	G5	THR

Note(s)

1. S-Rank= Provincial (Sub-national) Rank, S1=Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure. S#S#=Range. Breeding Status Qualifiers: B – Breeding, N – Nonbreeding, M – Migrant. ? =Inexact or Uncertain.
2. ESA= Endangered Species Act,2007 (Ontario), END= Endangered, THR= Threatened, SC= Special Concern

Matchett Road occurs between the natural areas comprising the Ojibway Prairie Complex. The Ojibway Prairie Complex (Prairie Remnants Life ANSI) is a collection of five closely situated natural areas (Figure 1-B). From west to east, the areas are:

- Blackoak Woods (Ojibway Black Oak Woods; locally also known as Black Oak Heritage Park),
- Ojibway Park (Ojibway Prairie Complex; locally also known as Ojibway Tom Joy Woods Park),
- Southeast Of Nature Reserve,
- Titcombe Road North (locally also known as Tallgrass Prairie Heritage Park), and
- Springgarden Forest (Springgarden Road Prairie; locally also known as SGNA).

Essex Region Conservation Authority (ERCA) has also delineated these areas as Environmentally Significant Areas (ESA) (Figure 1-B) and when doing so also provided names, these names are also provided in brackets. Additionally, local names have developed which are indicated above and used to refer to areas throughout this report. Lastly, another ANSI occurs in the area called the Ojibway Prairie Provincial Nature Reserve Life Science ANSI (Figure 1-B) and this ANSI is also the Ojibway Praire Provincial Park (Figure 1-B).

The Ojibway Prairie Complex ANSI has also been identified as a Carolinian Canada site (Government of Ontario, 2002). The dominant feature in the Ojibway Prairie Provincial Nature Reserve is the tallgrass prairie plant community and related plant communities, such as oak savannah. Tallgrass prairie and oak savannah communities are designated as critically imperilled in Ontario (Rodger, 1998). Altogether 533 flowering plant species have been documented in and around the Ojibway Prairie Provincial Nature Reserve, of which more than 60 are of prairie affinity (Government of Ontario, 2002). Animal species representative of prairie habitats and found in the nature reserve include Butler's Gartersnake and Eastern Massasauga (Government of Ontario, 2002).

Malden Road occurs on the east side of the Ojibway Prairie Complex ANSI. Further east of Malden Road is the SGNA – Oakwood Park crossing (Tunnel Top 5) and the Oakwood Park Wetland in the City of Windsor. The LaSalle Woods and Turkey Creek Wetlands in the Town of La Salle (Figure 1-B) occur in the southern portion of the study area, near Matchett and Malden Roads.

At the northern extent of the study area, between Matchett and Malden Roads, is tallgrass habitat that has been protected and restored as part of the Parkway project. This area is called the Chappus Street Restoration Area and includes a variety of habitat types including tallgrass prairie, savannah, meadow marsh, PSW (thicket and deciduous swamp) and woodland. The area is home to five plant SAR and over 20 provincially rare plant species.

3.2 Avifauna

Species lists compiled for the Study Area (Appendix B) resulted in 171 bird species. Of the species recorded, three were recorded as oak savannah species (not restricted to these habitats) in SOFIA (SOFIA, 2020). The majority of species documented are associated with wooded and successional habitats or water and wetlands. Seven non-native species are documented, Rock Pigeon, Mute Swan, House Finch, House Sparrow, Ring-necked Pheasant, Eurasian Collared-Dove, and European Starling.

Fourteen provincially rare (S1, S2, S3) and 21 provincially listed on the Endangered Species Act, 2007 (Table 3) occur.

Table 3 Avian Species listed on the Endangered Species Act, 2007

SCIENTIFIC NAME	ENGLISH NAME	S RANK (PROVINCIAL)	G RANK (GLOBAL)	SARO
Antrostomus vociferus	Eastern Whip-poor-will	S4B	G5	THR
Cardellina canadensis	Canada Warbler	S4B	G5	SC
Chaetura pelagica	Chimney Swift	S4B,S4N	G4G5	THR
Chordeiles minor	Common Nighthawk	S4B	G5	SC
Contopus cooperi	Olive-sided Flycatcher	S4B	G4	SC
Contopus virens	Eastern Wood-pewee	S4B	G5	SC
Dolichonyx oryzivorus	Bobolink	S4B	G5	THR
Falco peregrinus	Peregrine Falcon	S3B	G4	SC
Haliaeetus leucocephalus	Bald Eagle	S2N,S4B	G5	SC
Hirundo rustica	Barn Swallow	S5B	G5	THR
Hylocichla mustelina	Wood Thrush	S4B	G4	SC
Icteria virens	Yellow-breasted Chat	S1B	G5	END
Ixobrychus exilis	Least Bittern	S4B	G4G5	THR
Melanerpes erythrocephalus	Red-headed Woodpecker	S4B	G5	SC
Parkesia motacilla	Louisiana Waterthrush	S3B	G5	THR
Podiceps auritus	Horned Grebe	S1B,S4N	G5	SC
Protonotaria citrea	Prothonotary Warbler	S1B	G5	END
Rallus elegans	King Rail	S2B	G4	END
Riparia riparia	Bank Swallow	S4B	G5	THR
Setophaga cerulea	Cerulean Warbler	S3B	G4	THR
Sturnella magna	Eastern Meadowlark	S4B	G5	THR

Note(s)

1. S-Rank= Provincial (Sub-national) Rank, S1=Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure. S#S#=Range. Breeding Status Qualifiers: B – Breeding, N – Nonbreeding, M – Migrant. ? =Inexact or Uncertain.
2. ESA= Endangered Species Act,2007 (Ontario), END= Endangered, THR= Threatened, SC= Special Concern

Many of the bird species documented in the Study Area are area-sensitive and have other restrictive requirements for habitat. While all species documented in the Study Area are capable of sustained flight and very few are prone to nesting on road shoulders, there are several factors related to roads that may cause barriers to avifauna. Research in the past decade has suggested some bird guilds (e.g., forest-dependent) are less likely to be found next to roads and are hesitant to cross (Johnson, Evans, & Jones, 2017; Benítez-López, Alkemade, & Verweij, 2010). High levels of traffic noise (reducing song detection), visual disturbance from passing vehicles, and the risk of collision with vehicles are all potential risks. There is mounting evidence that migration and breeding of birds are also affected by roads.

3.3 Herptiles

Species lists compiled for the Study Area (Appendix B) resulted in 25 amphibian, reptile, and turtle (herptile) species. Of the species recorded, five were recorded as oak savannah or tallgrass prairie species

in SOFIA (SOFIA, 2020). The only exotic species documented was pond slider turtles, such as Red-eared Sliders. Ten provincially rare (S1, S2, S3) and 11 provincially listed on the Endangered Species Act, 2007 (Table 4) occur.

Table 4 Herptile Species listed on the Endangered Species Act, 2007

SCIENTIFIC NAME	ENGLISH NAME	S RANK (PROVINCIAL)	G RANK (GLOBAL)	SARO
Apalone spinifera	Spiny Softshell	S2	G5	END
Chelydra serpentina	Snapping Turtle	S4	G5	SC
Emydoidea blandingii	Blanding's Turtle	S3	G4	THR
Graptemys geographica	Northern Map Turtle	S3	G5	SC
Heterodon platirhinos	Eastern Hog-nosed Snake	S3	G5	THR
Pantherophis gloydi pop. 2	Eastern Foxsnake (Carolinian population)	S2	G3TNR	END
Plestiodon fasciatus pop. 1	Common Five-lined Skink (Carolinian population)	S2	G5T2	END
Regina septemvittata	Queensnake	S2	G5	END
Sistrurus catenatus pop. 2	Massasauga (Carolinian population)	S1	G3TNR	END
Sternotherus odoratus	Eastern Musk Turtle	S3	G5	SC
Thamnophis butleri	Butler's Gartersnake	S2	G4	END

Note(s)

1. S-Rank= Provincial (Sub-national) Rank, S1=Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure. S#S#=Range. Breeding Status Qualifiers: B – Breeding, N – Nonbreeding, M – Migrant. ? =Inexact or Uncertain.
2. ESA= Endangered Species Act,2007 (Ontario), END= Endangered, THR= Threatened, SC= Special Concern

It is well known and well documented that amphibians and reptiles are the most negatively affected species groups regarding the barrier and threat of roads and traffic in Southern Ontario (Ontario Ministry of Natural Resources and Forestry, 2016). The City of Windsor and the surrounding region contain critical habitat for several of the SAR herptiles and some of the only remaining populations. A local study estimated that SAR reptiles were killed on roads across the Ojibway Prairie Complex at a minimum average of 19 individuals a month (Choquette & Valliant, 2016). Threats from roads include direct mortality of animals and habitat loss, degradation, and fragmentation (reducing gene flow and, in some cases, segregation of populations).

3.4 Mammals

Species lists compiled for the Study Area (Appendix B) produced 26 mammal species to genus. The only exotic species documented were Norway Rat and Black Rat. Two provincially rare (S1, S3) and listed species on the Endangered Species Act, 2007 (Table 5) were documented, Little Brown Myotis and Gray Fox.

Table 5 Mammal Species listed on the Endangered Species Act, 2007

SCIENTIFIC NAME	ENGLISH NAME	S RANK (PROVINCIAL)	G RANK (GLOBAL)	SARO
Myotis lucifugus	Little Brown Myotis	S3	G3	END
Urocyon cinereoargenteus	Gray Fox	S1	G5	THR

Note(s)

1. S-Rank= Provincial (Sub-national) Rank, S1=Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure. S#S#=Range. Breeding Status Qualifiers: B – Breeding, N – Nonbreeding, M – Migrant. ? =Inexact or Uncertain.
2. ESA= Endangered Species Act,2007 (Ontario), END= Endangered, THR= Threatened, SC= Special Concern

A reconnaissance survey was conducted in February 2021 to determine animal corridors on Matchett Road and Malden Road south of Titcombe Road for approximately 1 km (Figure 3-B). It is known that White-tail Deer are locally abundant in the Study Area, but their movement patterns within the Study Area are not documented. Most of the wildlife activity was White-tail Deer in the fire break along Matchett Road, next to the fence (Figure 3-A).



Fire Break along Matchett Rd., signs of frequent deer activity



Matchett Rd. gap in fencing with signs of frequent deer activity

Figure 3-A Fire Break White-tailed Deer Activity

Species such as White-tailed Deer, Coyote, Red Fox, Raccoon and other Meso-mammals (such as Striped Skunk, Groundhog, Opossum, and Eastern Gray Squirrel), Little Brown Bat, Eastern Red Bat, Silver-haired Bat, Big Brown Bat, and Hoary Bat have been confirmed in Ojibway Park by Wood (2021). The main response by mammals to roads in a meta-analysis was avoidance or reduced population density (Benítez-López, Alkemade, & Verweij, 2010). In the Ontario Road Safety Annual Report (Ministry of Transportation, 2018), Wildlife-vehicle Collisions (WVCs), which involved large animals (e.g., White-tailed Deer), resulted in four fatalities, 329 personal injuries, and 11,721 WVCs which caused property damage. Much like avifauna and herptiles, roads fragment habitats and reduce the permeability of movement for mammals.

Figure 3-B Field Observations redacted to protect sensitive information

3.5 Other Species

Aquatic species such as Lampreys, fishes, and mussels were documented in secondary sources (Appendix B). However, these species are more likely to occur in the Detroit River. It is not known if Basin Drain and the roadside ditches are fish habitat. Four species are non-native, goldfish, Common Carp, White Perch, Round Goby. Eight are provincially rare (S1, S2, S3) and listed on the Endangered Species Act, 2007, Northern Sunfish, Spotted Sucker, Pugnose Shiner, Northern Madtom, Channel Darter, Northern Riffleshell, Eastern Pondmussel, and Kidneyshell.

Eight snails were documented in secondary sources (Appendix B). Five are non-native, Grovesnail, Chinese Mysterysnail, Gray Fieldslug, Giant Gardenslug, and Dark-bodied Glass-snail. The Striped Whitelip and Proud Globelet are provincially rare (S1, S2, S3), and the Proud Globelet is also an endangered species.

Hundreds of spiders and insects occurred in the iNaturalist search that NHIC does not recognize, and therefore information on native and rare status is unknown. However, 794 species recognized by NHIC were collected from all queried sources (Appendix B). Fifty-six (56) are provincially rare (S1, S2, S3) and three are provincially listed on the Endangered Species Act, 2007, Rusty-patched Bumble Bee, Monarch, and Mottled Duskywing. Lastly, three are prairie and savannah indicator species present on the SOFIA list (SOFIA, 2020), Wild Indigo Duskywing, Mottled Duskywing, and Regal Fritillary.

In line with the above, the City of Windsor contains ample biodiversity and Matchett and Malden Road may act as barriers to the safe movement and natural processes of invertebrate species.

4.0 Identify Ecopassage Solutions and Options

To address structure type, species-specific behaviours should be incorporated into the crossing structure design. However, sometimes these concerns are offset by other project constraints, including the cost of the structure, available material and expertise, and physical limitations of the site, e.g., soil, terrain, and hydrology (U.S. Department of Transportation, 2011). To the extent possible, the objective should be to create landscape permeability for a variety of species. In the City of Windsor, those solutions which maximize crossing by a variety of species are preferred due to the concentrated biodiversity within natural areas. Ultimately, wildlife crossings have two purposes: to 1) connect habitats and populations; and 2) reduce road mortality. When facilitating connections, overpasses and underpasses are discussed.

Wildlife crossings come in a variety of shapes and sizes, depending on their specific objective. Overpass designs are landscape bridges, wildlife overpasses, mixed-use overpasses (wildlife-human), and canopy crossings. Underpass designs are viaducts, large mammal underpasses, mixed-use underpasses, underpasses with waterflow, small and medium mammal underpasses, modified culverts, and herptile tunnels. Determining the type of wildlife crossing structure most suitable for a given location depends on several criteria (Table 6; Table 7). Selection begins by identifying a general wildlife crossing type that conforms to the habitat connectivity potential for the target species and topography of the site chosen (U.S. Department of Transportation, 2011). Additionally, landscape bridges and large wildlife overpasses have been the most effective structures for multiple species (U.S. Department of Transportation, 2011 and Ministry of Transportation, 2016).

The Study Area has large mammals-ungulates (deer); high-mobility medium-sized mammals-carnivores (coyote, fox); low mobility medium-sized mammals (raccoon, skunk, groundhog); small mammals (voles, mice); amphibians; and reptiles. To provide a mechanism of evaluation to determine which wildlife

crossing type is recommended for most species, a rank was provided in Table 6. Landscape bridge and viaduct can accommodate all species mostly due to their large size (width varies, however, 50+ m wide is typical). Wildlife overpass will also accommodate all species and may not be as wide as a landscape bridge, especially if the length is shorter. A large underpass will also largely accommodate the crossing of various species if it is not restrictive to White-tailed Deer. These options must include adaptations, such as microhabitat features, to be permeable to the wide variety of species.

Table 6 Suitability of Wildlife Crossing Design Type for Species and Groups

Species/Group	Landscape Bridge	Wildlife Overpass	Mixed-use Overpass	Canopy Crossing	Viaduct	Large Mammal Underpass	Mixed-use Underpass	Underpass with Waterflow	Small to Medium Mammal Underpass	Modified Culvert	Herptile Tunnel
Ungulates-Deer	✪	✪	⊗	N/A	✪	⊙	⊗	⊙	⊗	⊗	N/A
Carnivores – Coyote, Fox	✪	✪	✪	N/A	✪	✪	✪	✪	✪	⊙	N/A
Low Mobility Mammal-Raccoon, Skunk	✪	✪	✪	N/A	✪	✪	✪	✪	✪	✪	⊙
Semi-arboreal Mammals (Red Squirrel	⊙	⊙	⊙	✪	⊙	⊙	⊙	⊙	⊗	⊗	⊗
Semi-aquatic Mammals	⊙	⊙	⊙	N/A	⊙	⊙	⊙	✪	⊙	✪	⊙
Small Mammals - voles, mice	✪	✪	✪	⊙	✪	✪	✪	✪	✪	✪	⊙
Amphibians	⊙	⊙	⊙	N/A	⊙	⊙	⊙	⊙	⊙	✪	✪
Reptiles	✪	✪	✪	N/A	✪	✪	✪	⊙	✪	✪	⊙
Ranking[4]	13	13	11	3	13	12	11	12	10	11	6

Note(s)

1. ✪ [Recommended]
2. ⊙ [Possible if adapted]
3. ⊗ [Not Recommended]
4. To evaluate which design type accommodates the most species/group a ranking was provided where ✪=2 pts, ⊙=1pts, and ⊗=0pts.

Table 7 General Wildlife Crossing Design Criteria

Species	Openness Ratio	Tunnel-type (Minimum Dimensions)					Substrate Type	Additional Considerations
		Pipe Culvert (diameter)	Box Culvert	Open or Grated-top Culvert	Arch Tunnel	Large Underpass or Overpass		
Reptiles (Turtle)	>0.25 no less than 0.1	15m length: 1.5m 15-25m length: 1.8m	15m length: 1.5 x 1.0m 15-25m length: 1.8 x 1.0m	May increase crossing success	15m length: 1.8 x 0.9m 15-25m length: 2.0 x 1.0m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Water for aquatic species, substrate may not be as important for terrestrial species	Crossings should be placed along migration corridors. Structures should not be separated more than 150-300m; several hundreds of metres (Carsignol et al. 2005).
Reptiles (Snake)	>0.1 no less than 0.07	15m length: 1.0m 15-25m length: 1.5m	15m length: 1.0 x 1.0m 15-25m length: 1.5 x 1.0m	May increase crossing success	15m length: 1.5 x 0.75m 15-25m length: 1.8 x 0.9m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Water for aquatic species, open-bottom or natural substrate may enhance use. Cover objects at larger crossing structures are ideal.	Crossings should be placed along migration corridors. Structures should not be separated more than several hundreds of metres (Carsignol et al. 2005).
Amphibians (Frog, Toad)	>0.1 no less than 0.07	15m length: 1.0m 15-25m length: 1.5m	15m length: 1.0 x 1.0m 15-25m length: 1.5 x 1.0m	Both closed and open top tunnels have been used	15m length: 1.5 x 0.75m 15-25m length: 1.8 x 0.9m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Terrestrial bottom tunnels should be used for anurans; high moisture content and even small pools of standing water may be beneficial but the tunnel should not be flooded with water.	Crossings should be placed along migration corridors (between overwintering and breeding habitat). Tunnels for amphibians should not be more than 50 m apart (Schmidt and Zumbach 2008; Ryser and Grossenbacher 1989).
Amphibians (Salamander)	>0.1 no less than 0.07	15m length: 1.0m 15-25m length: 1.5m	15m length: 1.0 x 1.0m 15-25m length: 1.5 x 1.0m	Both closed and open top tunnels have been used by mole salamanders	15m length: 1.5 x 0.75m 15-25m length: 1.8 x 0.9m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Terrestrial bottom tunnels should be used for salamanders; high moisture content and even small pools of standing water may be beneficial but the tunnel should not be flooded with water.	Crossings should be placed along migration corridors (between overwintering and breeding habitat). Tunnels for amphibians should not be more than 50 m apart (Schmidt and Zumbach 2008; Ryser and Grossenbacher 1989) as salamanders will not follow a fence for long distances (e.g. Pagnucco et al. 2012).
Small Mammal (Rabbit, Mouse, Squirrel)	0.05	0.5-1m	<3.0m <2.0m		<3.0m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Cover should be provided within larger tunnels to encourage crossing of smaller mammals.	Ledges for mammals can be added to drainage culverts to encourage crossing. More frequently placed culverts (150 to 300 m intervals) using a range of sizes (1 to 1.5 m for mid-size animals; 0.5 to 1 m size for small mammals) can improve connectivity across roads for small animals.
Meso-mammals (Fox, Raccoon)	0.4	1-1.5m	3.0m		>3.0m	If longer than 25m span, Large Underpass (>3m) or Overpass preferred	Terrestrial pathways should be 0.5 m for small and medium animals, and 2-3 m for large mammals (Clevenger and Huijser 2011).	Ledges for mammals can be added to drainage culverts to encourage crossing. Culverts should be spaced every 150-300 m.
Large Mammal (Coyote, Deer)	0.6 - 1.0 for Deer 0.2 Other	3.0m can be used but larger is preferred	3.0m can be used but larger is preferred		3.0m can be used but larger is preferred	Overpass preferred by Deer	Terrestrial pathways should be 0.5 m for small and medium animals, and 2-3 m for large mammals (Clevenger and Huijser 2011).	Minimizing human activity near the structure is considered important for wildlife use. Culverts should be spaced every 1.5 km.

Note(s)

1. Openness Ratios for Box Culvert = (Height X Width) / Length and for Corrugated Steel Pipe (CSP) = (πr^2) / Length
2. Ontario Ministry of Natural Resources and Forestry. April 2016. Best Management Practices for Mitigating the Effects of Roads on Amphibians and Reptile Species at Risk in Ontario. Queen's Printer for Ontario. 112 pp.
3. Ministry of Transportation. 2016. Environmental Guide for Mitigating Road Impacts to Wildlife. Updated final report submitted by Eco-Kare International to the Ministry of Transportation, St. Catharines, Ontario, 107 pages.
4. Credit Valley Conservation. 2017. Fish and Wildlife Crossing Guidelines. Version number 1.0. Last Updated March 20, 2017

5.0 Identify Placement for the Matchett and Malden Ecopassages

Location of ecopassages is important for less mobile species or animals with small home ranges or habitat specialists (Yanes, Velasco, & Suárez, 1995; Jackson & Griffin, 2000). Ecopassages should not lead to an ecological dead-end and should allow for dispersal and free movement to areas which wildlife requires for biological processes. Matchett Road and Malden Road have been identified as a wildlife conflict zone. Wildlife conflict zones are road segments where animals are most likely to interact with the road. Therefore, mitigation efforts (e.g., wildlife crossings and ecopassages) should be considered in wildlife conflict zones (Ministry of Transportation, 2016). A habitat connection on Matchett Road and Malden Road considers the larger landscape and projected land use.

Connectivity analysis at the landscape level can provide a general area where wildlife may be more likely to cross. Still, specific locations may need to be determined based on fieldwork and design considerations. Design considerations such as local conditions and engineering concerns determine the specific placement of wildlife crossings and are required at the project level (U.S. Department of Transportation, 2011). A connectivity analysis was completed herein for the Study Area. Road mortality studies for reptiles and spatial analysis studies completed by others (Choquette & Valliant, 2016)suggest that reptiles move in a southeast-northwest route along the utility right-of-way from LaSalle Woods ESA, through the Ojibway Prairie Complex, to the Parkway.

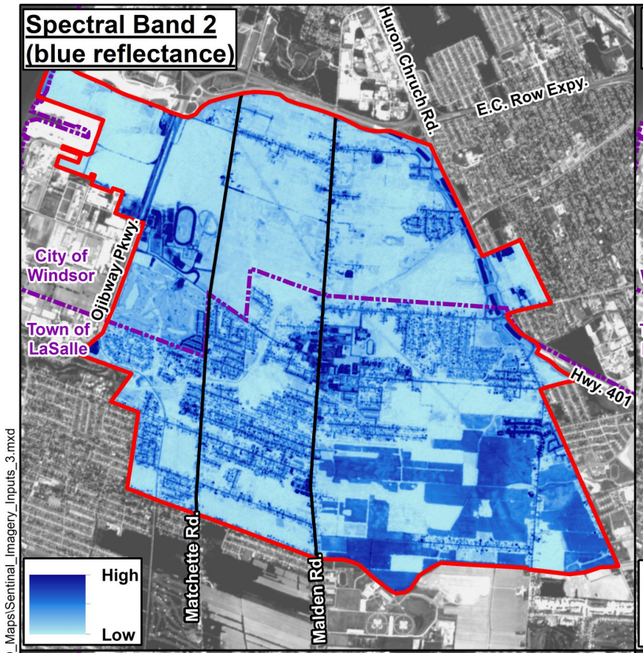
5.1 Connectivity Analysis

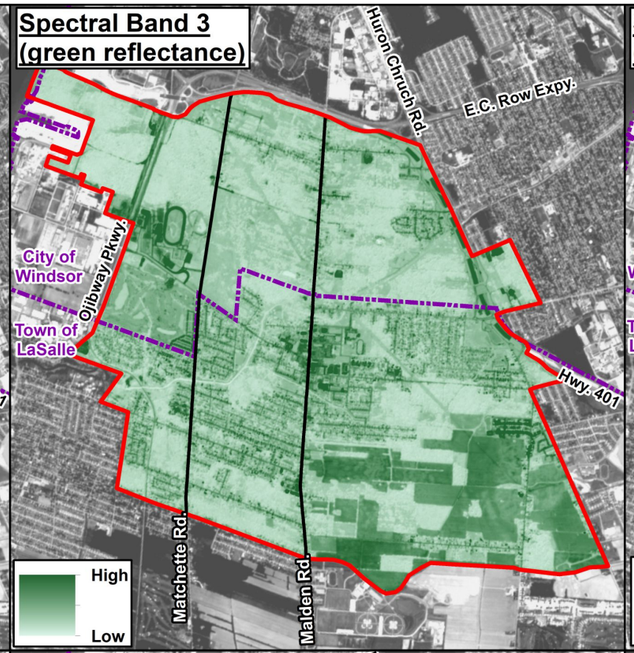
The connectivity analysis for the optimal ecopassage location used the least resistive (lowest impedance) wildlife movement corridor habitat patch GIS modelling. Sentinel 2A (European Space Agency) multi-spectral satellite imagery (10 m by 10 m spatial resolution), collected on June 18, 2020, was used as the raw data input for constructing the wildlife movement impedance surface. Various reflectance bands along with multi-spectral imagery derived index layers were combined into an eight-layer stacked data pool to be used in an unsupervised image classification procedure (Figure 5-A for information regarding multi-spectral imagery and indices used in this analysis).

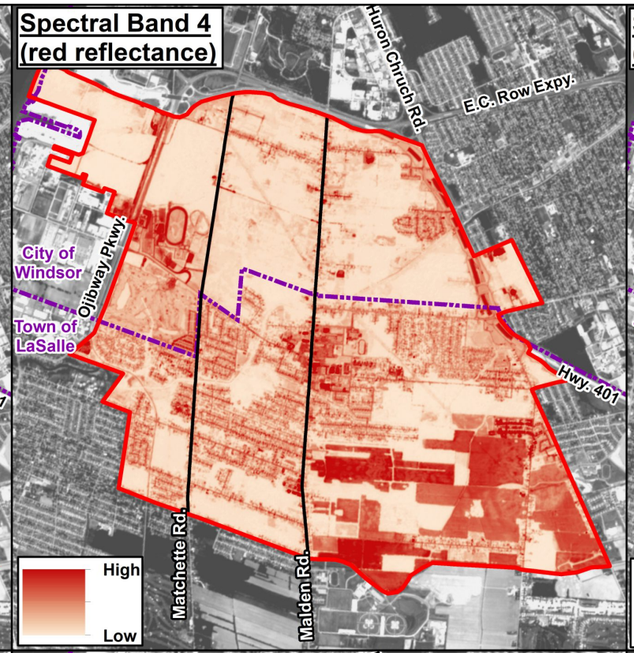
The ISODATA (k-means) clustering algorithm was used on this data pool to categorize every 10 m by 10 m pixel into specific clusters based on overall similarities of reflectance characteristics from the layer stack. The resulting classified imagery was further aggregated into ordinal categories using visual inspection and known landscape features, such as golf courses, existing ecopassage locations (e.g., T5), and vegetation communities within the Study Area. The ordinal categories were ranked from 1, low wildlife movement impedance/resistivity (i.e., most suitable wildlife habitat), to 5, high wildlife movement impedance/resistivity (i.e., least suitable wildlife habitat). These categories were combined to generate the wildlife movement impedance surface. This surface functioned as the basis for habitat connectivity and corridor identification across the Study Area (Figure 5-B – MAP A for the wildlife movement impedance surface).

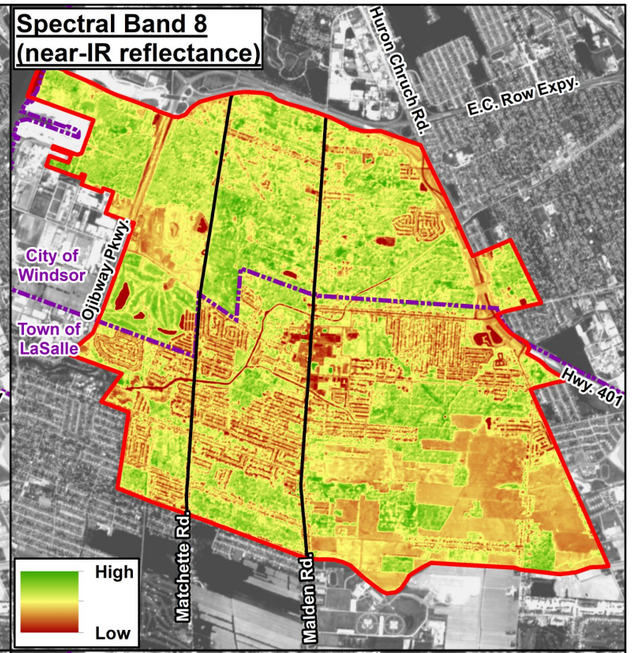
Patches of pixels categorized with the lowest impedance values from the wildlife movement impedance surface were isolated in areas west of Matchett Road (the western portion of the Study Area) and east of Malden Road (the eastern portion of the Study Area). These patches of land were considered “good” habitat fragments for general wildlife within the Study Area based on the image classification and category aggregation performed earlier. A cumulative landscape wildlife movement resistivity surface was generated extending outward from good habitat patches west of Matchett Road, and subsequently

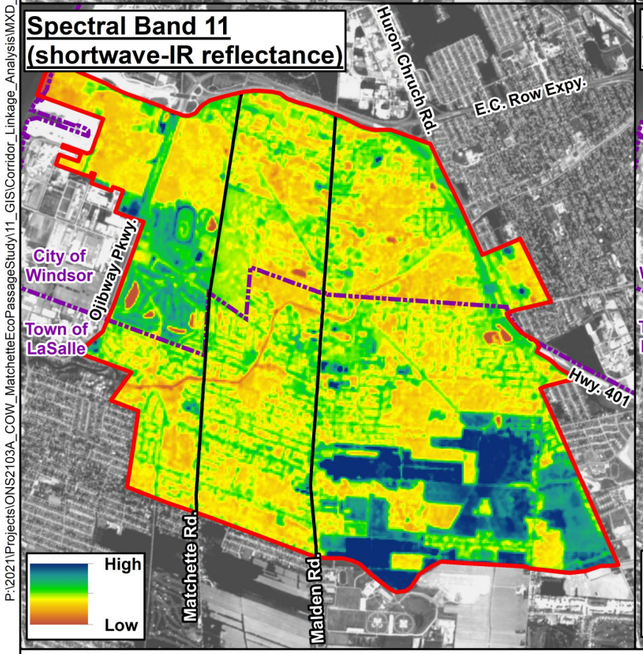
extending outward from good habitat patches east of Malden Road (Figure 5-B – MAP B and C for information regarding the cumulative landscape wildlife movement resistivity surfaces).
The two cumulative landscape wildlife movement resistivity surfaces (one extending from good habitat west of Matchett Road, and one extending from good habitat east of Malden Road) were combined to identify the lowest cumulative impedance connective corridors crossing the Study Area, and therefore; crossing both Malden Road and Matchett Road. A density slicing technique was used on the combined cumulative landscape wildlife resistivity surface to highlight primary, secondary, and tertiary corridor areas connecting good habitat patches on one side of the Study Area to the other (Figure 5-C – MAP A for information regarding the combined cumulative landscape wildlife resistivity surface and corridor areas).
The results of the least resistive (lowest impedance) wildlife movement corridor habitat patch connectivity analysis was simplified to help illustrate generalized good wildlife corridors crossing Malden Road and Matchett Road. Also, segments of Malden Road and Matchett Road were identified as Primary Crossing Areas, Secondary Crossing Areas and Tertiary Crossing Areas based on the results from the analysis (Figure 5-C – MAP B for information regarding the wildlife movement corridors and crossing locations/areas).

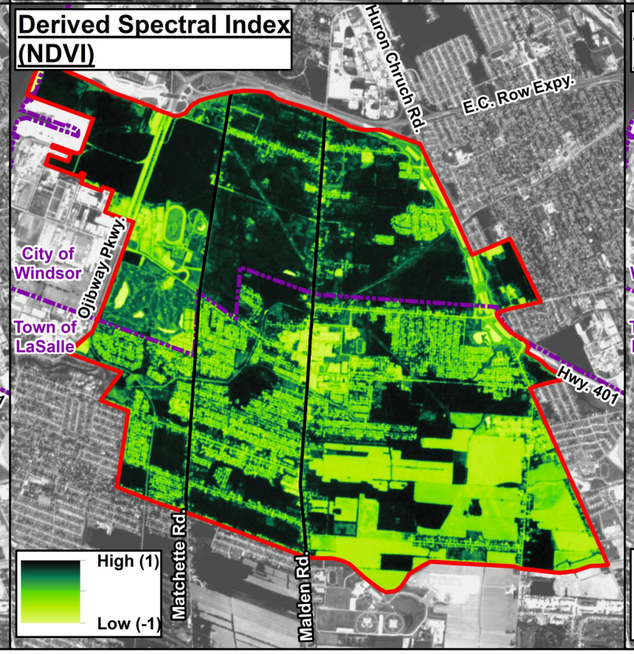


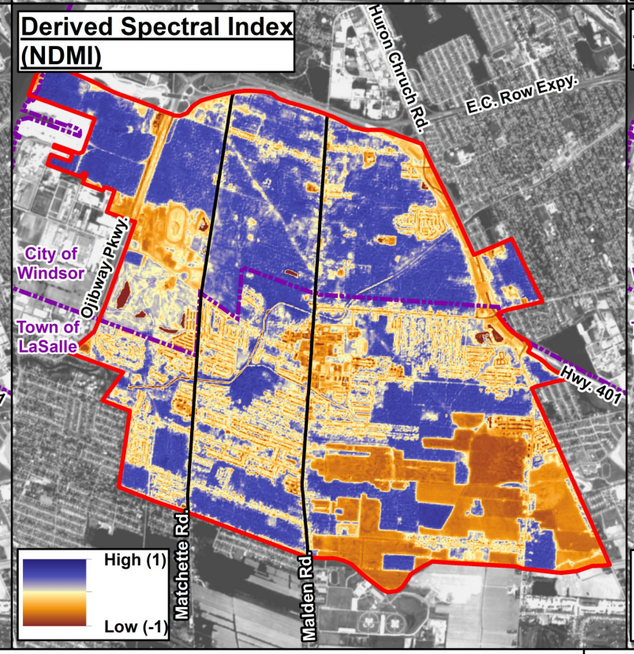


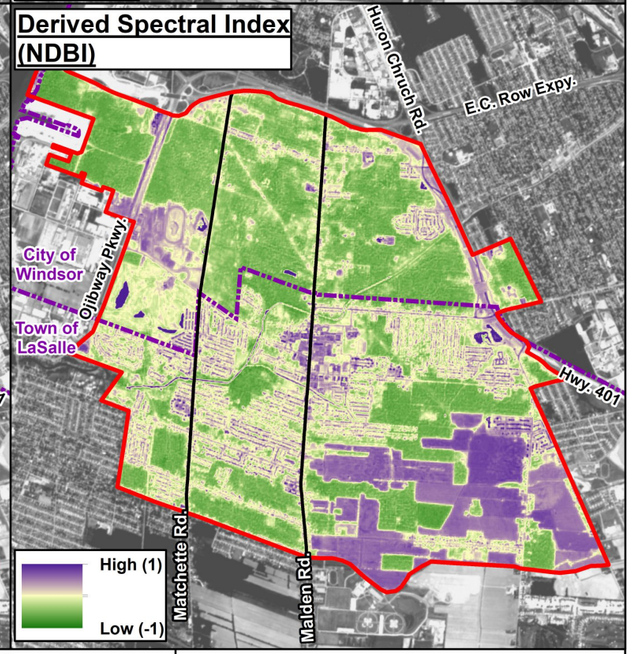












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LEGEND

- Approximate Study Area
- Malden and Matchette Road Location within Study Area
- City of Windsor Municipal Border

Sentinel 2A Imagery and Imagery Derived Input Information:

- Spectral Band 2: Blue reflectance values. Ten metre resolution imagery with 16-bit scale reflectance ramp. Reflectance digital number values represent wavelength range 458-523 nm.
- Spectral Band 3: Green reflectance values. Ten metre resolution imagery with 16-bit scale reflectance ramp. Reflectance digital number values represent wavelength range 543-578 nm.
- Spectral Band 4: Red reflectance values. Ten metre resolution imagery with 16-bit scale reflectance ramp. Reflectance digital number values represent wavelength range 650-680 nm.
- Spectral Band 8: Near infrared reflectance values. Ten metre resolution imagery with 16-bit scale reflectance ramp. Reflectance digital number values represent wavelength range 785-899 nm.
- Spectral Band 11: Shortwave infrared reflectance values. Twenty metre resolution imagery with 16-bit scale reflectance ramp. Reflectance digital number values represent wavelength range 1565-1655 nm.
- Derived Spectral Index (NDVI): Normalized Difference Vegetation Index (band 8 - band 4 / band 8 + band 4). Derived spectral index indicating variation in vegetation growth and productivity.
- Derived Spectral Index (NDMI): Normalized Difference Moisture Index (band 8 - band 11 / band 8 + band 11). Derived spectral index indicating variation in vegetation water content and plant biomass.
- Derived Spectral Index (NDBI): Normalized Difference Built-up Index (band 11 - band 8 / band 11 + band 8). Derived spectral index indicating variation in urbanized, built-up or anthropogenic developed areas.

NOTES:
- Road and Municipal border info extracted from Ontario GeoHub, NDMNRF 2021
- Sentinel 2A satellite data extracted from Copernicus Open Access Hub, European Space Agency, Scene Date is June 18, 2020. L1C_T17TLG_A026063_20200618 T162536

Datum: NAD83
Projection: UTM Zone 17N

0 2.5 5 10 15 Kilometres

THE CITY OF WINDSOR ONTARIO, CANADA wood.

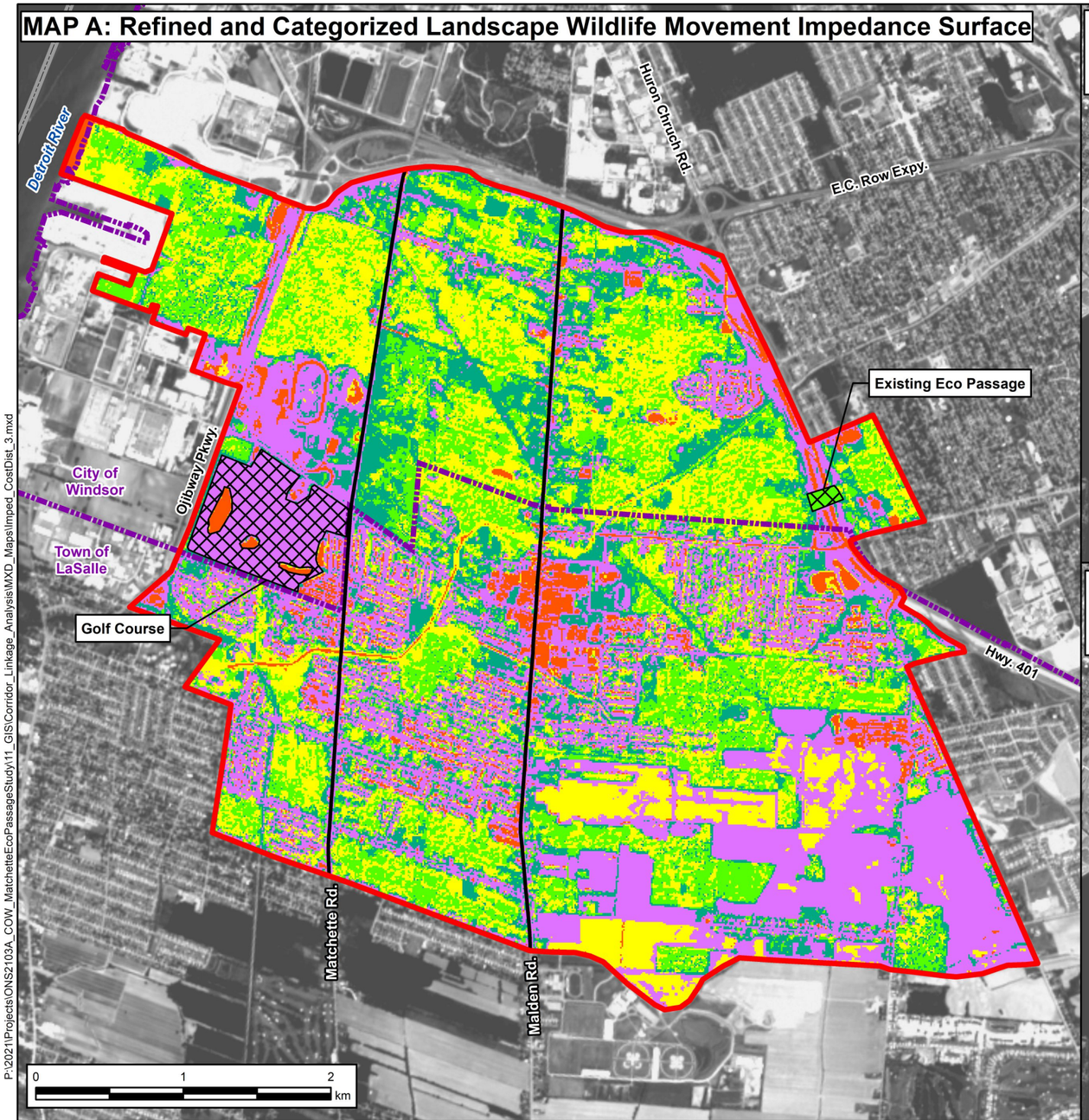
MALDEN AND MATCHETTE ECO PASSAGE STUDY

Sentinel 2A Satellite Platform Imagery and Imagery Derived Inputs for Inclusion in General Landscape Wildlife Movement Impedance Surface

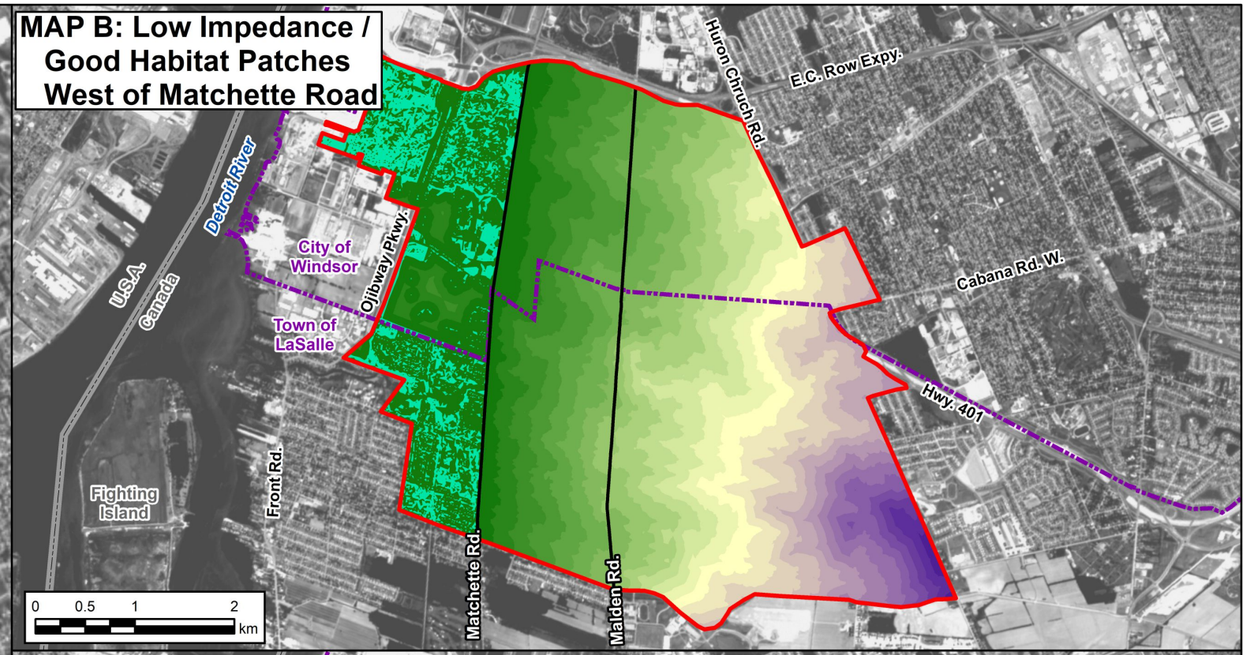
PROJECT N°: ONS2103A | **FIGURE: 5A**

SCALE: 1:68,000 | DATE: October 2021

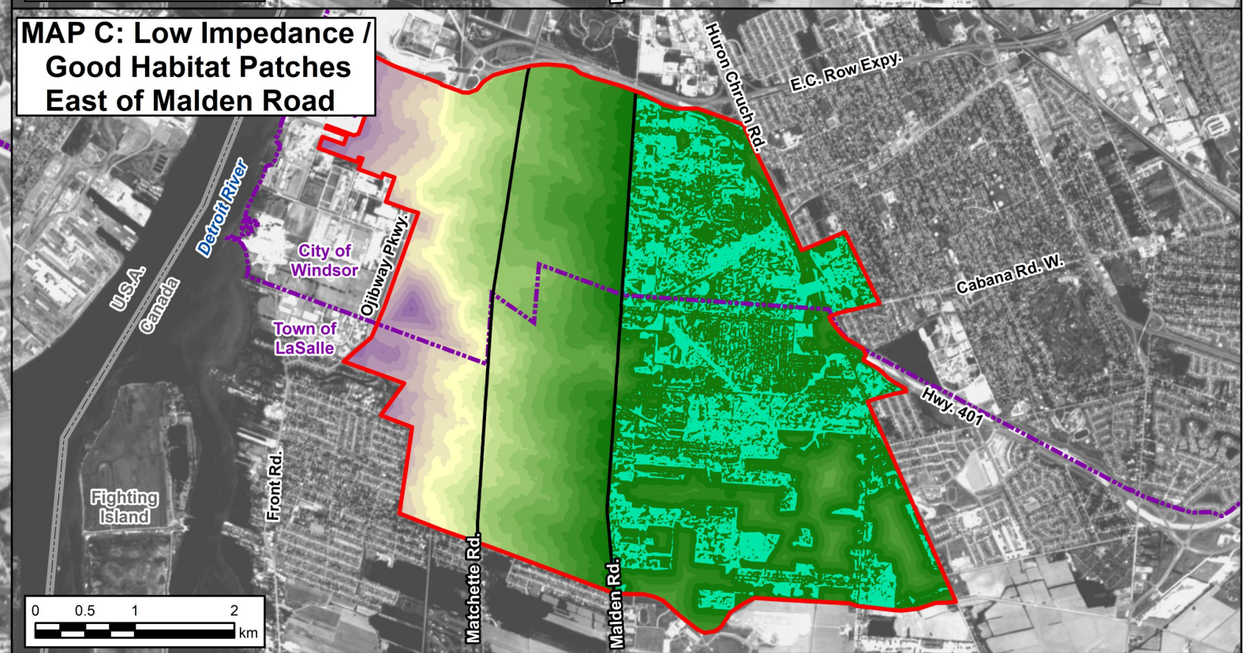
MAP A: Refined and Categorized Landscape Wildlife Movement Impedance Surface



MAP B: Low Impedance / Good Habitat Patches West of Matchette Road



MAP C: Low Impedance / Good Habitat Patches East of Malden Road



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LEGEND

- Approximate Study Area
- Malden and Matchette Road Location within Study Area
- City of Windsor Municipal Border
- National Border

MAP A:

- Areas where Categories were refined due to visual inspection of anthropogenic Influence (labelled on map)

Categorized Landscape Wildlife Movement Impedance Surface

- Low Impedance Area for general Wildlife Movement across the Landscape (good habitat: prairie, meadow, moderately treed natural area, etc.)
- High Impedance Area for general Wildlife Movement across the Landscape (not good habitat: urban infrastructure, anthropogenic structures, unvegetated areas, open water, etc.)

MAP B and C:

- Low Impedance / Good Habitat Patches isolated to the west side of Matchette Road (Map B) and east side of Malden Road (Map C)

Cumulative Landscape Wildlife Movement Resistivity based on Wildlife Movement Impedance Surface Categories Extending outward from good habitat patches (west of Matchette Road on Map B, east of Malden Road on Map C)

- High accumulated Impedance moving across the landscape from good habitat patches
- Low accumulated Impedance moving across the landscape from good habitat patches

NOTES:
- Road and Municipal border info extracted from Ontario GeoHub, NDMNRF 2021
- Sentinel 2A satellite data extracted from Copernicus Open Access Hub, European Space Agency, Scene Date is June 18, 2020. L1C_T17TLG_A026063_20200618T162536

Datum: NAD83
Projection: UTM Zone 17N

THE CITY OF WINDSOR ONTARIO, CANADA | wood.

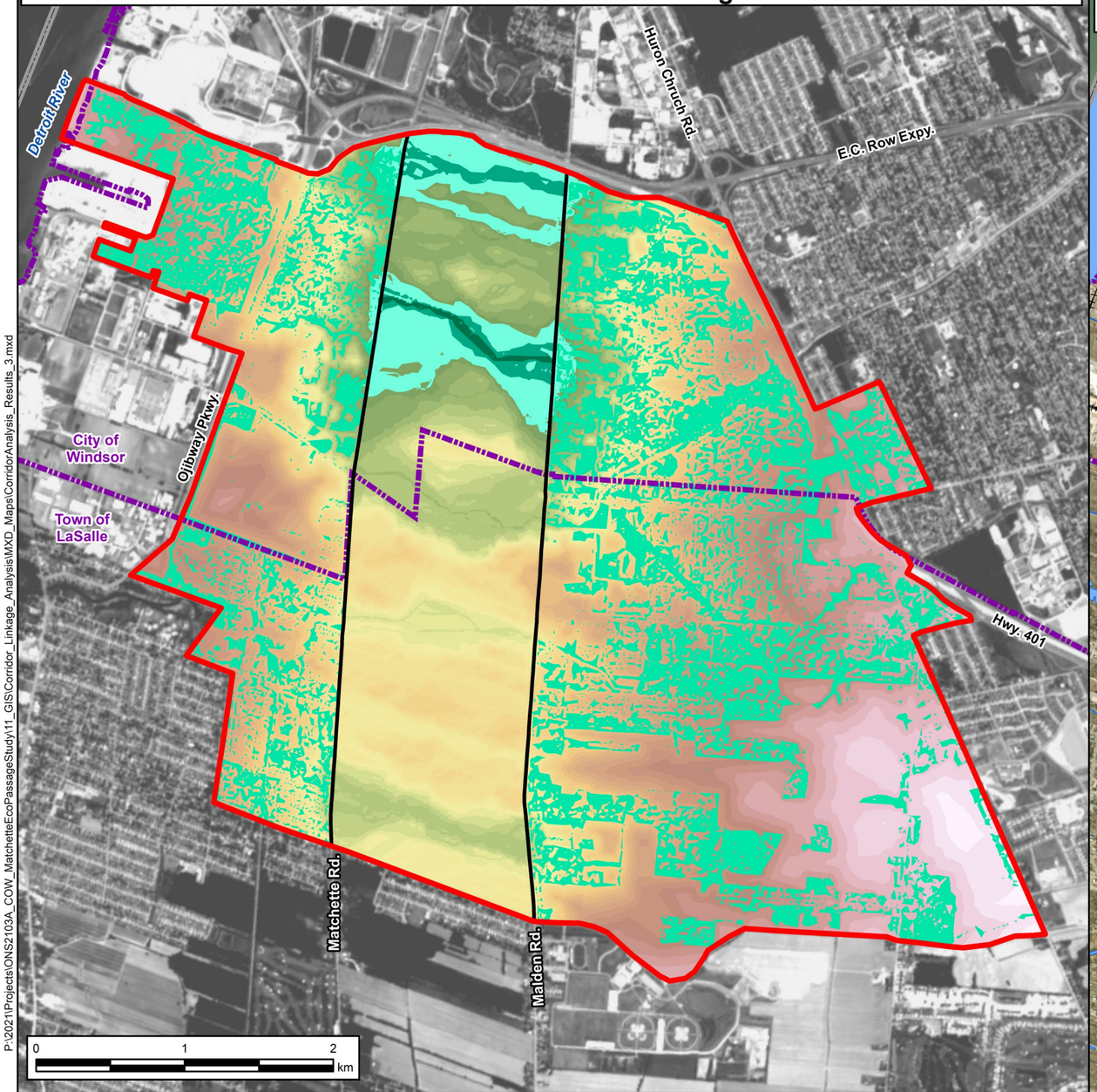
MALDEN AND MATCHETTE ECO PASSAGE STUDY

Resultant Categorized Landscape Wildlife Movement Impedance Surface and Cumulative Landscape Wildlife Movement Resistivity Analysis from Good Habitat West of Matchette Rd. and East of Malden Rd.

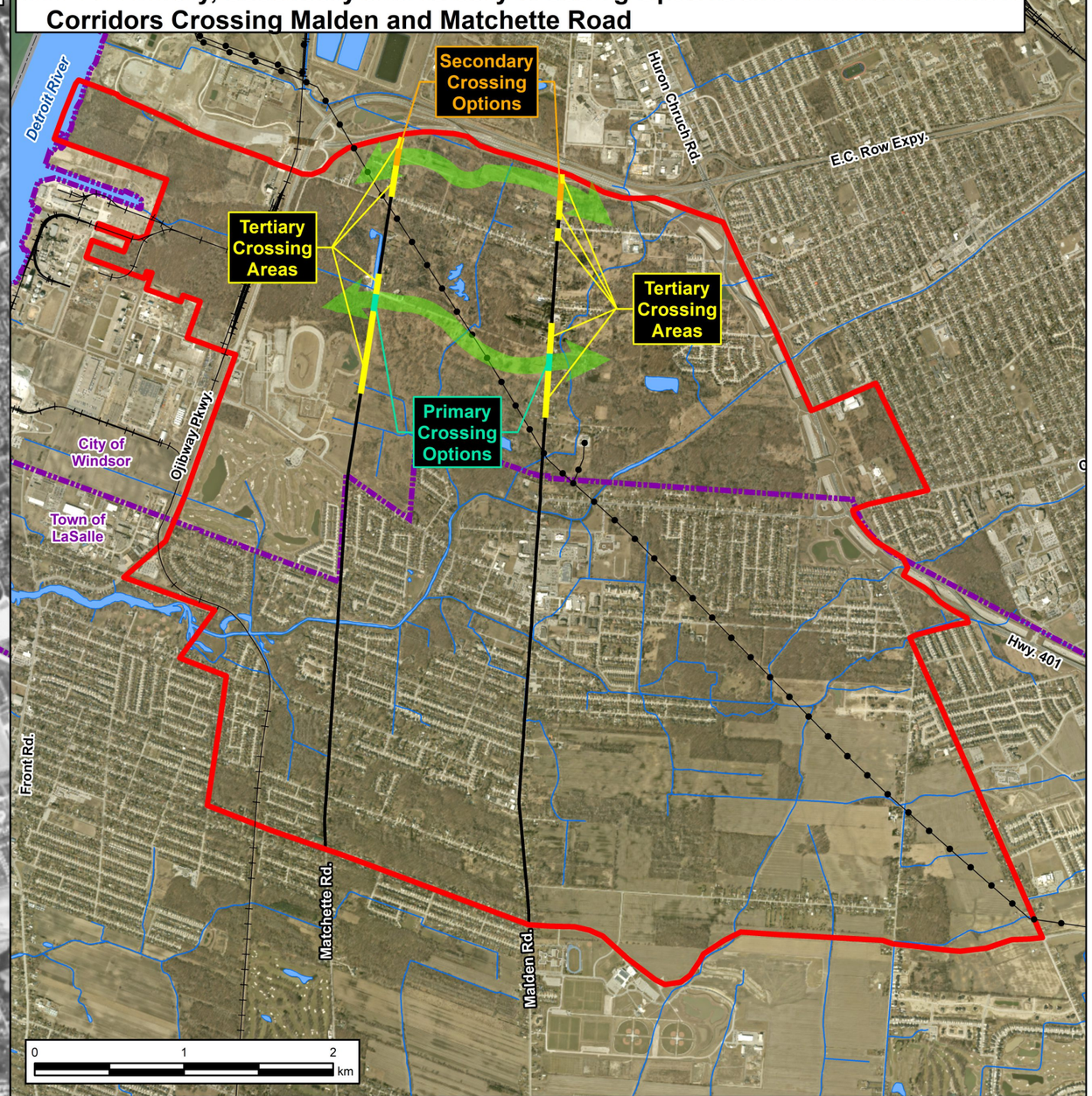
PROJECT N°: ONS2103A | **FIGURE: 5B**

SCALE: MAP A: 1:35,000 MAP B, C: 1:60,000 | DATE: October 2021

MAP A: Identified Wildlife Habitat Corridor Areas Crossing Malden and Matchette Road



MAP B: Primary, Secondary and Tertiary Crossing Options and Wildlife Movement Corridors Crossing Malden and Matchette Road



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LEGEND

- Approximate Study Area
- Malden and Matchette Road Location within Study Area
- Railway
- Hydro Line
- City of Windsor Municipal Border
- National Border

MAP A:

- Low Impedance / Good Habitat Patches isolated to the west side of Matchette Road and east side of Malden Road

Identified corridor Areas Crossing Malden and Matchette Road

- Primary Corridor Area (lowest wildlife movement resistivity from good habitat west of Matchette Rd. and east of Malden Rd.)
- Secondary Corridor Area (lower wildlife movement resistivity from good habitat west of Matchette Rd. and east of Malden Rd.)
- Tertiary Corridor Area (low wildlife movement resistivity from good habitat west of Matchette Rd. and east of Malden Rd.)

Combined Cumulative Landscape Wildlife Movement Resistivity Surface Indicating Overall Low/High Impedance Corridors from Good Habitat Patches West of Matchette Rd. and Good Habitat Patches East of Malden Rd.

- High Combined Cumulative Impedance Area moving across the landscape from good habitat patches
- Low Combined Cumulative Impedance Area moving across the landscape from good habitat patches

MAP B:

- Primary and Secondary Wildlife Movement Corridors crossing Malden Rd. and Matchette Rd.

Primary Crossing Location | Secondary Crossing Location | Tertiary Crossing Area

NOTES:
- Road and Municipal border info extracted from Ontario GeoHub, NDMNRF 2021
- Sentinel 2A satellite data extracted from Copernicus Open Access Hub, European Space Agency, Scene Date is June 18, 2020. L1C_T17TLG_A026063_20200618T162536
- Aerial imagery (Map B) extracted from Essex County interactive map, 2019.

Datum: NAD83
Projection: UTM Zone 17N

THE CITY OF WINDSOR ONTARIO, CANADA | wood.

MALDEN AND MATCHETTE ECO PASSAGE STUDY

Resultant Wildlife Habitat Corridor Areas and Primary, Secondary and Tertiary Crossing Options and Wildlife Movement Corridors Crossing Malden and Matchette Road

PROJECT N°: ONS2103A | **FIGURE: 5C**

SCALE: 1:35,000 | DATE: October 2021

6.0 Matchett Road Selection of Preferred Ecopassage Type and Location

Based on the biodiversity and significance of species in the Study Area, the ecopassage should be a type that accommodates all wildlife species, as well as vegetation. Landscape bridge, wildlife overpass, and viaduct can accommodate all wildlife species, and a large underpass could also generally accommodate the crossing of a variety of species. Landscape bridge and viaduct are larger structures and are typically implemented when the span of the road is over 25 m.

The Primary Crossing Area in Figure 5-C Map B Matchett Road is approximately 10 m shoulder to shoulder. The Primary Crossing Area occurs south of the Ojibway Nature Centre, and the crossing footings could occur on City land on the west side within Ojibway Park and provincially-owned land on the east side in Ojibway Prairie Provincial Nature Reserve (Figure 7-A). Field observations from winter 2021 (Section 3.4 and Figure 3-B) also suggest that the Primary Crossing Area is where many species approach the road naturally.

If current road widths are to remain long-term (i.e., Matchett Road will not be widened to accommodate increased traffic or transportation corridors), a landscape bridge or viaduct may not be practical from an engineering perspective, as the road is too narrow. Additionally, there is no large watercourse or valleyland to support a viaduct or a large underpass. A review of available aerial imagery and the City's open data for municipal drains/channelized watercourses indicates the presence of only roadside ditches within the Primary Crossing Area, which route the stormwater in the road right-of-way to one of the municipal drains. Additionally, there are no known wetlands or 100-year flood lines; however, the area does fall within 30 m of adjacent wetlands (to the east) and would be subject to ERCA regulations. The Primary Crossing Area is also within a significant groundwater recharge area. The available elevation data indicates that the Study Area and the surrounding region is very flat. Lastly, significant municipal and provincial protected natural areas occur on both sides of Matchett Road at the Primary Crossing Area.

A narrower wildlife overpass may also accommodate most species while adapting to the narrow road width. The width of the crossing must be evaluated in the context of the footprint on each side of the road. The wider the ecopassage, the larger the construction footprint. Then again, a larger structure may reduce the requirement for additional mammal dedicated crossings in the Secondary Crossing Area or elsewhere. Typically, crossings dedicated to small and meso-mammals require a crossing that is at least 3 m in width. Those ecopassages which accommodate broader habitat linkages and plant dispersal are 50 m wide.

Traffic numbers (provided by the City) for Matchett Road South of Broadway Street in 2021 are 8886 vehicles on average daily. However, if deer collisions are not an issue, fencing that does not impede deer or appropriate placement and incorporation of escape ramps may allow free movement of deer across Matchett Road. The crossing(s) may not have to accommodate deer if they are not restricted by fencing. Therefore, a narrower wildlife overpass in combination with road mitigation measures such as signage, lighting, and infrastructure adaptations (e.g., curbs, drainage grates, jersey barriers, the width of road median) can be effectively used by small and meso-mammals while also reducing deer collisions. A wildlife overpass which aims to connect several species and species groups must also include adaptations such as microhabitat features (such as stepping pools, brush piles, rock piles, etc.) to be permeable.

Lastly, narrow crossings and crossing structures for smaller animals (including amphibians, turtles, and snakes) should be spaced approximately 300 m apart (Ministry of Transportation, 2016 and Ontario

Ministry of Natural Resources and Forestry, 2016). For example, it is recommended that additional crossings dedicated to smaller animals be considered at the stormwater management pond adjacent to the former racetrack along Matchett Road, in the Tertiary Crossing Area to the south of the Primary Crossing Area. Field observations from winter 2021 (Section 3.4 and Figure 3-B) also suggest that this Tertiary Crossing Area is where many small species approach the road naturally. Note, this would only be feasible pending the long-term land use of the area. If the stormwater management pond adjacent to the racetrack is temporary and to be removed, a crossing would not be reasonable. Wildlife crossings are permanent structures within a changing landscape. The lifespan of wildlife crossing structures is around 70–80 years (U.S. Department of Transportation, 2011). Therefore, the location and design of the crossings need to accommodate the changing dynamics of habitat and climatic conditions and their wildlife populations over time (U.S. Department of Transportation, 2011).

A crossing dedicated to smaller animals may also be appropriate north of the Ojibway Nature Centre to capture migration away from the watercourse and pond within Ojibway Park (north of the residential land use). Likewise, previous local studies found that mortality "hotspots" occurred where roads intersected with the utility corridor (Choquette & Valliant, 2016). The utility corridor is in the same location as the suggested additional crossing north of the Ojibway Nature Centre near the pond; therefore, an additional small animal dedicated crossing is also supported by the local studies in this location. It is also notable, that the Secondary Crossing Area noted on Figure 5-C along Matchett Road contains an ACO Wildlife KT500 Slotted Tunnel (Section 1.3). The ACO tunnel was installed to facilitate movement of SAR snakes under Matchett Road. To date, SAR snakes have approached the tunnel entrance on the east side of Matchett Road but have not yet travelled through the tunnel. Adaptive management could also be considered at this tunnel to improve SAR snake connectivity.

It is recommended that detailed studies that inform road mortality and current movement corridors along Matchett Road between Sprucewood Avenue and the E C. Row Expressway/Rt. Hon. Herb Gray Parkway occur (that considers all species groups) to refine crossing locations and types. It is ideal to use both theoretical and empirical data to determine the site-specific location of wildlife crossings, when possible, as field-based assessments can help verify and refine where wildlife crossings are required. Field-based assessments are typically conducted during an Environmental Assessment (EA) at the project preliminary design stage (Ministry of Transportation, 2016). Additional preconstruction surveys and integration of that data (i.e., future land use, engineering constraints) can inform crossing placement, fencing, and escape ramp locations and feasibility.

7.0 Malden Road Selection of Preferred Ecopassage Type and Location

Based on the biodiversity and significance of species in the Study Area, the ecopassage should be a type that accommodates all wildlife species, as well as vegetation. Landscape bridge, wildlife overpass, and viaduct can accommodate all wildlife species and a large underpass could also largely accommodate crossing of a variety of species. Landscape bridge and viaduct are larger structures and are typically implemented when the span of the road is over 25 m. The Primary Crossing Area in Figure 5-C Map B Malden Road is approximately 10 m shoulder to shoulder. The Primary Crossing Area occurs south of the Ojibway Prairie Provincial Nature Reserve parking lot and trailhead (across from Elgin Street). The crossing footings could occur within Titcombe Park on the west side (which is not City owned) and would be in residential lots on the east side (Figure 7-A). Field observations from winter 2021 (Section 3.4 and Figure 3-B) suggest that the Primary Crossing Area is where species approach the road naturally.

Given the residential constraints along Malden Road, it is thought that the narrow road width and reduced road footprint would remain long-term. Similar to Matchett Road, a viaduct and large underpass may not be practical from an engineering perspective as there is no large watercourse or valleyland. Unlike Matchett Road, easements and land acquisition with individual residential owners must be considered when planning for a crossing and may reduce the potential width and characteristics of a crossing. The land use along Malden Road will also require strategic planning of fencing and escape ramps.

A review of available aerial imagery and the City's open data for municipal drains/channelized watercourses indicates the presence of roadside ditches within the Primary Crossing Area, which route the stormwater in the road right-of-way to one of the municipal drains. Additionally, there are no known wetlands, 100-year flood lines, municipal or provincially significant natural areas, or significant groundwater recharge areas at the Primary Crossing Area on Malden Road. However, the area does fall within 30 m of adjacent wetlands and would be subject to ERCA regulations. The available elevation data indicates that the Study Area and the surrounding region is very flat.

In terms of large (over 3 m in width) and singular crossings, a wildlife overpass or landscape bridge is more feasible than a viaduct or large underpass at the Primary Crossing Area on Malden Road. The width of the crossing must be evaluated in the context of the footprint on each side of the road. The wider the ecopassage, the larger the construction footprint and more land acquisition might be necessary. Similar to potential crossings along Matchett Road, ecopassages that function to accommodate habitat linkages, large animals, and plant dispersal are very wide. However, if large animal (deer) collisions are not an issue and/or mitigation measures to facilitate their safe passage across the roadway are also feasible to implement, then a smaller wildlife crossing dedicated to small and meso-mammals can be considered (these crossings are at least 3 m in width). Traffic numbers (provided by the City) for Malden Road South of Spring Garden Road in 2017 was 6363 vehicles on average daily.

Depending on the width of the crossing at the Primary Crossing Area, additional crossings may or may not be recommended. A larger structure at the Primary Crossing Area may reduce the requirement for additional mammal-dedicated crossings in the Secondary Location or elsewhere. According to the local study by Choquette & Valliant (2016), a connection between Tallgrass Prairie Heritage Park and SGNA on the north side of the Ojibway Prairie Provincial Nature Reserve parking lot and trailhead was recommended to mitigate potential mortality "hotspots" where Malden Road intersects the utility corridor. The Connectivity Analysis Primary Crossing Area and the local studies concur that this general area around the parking lot and trailhead is essential when considering ecopassage mitigation. Field observations from winter 2021 (Section 3.4 and Figure 3-B) suggest that deer cross in higher numbers at the utility corridor, approaching the road naturally; however, deer do not seem to be confined to any specific location. A wildlife overpass which aims to connect several species and species groups must also include adaptations such as microhabitat features to be permeable.

Narrow crossing structures for smaller animals, including amphibians, turtles, and snakes, should be spaced approximately 300 m apart (Ministry of Transportation, 2016 and Ontario Ministry of Natural Resources and Forestry, 2016). However, due to ownership constraints and the absence of municipally owned lands along Malden Road, additional crossings may not be feasible. Approximately 500 m south of the Primary Crossing Area, a watercourse crossing/municipal drain called Basin Drain occurs. Basin Drain crosses under Malden Road at the same location as the utility corridor. Existing culverts can be modified/retrofitted and used as a wildlife crossing. Moreover, land ownership might be less restrictive around a municipal drain. This culvert could be a suitable location for an additional crossing. Field observations from winter 2021 (Section 3.4 and Figure 3-B) note the occurrence of Wild Turkey at Basin Drain.

Similar to the recommendations for placement location along Matchett Road, it is also recommended that detailed studies that inform road mortality and current movement corridors along Malden Road between the bridge south of the Todd Lane roundabout and the E C. Row Expressway/Rt. Hon. Herb Gray Parkway and side streets occur. Combining the field-based assessments with results of the connectivity analysis or movement models will better support the understanding of wildlife movement and inform crossing placement, fencing, and escape ramp locations and feasibility. Implementing effective fencing along Malden Road to ensure the use of the crossing by wildlife will be constrained by property boundaries. Fencing will likely have to follow rear lot lines and watercourses. The City may have to consider the retrofit of existing culverts as additional wildlife crossings. An in-depth look at mortality on Malden Road and the ways to mitigate it should be conducted to refine crossing locations and types.

328000 328500 329000 329500 330000 330500 331000 331500

4682000 4681500 4681000 4680500

Heely Drain
Broadway Drain
McKee Drain
E C ROW EXPRESSWAY
Malden Park
Aboriginal Park
Ojibway Park Drain
Susan Drain
Black Oak Heritage Park
OJIBWAY PARKWAY
MATCHETTE ROAD
ARMANDA STREET
Titcombe Drain
Youngstown Drain
Ojibway Park
Tallgrass Prairie Heritage Park
MALDEN ROAD
HIGHWAY 3
Bellewood Park
Marentette Mangin Drain
Ojibway Parkway Trail Park
Titcombe Road Drain
Basin Drain
HIGHWAY 401
Spring Garden Natural Area Park
Fazio Park
Grand Marais Drain
Reaume Drain
SPRUCEWOOD AVENUE

Tertiary Crossing Location
Secondary Crossing Location
Tertiary Crossing Location
Tertiary Crossing Location
Secondary Crossing Location
Tertiary Crossing Location
Tertiary Crossing Location
Primary Crossing Location
Tertiary Crossing Location
Tertiary Crossing Location
Primary Crossing Location
Tertiary Crossing Location

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LEGEND

- Properties Owned by The City of Windsor
- Name — Municipal Park
- Natural Heritage Feature (ANSI, Provincially Significant Wetland, Environmentally Significant Area and Provincial Park)
- Watercourse / Drain
- Waterbody
- Railway
- Hydro Line
- Primary Crossing Location
- Secondary Crossing Location
- Tertiary Crossing Location
- Primary and Secondary Wildlife Movement Corridors crossing Malden Rd. and Matchette Rd.

0 0.25 0.5 1 1.5 2 Kilometres

NOTES:
- Aerial imagery extracted from Essex County interactive map, 2019.

Datum: NAD83
Projection: UTM Zone 17N

N W E S

THE CITY OF WINDSOR ONTARIO, CANADA wood.

MALDEN AND MATCHETTE ECO PASSAGE STUDY

Potential Wildlife Crossings and Land Ownership

PROJECT N°: ONS2103A | **FIGURE: 7-A**

SCALE: 1:10,000 | DATE: November 2021

8.0 General Limitations and Preliminary Recommendations

Based on the analysis, there are several potentially suitable crossing locations to be considered. Based on preliminary objectives an overpass structure is recommended at the Primary Crossing Areas. Additionally, considerations to include a combination of secondary crossings (small to medium mammal underpass, modified culvert, and herptile tunnel) along Matchett Road and Malden Road should be given. Below are several factors to consider when initiating the next steps to determine the feasibility of a wildlife crossing, including:

- Long-term maintenance agreements;
- Cost and Funding for implementation, long-term maintenance, and monitoring;
- Land ownership and long-term land use;
- Human interactions/disturbance; and
- Environmental constraints.

Crossing structures and fencing are effective measures in reducing WVCs and providing connections between fragmented habitats (Ministry of Transportation, 2016). When selecting wildlife crossing types where a roadway bisects habitat of high conservation value, mixed-use crossings should not be used (U.S. Department of Transportation, 2011 and Ministry of Transportation, 2016). Preventing human use of large overpasses will be difficult, especially if overpasses are near nature centers and trailheads.

Engineering, geotechnical, and hydrological studies have not been completed, and these elements may refine or change ultimate crossing locations. Additionally, land ownership limitations will be a limiting factor in crossing and fencing placement, especially along Malden Road. Wildlife fencing is the most effective and preferred method to guide wildlife to the structure and prevent intrusions onto the roadway (Ontario Road Ecology Group, Toronto Zoo, 2010; U.S. Department of Transportation, 2011; and Ministry of Transportation, 2016). In general, both sides of the roadway must be fenced in equal lengths (symmetric) (U.S. Department of Transportation, 2011), and fencing must be designed for target species (U.S. Department of Transportation, 2011 and Ministry of Transportation, 2016). Fencing is a key part of a mitigation plan and needs to consider what happens for wildlife that becomes trapped on the road. Escape ramps, gates, or doors must be used to allow for one-way movement off the road (U.S. Department of Transportation, 2011 and Ministry of Transportation, 2016).

One of the most important factors in site selection for wildlife crossings is adjacent land use compatibility (current and future). When the property for the wildlife crossing and areas for elements such as fencing is not owned by the City, an agreement and understanding on long-term responsibilities and financial investments must be understood by all land and utility owners. Additionally, an adjacent landowner may have a long-term plan for their property that would negate the crossing, such as specific management of utility corridors that may impact wildlife concentrated at the crossings. Therefore, the planning of a wildlife crossing must consider adjacent owners and long-term land use.

Likewise, coordination between internal departments (e.g., operations, engineering, parks) must be forecasted to understand how to proactively integrate concerns around growing infrastructure and changing landscapes (U.S. Department of Transportation, 2011). Wildlife crossings can only be as effective as the management strategies developed and the funding and ability to implement them. For wildlife

corridors to fulfil their function as habitat connectors, impacts from development and human disturbance must be mitigated. Long-term planning and landscape connectivity must be understood to ensure that the local-scale connection is effective.

It is recommended the City collect road mortality observations and additional field sampling to establish a baseline study and to refine the location of the ecopassages and other mitigation measures (e.g., additional crossings, fencing). A baseline study would ideally be completed for multiple years to gather data that accounts for population cycles; however, funding may be limited, and baseline studies may be completed as part of an EA.

After the final determinations on type and location, configuration, and maintenance are made, the cost analysis and implementation plan can begin (the third, fourth, and fifth steps of the road map Figure 2-A). The subsequent steps help integrate the project into the larger planning, construction, implementation, and long-term monitoring processes. Post-construction monitoring commitments must also be considered to inform effectiveness and adaptive management.

9.0 Closure

Available data from local naturalists and researchers, agencies, and conservation authorities have been reviewed and integrated where appropriate for the scope of this report. Occurrence records were provided by Choquette (Choquette J. D., 2012; Choquette & Valliant, 2016) along with records collected as part of the Herb Gray Parkway project (Wood 2011- 2020), data from Ojibway Nature Centre, Natural Heritage Information Centre, satellite imagery, and field reconnaissance. This report identifies the preferred crossing types as wildlife overpasses and Primary Crossing Areas on both Matchett Road and Malden Road. Additional recommendations and considerations are provided to aid in a wholesome review of potential planning factors.

10.0 References

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Appendix A

Secondary Sources

Secondary Sources queried are listed below and visually presented in the attached Figure.

- Essex Region Conservation Authority Mapping;
    - Natural Areas (the group of layers, specifically PSW, ANSI, ESA, Existing natural feature, restoration opportunities)
    - ERCA regulation (name from the group of layers, specifically the 1:100 yr flood line and limit of regulated area)
    - Drainage (all in the group of layers, municipal drains, constructed drains, and the sub watershed boundaries)
    - Source water protection (group of layers, specifically surface water intake and significant groundwater recharge area)
- Species at Risk in Ontario List (MNRF 2018);
- Species at Risk Public Registry database (ECCC 2018);
- MNRF Natural Heritage Information Centre (NHIC) database square (1 km x 1 km) encompassing the Project (17LG2676, 17LG2677,17LG2678, 17LG2679, 17LG2680, 17LG2681, 17LG2682, 17LG2776, 17LG2777, 17LG2778, 17LG2779, 17LG2780, 17LG2781, 17LG2782, 17LG2876, 17LG2877, 17LG2878, 17LG2879, 17LG2880, 17LG2881, 17LG2882, 17LG2976, 17LG2977, 17LG2978, 17LG2979, 17LG2980, 17LG2981, 17LG2982, 17LG3076, 17LG3077, 17LG3078, 17LG3079, 17LG3080, 17LG3081, 17LG3082, 17LG3176, 17LG3177, 17LG3178, 17LG3179, 17LG3180, 17LG3181, 17LG3182, 17LG3276, 17LG3277, 17LG3278, 17LG3279, 17LG3280, 17LG3281, 17LG3282) (MNRF 2021);
- Ontario Reptile and Amphibian Atlas (ORAA; square 17LG28, 17LG38, 17LG27, 17LG37);
- The Atlas (2001 to 2005) of the Breeding Birds of Ontario (ABBO) 10 x 10 km survey square 17NJ31 (Cadman et al. 2007);
- Ontario Butterfly Atlas by the Toronto Entomologists' Association (OBA) 10 x 10 km survey square 17NJ31;
- iNaturalist (Ojibway Prairie Complex, Windsor, ON, CA Point of Interest);
- Topographic data extracted from Land Information Ontario (MNRF 2018); and,
- Relevant technical reports provided by the City and others.

326000 328000 330000 332000 334000

4684000 4682000 4680000 4678000 4676000 4674000

DETROIT (U.S.A.)
WINDSOR (CANADA)
Detroit River

COLLEGE AVENUE
SANDWICH STREET
HURON CHURCH ROAD
PRINCE ROAD
CAMPBELL AVENUE
JANETTE AVENUE
TECUMSEH ROAD EAST
TOTTEN STREET
SOUTH CAMERON BOULEVARD
DOUGALL AVENUE
E C ROW EXPRESSWAY
Turkey Creek
ACADEMY DRIVE
GRAND MARAIS ROAD WEST
MATCHETTE ROAD
HIGHWAY 401
TODD LANE
CABANA ROAD WEST
MOUNT ROYAL DRIVE
CITY OF WINDSOR
TOWN OF LASALLE
COUSINEAU ROAD
MICHIGAN AVENUE
BOUFFARD ROAD
CONCESSION ROAD 6
MALDEN ROAD
FRONT ROAD
VICTORY STREET
HURON CHURCH LINE ROAD
DISPUTED ROAD
Canard River

17LG2682 17LG2782 17LG2882 17LG2982 17LG3082
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LEGEND

- Approximate Study Area
- Watercourse
- Waterbody
- Railway
- Hydro Line
- Municipal Border (Lower and Single Tier)
- National Border
- NHIC Squares (Labelled with ID)

Department of Fisheries and Oceans Species at Risk

- Critical Habitat
- Extirpated, Endangered, or Threatened
- Special Concern

NOTES:
- Aerial imagery extracted from Essex County interactive map, 2019.

0 0.25 0.5 1 1.5 2 Kilometres

Datum: NAD83
Projection: UTM Zone 17N

N W E S

THE CITY OF WINDSOR ONTARIO, CANADA wood.

MALDEN AND MATACHETTE ECO PASSAGE STUDY

Secondary SAR Sources

PROJECT N°: ONS2103A	**FIGURE: Appendix A**
SCALE: 1:32,000	DATE: October 2021

Appendix B

Species Lists

Legend

*=Introduced Species
S rank (provincial)= NatureServe Subnational Conservation Status Definitions. The term "subnational" refers to state or province-level jurisdictions (e.g., California, Ontario).
G rank (global)= NatureServe Global Conservation Status Definitions

RANK	DEFINITION
GX **SX**	**Presumed Extirpated**—Species or ecosystem is believed to be extirpated from the jurisdiction (i.e., nation, or state/province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to "Regionally Extinct" in IUCN Red List terminology]
GH **SH**	**Possibly Extirpated** – Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
G1 **S1**	**Critically Imperiled** At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
G2 **S2**	**Imperiled** — At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
G3 **S3**	**Vulnerable** — At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
G4 **S4**	**Apparently Secure** — At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
G5 **S5**	**Secure** — At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
G#G# **S#S#**	**Range Rank —** A numeric range rank (e.g., G2G3, G1G3) is used to indicate uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
GU **SU**	**Unrankable —** Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty.
GNR **SNR**	**Unranked —** Global rank not yet assessed.
GNA **SNA**	**Not Applicable —** A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. For species, typically the species is a

	hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g, many ruderal vegetation types), agricultural (e.g. pasture, orchard) or developed (e.g. lawn, garden, golf course).
?	**Inexact Numeric Rank -** Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.
Q	**Questionable taxonomy that may reduce conservation priority -** Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level.
C	**Captive or Cultivated Only -** Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The "C" modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to "Extinct in the Wild (EW) in IUCN's Red List terminology (IUCN 2001).

COSEWIC= The Committee on the Status of Endangered Wildlife in Canada

ESA= Endangered Species Act, 2007, S.O. 2007, c. 6

SARA Schedule 1= Species at Risk Act (SC 2002, c. 29)

EXT	**Extinct** - A species shall be classified as an extinct species if it no longer lives anywhere in the world.
EXP	**Extirpated** - A species shall be classified as an extirpated species if it lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.
END	**Endangered** - A species shall be classified as an endangered species if it lives in the wild in Ontario but is facing imminent extinction or extirpation.
THR	**Threatened** - A species shall be classified as a threatened species if it lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening to lead to its extinction or extirpation.
SC	**Special Concern** - A species shall be classified as a special concern species if it lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered because of a combination of biological characteristics and identified threats.

Coefficient of Wetness = indicates the plant's soil moisture tolerance
Coefficient of Conservatism = numeric values assigned to plant species to indicate their sensitivity to anthropogenic disturbance

Vegetation Table for Matchette and Malden (ONS2103A)

Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	ESA	SARA Schedule 1	Coefficient of Conservatism	Coefficient of Wetness	Essex County Status from Oldham Carolinian List	SOFIA Tallgrass Indicator Species	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28	Choquette& Valliant 2016
Juniperus communis	Common Juniper	S5	G5			4	3	Native, Rare				x	
Juniperus virginiana	Eastern Red Cedar	S5	G5			4	3	Native, Common		x			
* *Pinus nigra*	Austrian Pine	SNA	GNR				5			x			
Pinus strobus	Eastern White Pine	S5	G5			4	3	Native, Rare		x			
* *Pinus sylvestris*	Scots Pine	SNA	GNR				3	Introduced, Rare		x		x	
* *Abutilon theophrasti*	Velvetleaf	SNA	GNR				3	Introduced, Common		x			
Acalypha rhomboidea	Common Three-seeded	S5	G5			0	3	Native, Common		x			
Acer negundo	Manitoba Maple	S5	G5			0	0	Native, Common		x		x	
Acer rubrum	Red Maple	S5	G5			4	0	Native, Common		x		x	
Acer saccharinum	Silver Maple	S5	G5			5	-3	Native, Common		x		x	
Acer x freemanii	Freeman's Maple (Acer rubrum X Acer	SNA	GNA			6	-5	Hybrid		x		x	
* *Achillea millefolium*	Common Yarrow	SNA	G5				3			x		x	
Actaea racemosa	Black Snakeroot	S2	G4			10	3					x	
Actaea pachypoda	White Baneberry	S5	G5			6	5	Native, Common		x			
Agalinis purpurea var. purpurea	Large-flowered Purple False Foxglove	S1	GNRTNR			10	-3	Native, Rare	Yes		NHIC		
Agalinis skinneriana	Skinner's False Foxglove	S1	G3G4	END	END	10	3	Native, Rare	Yes		NHIC		
* *Aegopodium podagraria*	Goutweed	SNA	GNR				0			x			
Agalinis purpurea	Purple False Foxglove	S4S5	GNR			8	-3			x	NHIC	X	
Agalinis tenuifolia	Slender-leaved False	S4S5	G5			7	-3	Native, Rare		x		x	
Ageratina altissima	White Snakeroot	S5	G5			5	3	Native, Common		x			
Agrimonia pubescens	Soft Agrimony	S4	G5			7	5	Native, Common				x	
Agrimonia gryposepala	Hooked Agrimony	S5	G5			2	3	Native, Common		x		x	
Agrimonia parviflora	Swamp Agrimony	S4	G5			4	-3	Native, Common	Yes	x		x	
Agrimonia striata	Woodland Agrimony	S4	G5			3	3			x			
* *Ajuga reptans*	Creeping Bugleweed	SNA	GNR				5	Introduced, Rare				x	
* *Ailanthus altissima*	Tree-of-heaven	SNA	GNR				5	Introduced, Rare		x		x	
* *Alliaria petiolata*	Garlic Mustard	SNA	GNR				0	Introduced, Common		x		x	
Ammannia robusta	Scarlet Ammannia	S1	G5	END	END	9	-5	Native, Rare			NHIC		
Ambrosia artemisiifolia	Common Ragweed	S5	G5			0	3	Native, Common		x		x	
Ambrosia trifida	Great Ragweed	S5	G5			0	0	Native, Common		x		x	
Amelanchier arborea	Downy Serviceberry	S5	G5			5	3	Native, Uncommon		x			
Amphicarpaea bracteata	American Hog-peanut	S5	G5			4	0	Native, Common	Yes	x		x	
Anemone quinquefolia	Wood Anemone	S5	G5			7	0	Native, Common				x	
Angelica atropurpurea	Purple-stemmed Angelica	S5	G5			6	-5	Native, Rare				x	
Anemonastrum canadense	Canada Anemone	S5	G5			3	-3	Native, Common	Yes	x		x	
Anemone cylindrica	Long-headed Anemone	S4	G5			7	5	Native, Rare	Yes	x			
Anemone virginiana	Tall Anemone	S5	G5			4	3	Native, Common		x		x	
Antennaria neglecta	Field Pussytoes	S5	G5			3	5	Native, Rare				x	
Apios americana	American Groundnut	S5	G5			6	-3	Native, Common	Yes	x		x	
Apocynum	Spreading Dogbane	S5	G5			3	5	Native, Uncommon		x		x	

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	Apocynum cannabinum	Hemp Dogbane	S5	GNR		3	0			x		x
	Aquilegia canadensis	Red Columbine	S5	G5		5	3	Native, Common		x		
*	*Aquilegia vulgaris*	European Columbine	SNA	GNR			3	Introduced, Rare		x		
	Aralia nudicaulis	Wild Sarsaparilla	S5	G5		4	3	Native, Common		x		
*	*Arctium lappa*	Great Burdock	SNA	GNR			3	Introduced, Rare		x		
*	*Arctium minus*	Common Burdock	SNA	GNR			3	Introduced, Common		x		x
	Aronia x prunifolia	(Aronia arbutifolia X Aronia melanocarpa)	SNA	GNA			-3					x
*	*Armoracia rusticana*	Horseradish	SNA	GNR			0	Introduced, Rare		x		
	Asclepias exaltata	Poke Milkweed	S4	G5		8	5	Native, Rare				x
	Asclepias hirtella	Tall Green Milkweed	S1	G5		10	5	Native, Rare	Yes		NHIC	
	Asclepias purpurascens	Purple Milkweed	S1	G5?		10	3	Native, Rare	Yes		NHIC	
	Asclepias sullivantii	Prairie Milkweed	S2S3	G5		8	5	Native, Rare	Yes		NHIC	
	Asarum canadense	Canada Wild-ginger	S5	G5		6	5	Native, Uncommon		x		
	Asclepias viridiflora	Green Cornet Milkweed	S2	G5		10	5	Native, Rare	Yes		NHIC	
	Asimina triloba	Pawpaw	S3	G5		10	0	Native, Rare			NHIC	
	Asclepias incarnata	Swamp Milkweed	S5	G5		6	-5	Native, Common	Yes	x		x
	Asclepias syriaca	Common Milkweed	S5	G5		0	5	Native, Common		x		x
	Asclepias tuberosa	Butterfly Milkweed	S4	G5		8	5	Native, Uncommon	Yes	x		
	Asclepias verticillata	Whorled Milkweed	S4	G5		6	5	Native, Rare	Yes	x		
	Aureolaria flava	Smooth Yellow False	S2?	G5		10	5	Native, Rare	Yes		NHIC	
	Aureolaria pedicularia	Fern-leaved Yellow False Foxglove	S2?	G5		10	5	Native, Rare	Yes		NHIC	x
	Aureolaria virginica	Downy Yellow False	S1	G5		10	5					x
S	*Baptisia australis*	Blue Wild Indigo	SNA	G5			3					x
	Baptisia tinctoria	Yellow Wild Indigo	S1S2	G5		10	5	Native, Rare	Yes		NHIC	
*	*Berberis vulgaris*	Common Barberry	SNA	GNR			3	Unconfirmed Report				x
*	*Barbarea vulgaris*	Bitter Wintercress	SNA	GNR			0	Introduced, Common		x		x
	Betula papyrifera	Paper Birch	S5	G5		2	3	Introduced, Rare				x
	Bidens tripartita	Three-parted Beggarticks	S5?	G5		5	-3	Native, Common				x
*	*Berberis thunbergii*	Japanese Barberry	SNA	GNR			3	Introduced, Uncommon		x		x
*	*Berteroa incana*	Hoary Alyssum	SNA	GNR			5	Introduced, Uncommon		x		
	Bidens frondosa	Devil's Beggarticks	S5	G5		3	-3	Native, Common		x		x
	Boehmeria cylindrica	Small-spike False Nettle	S5	G5		4	-5	Native, Common		x		x
	Calystegia sepium	Hedge False Bindweed	S5	G5		2	0	ve, status unknown or not spec		x		
*	*Campanula rapunculoides*	Creeping Bellflower	SNA	GNR			5	Introduced, Uncommon		x		
	Campsis radicans	Trumpet Creeper	S2?	G5		3	0	Native, Rare		x		
*	*Capsella bursa-pastoris*	Common Shepherd's Purse	SNA	GNR			3	Introduced, Common		x		
	Cardamine bulbosa	Bulbous Bittercress	S4	G5		8	-5	Native, Common		x		
	Cardamine douglassii	Limestone Bittercress	S4	G5		7	-3	Native, Common		x		
*	*Cardamine hirsuta*	Hairy Bittercress	SNA	GNR			3	Introduced, Rare		x		
	Carya laciniosa	Shellbark Hickory	S3	G5		9	-3	Native, Common	Yes		NHIC	x
	Carya cordiformis	Bitternut Hickory	S5	G5		6	0	Native, Common		x		
	Carya glabra	Pignut Hickory	S3	G5		9	3	Native, Rare	Yes	x	NHIC	x
	Carya ovata	Shagbark Hickory	S5	G5		6	3	Native, Common		x		x
	Castanea dentata	American Chestnut	S1S2	G4	END	END 8	5	Native, Uncommon		x	NHIC	
*	*Catalpa speciosa*	Northern Catalpa	SNA	G4?			3	Unconfirmed Report		x		

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Ceanothus americanus	New Jersey Tea	S4	G5			7	5	Native, Rare	Yes	x			
* *Celastrus orbiculatus*	Oriental Bittersweet	SNA	GNR				5	Introduced, Rare		x			
Celastrus scandens	Climbing Bittersweet	S5	G5			3	3	Native, Common		x			
Celtis occidentalis	Common Hackberry	S4	G5			8	0	Native, Common		x			
* *Centaurium erythraea*	European Centaury	SNA	GNR				0					x	
* *Centaurea stoebe*	Spotted Knapweed	SNA	GNR				5	Introduced, Uncommon		x			
* *Centaurium pulchellum*	Branching Centaury	SNA	GNR				0	Introduced, Uncommon		x			
Cephalanthus occidentalis	Eastern Buttonbush	S5	G5			7	-5	Native, Common		x		x	
Ceratophyllum demersum	Common Hornwort	S5	G5			4	-5	Native, Rare		x			
Cercis canadensis	Eastern Redbud	SX	G5			8	3	Native, Historical		x			
Chimaphila maculata	Spotted Wintergreen	S2	G5	THR	END	10	5	Native, Rare			NHIC		
Chelone glabra	White Turtlehead	S5	G5			7	-5	Native, Common		x			
* *Cichorium intybus*	Wild Chicory	SNA	GNR				5	Introduced, Common		x		x	
Cicuta maculata	Spotted Water-hemlock	S5	G5			6	-5			x		x	
Circaea canadensis	Broad-leaved Enchanter's Nightshade	S5	G5			2	3	Native, Common		x		x	
* *Cirsium arvense*	Canada Thistle	SNA	G5				3	Introduced, Common		x		x	
Cirsium discolor	Field Thistle	S3	G5			9	5	Native, Uncommon	Yes	x	NHIC	x	
Cirsium muticum	Swamp Thistle	S5	G5			8	-5	Native, Rare		x			
* *Cirsium vulgare*	Bull Thistle	SNA	GNR				3	Introduced, Common		x		x	
Claytonia virginica	Eastern Spring Beauty	S5	G5			5	3	Native, Common		x			
* *Clematis terniflora*	Sweet Autumn Clematis	SNA	GNR				5			x			
Clematis virginiana	Virginia Clematis	S5	G5			3	0	Native, Rare		x			
Collinsonia canadensis	Canada Horsebalm	S4	G5			8	0	Native, Common		x		x	
Comandra umbellata	Bastard Toadflax	S5	G5			6	3	Native, Common	Yes	x		x	
* *Convolvulus arvensis*	Field Bindweed	SNA	GNR				5	Introduced, Common		x		x	
Cornus florida	Eastern Flowering	S2?	G5	END	END	7	3	Native, Common			NHIC		
Coreopsis lanceolata	Lance-leaved Tickseed	S4	G5			5	3	Unconfirmed Report		x			
Coreopsis tripteris	Tall Tickseed	S1S2	G5			9	0	Native, Uncommon	Yes	x	NHIC	x	
Cornus sericea	Red-osier Dogwood	S5	G5			2	-3	Native, Common				x	
Cornus drummondii	Rough-leaved Dogwood	S4	G5			4	0	Native, Common		x		x	
Cornus obliqua	Silky Dogwood	S5	G5			2	-3	Native, Common		x	x	x	
Cornus racemosa	Grey Dogwood	S5	G5			2	0	Native, Common		x		x	
Corylus americana	American Hazelnut	S5	G5			5	3	Native, Common		x		x	
Corylus cornuta	Beaked Hazelnut	S5	G5			5	3			x		x	
Crataegus mollis	Downy Hawthorn	S4S5	G5			4	0					x	
Crataegus crus-galli	Cockspur Hawthorn	S4	G5			4	0	Native, Common		x		x	
Cryptotaenia canadensis	Canada Honewort	S5	G5			5	0	Native, Common		x			
Cuscuta campestris	Field Dodder	S2	G5			5	0	Native, Rare			NHIC		
Cuscuta cephalanthi	Buttonbush Dodder	S2	G5			8	5	Native, Rare			NHIC		
Cuscuta coryli	Hazel Dodder	S1	G5?			9	5	Native, Rare	Yes		NHIC		
* *Cynoglossum officinale*	Common Hound's-tongue	SNA	GNR				5	Introduced, Rare				x	
* *Datura stramonium*	Jimsonweed	SNA	GU				5	Introduced, Rare		x			
* *Daucus carota*	Wild Carrot	SNA	GNR				5	Introduced, Common		x		x	
Desmodium canadense	Canada Tick-trefoil	S4	G5			5	0	Native, Common	Yes	x		x	
Desmodium perplexum	Perplexed Tick-trefoil	S4	G5			6	5	Native, Uncommon	Yes	x			
* *Dianthus armeria*	Deptford Pink	SNA	GNR				5	Introduced, Common		x			

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*	*Dipsacus fullonum*	Common Teasel	SNA	GNR			3	Introduced, Common		x		x
	Dirca palustris	Eastern Leatherwood	S4	G4		7	0	Native, Rare		x		
	Doellingeria umbellata	Flat-top White Aster	S5	G5		6	-3			x		x
*	*Elaeagnus angustifolia*	Russian Olive	SNA	GNR			3	Introduced, Rare		x		x
*	*Elaeagnus umbellata*	Autumn Olive	SNA	GNR			3	Introduced, Rare		x		x
	Epilobium ciliatum	Northern Willowherb	S5	G5		3	-3					x
*	*Eranthis hyemalis*	Winter Aconite	SNA	GNR			5			x		
	Erechtites hieraciifolius	Eastern Burnweed	S5	G5		2	3	Native, Common		x		
	Erigeron annuus	Annual Fleabane	S5	G5		0	3	Native, Common		x		x
	Erigeron canadensis	Canada Horseweed	S5	G5		0	3	Native, Common	Yes	x		x
	Erigeron philadelphicus	Philadelphia Fleabane	S5	G5		1	-3	Native, Common		x		x
	Erigeron strigosus	Rough Fleabane	S5	G5		4	3	Native, Common	Yes	x		
	Eupatorium altissimum	Tall Boneset	S1	G5		3	5	Native, Rare			NHIC	
*	*Euonymus alatus*	Winged Euonymus	SNA	GNR			5	Introduced, Rare		x		
*	*Euonymus europaeus*	European Euonymus	SNA	GNR			5	Introduced, Rare		x		
*	*Euonymus fortunei*	Climbing Euonymus	SNA	GNR			5	Introduced, Rare		x		
	Eupatorium perfoliatum	Common Boneset	S5	G5		2	-3	Native, Common		x		x
*	*Eupatorium serotinum*	Late Boneset	SNA	G5			0	Introduced, Rare		x		
	Euphorbia corollata	Flowering Spurge	S4	G5		7	5	Native, Rare	Yes	x		x
*	*Euphorbia cyparissias*	Cypress Spurge	SNA	G5			5	Introduced, Rare		x		
*	*Euphorbia maculata*	Spotted Spurge	SNA	G5?			3	Introduced, Common		x		
	Euthamia caroliniana	Slender Fragrant	S1	G5		10	-3	Native, Rare	Yes		NHIC	x
	Euthamia graminifolia	Grass-leaved Goldenrod	S5	G5		2	0	Native, Common		x		x
	Eutrochium maculatum	Spotted Joe Pye Weed	S5	G5		3	-5			x		x
	Eutrochium purpureum	Purple Joe Pye Weed	S4	G5		8	0	Native, Rare	Yes	x		x
S	*Fallopia dumetorum*	Hedge Bindweed	SNA	GU								x
	Fallopia scandens	Climbing False Buckwheat	S4S5	G5		3	0	Native, Common		x		
*	*Filipendula ulmaria*	Queen-of-the-meadow	SNA	G5			0					x
*	*Ficaria verna*	Fig-root Buttercup	SNA	GNR			-3	Introduced, Rare		x		
	Fragaria vesca	Woodland Strawberry	S5	G5		4	3					x
*	*Frangula alnus*	Glossy Buckthorn	SNA	GNR			0	Introduced, Rare				x
	Fraxinus profunda	Pumpkin Ash	S2?	G4		9	-5	Native, Rare			NHIC	x
	Fraxinus quadrangulata	Blue Ash	S2?	G5	THR	SC 9	3	Native, Rare			NHIC	
	Fragaria virginiana	Wild Strawberry	S5	G5		2	3	Native, Common	Yes	x		x
	Fraxinus americana	White Ash	S4	G5		4	3	Native, Common		x		
	Fraxinus pennsylvanica	Red Ash	S4	G5		3	-3	Native, Common		x		x
	Galium asprellum	Rough Bedstraw	S5	G5		6	-5	Native, Rare			x	
*	*Galium odoratum*	Sweet-scented Bedstraw	SNA	GNR			5					x
	Galium aparine	Common Bedstraw	S5	G5		4	3	Native, Common		x		x
	Galium pilosum	Hairy Bedstraw	S3	G5		9	5	Native, Rare	Yes		NHIC	
	Galium trifidum	Three-petalled Bedstraw	S5	GNR		5	-3					x
	Galium circaezans	Licorice Bedstraw	S5	G5		7	3	Native, Common		x		
*	*Galium mollugo*	Smooth Bedstraw	SNA	GNR			5			x		
	Galium palustre	Common Marsh Bedstraw	S5	G5		5	-5	Native, Rare		x		x
	Galium triflorum	Three-flowered Bedstraw	S5	G5		4	3	Native, Common		x		
	Gaylussacia baccata	Black Huckleberry	S4	G5		8	3	Native, Uncommon		x		
	Gentiana andrewsii	Andrews' Bottle Gentian	S4	G5?		6	-3	Native, Uncommon	Yes	x		x

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	Gentianopsis crinita	Greater Fringed Gentian	S5	G5			8	-5	Native, Rare	Yes	x		x
	Geum aleppicum	Yellow Avens	S5	G5			2	0	Native, Rare				x
	Geranium maculatum	Spotted Geranium	S5	G5			6	3	Native, Common		x		x
	Geum vernum	Spring Avens	S4	G5			7	3	Native, Common				x
	Gillenia trifoliata	Bowman's-root	SX	G4G5			9	5	Unconfirmed Report			NHIC	
	Geum canadense	Canada Avens	S5	G5			3	0	Native, Common		x		x
	Geum laciniatum	Rough Avens	S4	G5			4	-3	Native, Common		x		
*	*Glechoma hederacea*	Ground-ivy	SNA	GNR				3	Introduced, Common		x		x
	Gleditsia triacanthos	Honey Locust	S2?	G5			8	0	Native, Uncommon	Yes	x		
	Gymnocladus dioicus	Kentucky Coffee-tree	S2	G5	THR	THR	6	3	Native, Rare			NHIC	
	Hackelia virginiana	Virginia Stickseed	S5	G5			5	3	Native, Common		x		x
	Hamamelis virginiana	American Witch-hazel	S4S5	G5			6	3	Native, Common		x		x
*	*Hedera helix*	English Ivy	SNA	GNR				3	Introduced, Rare		x		
	Helenium autumnale	Common Sneezeweed	S4	G5			7	-3	Native, Uncommon	Yes	x		x
	Helianthus divaricatus	Woodland Sunflower	S5	G5			7	5	Native, Common	Yes	x		
	Helianthus giganteus	Giant Sunflower	S5	G5			6	-3	Native, Common	Yes	x		x
*	*Helianthus maximiliani*	Maximilian Sunflower	SNA	G5				5	Introduced, Historical		x		
	Helianthus tuberosus	Jerusalem Artichoke	SU	G5			1	0	ve, status unknown or not spec		x		x
	Hepatica americana	Round-lobed Hepatica	S5	G5			6	5	Native, Rare		x		x
	Heracleum maximum	American Cow Parsnip	S5	G5			3	-3	Native, Rare		x		
*	*Hesperis matronalis*	Dame's Rocket	SNA	G4G5				3	Introduced, Uncommon		x		x
	Heuchera americana	American Alumroot	S1	G5			9	3	Native, Uncommon			NHIC	
	Hibiscus moscheutos	Swamp Rose-mallow	S3	G5	SC	SC	9	-5	Native, Common			NHIC	
*	*Hibiscus trionum*	Flower-of-an-hour	SNA	GNR				5	Introduced, Uncommon		x		
	Hylodesmum glutinosum	Large Tick-trefoil	S4	G5			6	5	Native, Uncommon		x		
	Hypericum prolificum	Shrubby St. John's-wort	S2	G5			6	3	Native, Rare	Yes		NHIC	
	Hypericum gentianoides	Gentian-leaved St. John's-	S1	G5			10	3	Native, Rare	Yes	x	NHIC	x
	Hypericum mutilum	Dwarf St. John's-wort	S4	G5			6	-3	Native, Rare		x		
*	*Hypericum perforatum*	Common St. John's-wort	SNA	GNR				5	Introduced, Common	Yes	x		x
	Hypericum punctatum	Spotted St. John's-wort	S5	G5			5	0	Native, Common		x		
	Ilex verticillata	Common Winterberry	S5	G5			5	-3	Native, Common		x		
	Impatiens capensis	Spotted Jewelweed	S5	G5			4	-3	Native, Common		x		x
*	*Jacobaea vulgaris*	Tansy Ragwort	SNA	GNR				5					x
	Juglans cinerea	Butternut	S2?	G3	END	END	6	3	Native, Common			NHIC	
	Juglans nigra	Black Walnut	S4?	G5			5	3	Native, Common		x		x
*	*Juglans regia*	English Walnut	SNA	GNR				5			x		
	Krigia biflora	Two-flowered Dwarf-	S2	G5			10	3	Native, Uncommon	Yes		NHIC	
	Lactuca biennis	Tall Blue Lettuce	S5	G5			6	0	Native, Rare		x		
*	*Lactuca serriola*	Prickly Lettuce	SNA	GNR				3	Introduced, Common		x		x
*	*Lamium amplexicaule*	Common Dead-nettle	SNA	GNR				5	Introduced, Rare		x		x
*	*Lamium purpureum*	Purple Dead-nettle	SNA	GNR				5	Introduced, Uncommon		x		
	Lechea mucronata	Hairy Pinweed	S3	G5			9	5	Native, Rare	Yes		NHIC	
	Lechea pulchella	Leggett's Pinweed	S1	G5			10	5	Native, Rare	Yes		NHIC	
	Lathyrus palustris	Marsh Vetchling	S5	G5			6	-3	Native, Uncommon		x		
*	*Lathyrus tuberosus*	Tuberous Vetchling	SNA	GNR				5	Introduced, Rare		x		
*	*Leonurus cardiaca*	Common Motherwort	SNA	GNR				5	Introduced, Common		x		
	Lespedeza virginica	Slender Bush-clover	S1	G5	END	END	10	5	Native, Rare	Yes		NHIC	

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Lespedeza capitata	Round-headed Bush-clover	S4	G5			7	3	Native, Rare	Yes	x			x
Lespedeza violacea	Wand Bush-clover	S4?	G5			8	5	Native, Rare	Yes	x			
* *Leucanthemum vulgare*	Oxeye Daisy	SNA	GNR				5	Introduced, Common		x			
Liatris aspera	Rough Blazing-star	S2	G4G5			10	5	Native, Rare	Yes		NHIC		x
Liatris spicata	Dense Blazing-star	S2	G5	THR	THR	9	0	Native, Rare	Yes		NHIC		x
* *Linaria vulgaris*	Butter-and-eggs	SNA	GNR				5	Introduced, Common		x			
Lindera benzoin	Northern Spicebush	S4	G5			6	-3	Native, Common		x			
Liriodendron tulipifera	Tulip Tree	S4	G5			8	3	Native, Uncommon		x			
Lithospermum canescens	Hoary Puccoon	S3	G5			10	5	Native, Rare	Yes		NHIC		
Lithospermum caroliniense	Golden Puccoon	S3	G4G5			8	5	Native, Rare	Yes				x
Lobelia cardinalis	Cardinal Flower	S5	G5			7	-5	Native, Uncommon		x			
Lobelia inflata	Indian-tobacco	S5	G5			3	3	Native, Uncommon		x			
Lobelia siphilitica	Great Blue Lobelia	S5	G5			6	-3	Native, Common		x			x
Lobelia spicata	Pale-spike Lobelia	S4	G5			8	0	Native, Rare	Yes	x			x
Lonicera canadensis	Canada Fly Honeysuckle	S5	G5			6	3	Native, Rare					x
Lonicera dioica	Limber Honeysuckle	S5	G5			5	3	Native, Common		x			
* *Lonicera japonica*	Japanese Honeysuckle	SNA	GNR				3	Introduced, Uncommon		x			
* *Lonicera maackii*	Maack's Honeysuckle	SNA	GNR				5	Introduced, Rare		x			x
* *Lonicera morrowii*	Morrow's Honeysuckle	SNA	GNR				3	Introduced, Rare		x			
* *Lonicera tatarica*	Tatarian Honeysuckle	SNA	GNR				3	Introduced, Uncommon		x			x
* *Lotus corniculatus*	Garden Bird's-foot Trefoil	SNA	GNR				3	Introduced, Common		x			
Ludwigia polycarpa	Many-fruit Seedbox	S2	G4			8	-5	Native, Uncommon	Yes		NHIC		x
Lupinus perennis	Sundial Lupine	S2S3	G5			10	5	Native, Rare	Yes		NHIC		
Ludwigia alternifolia	Bushy Seedbox	S1	G5			10	-5	Native, Rare	Yes	x	NHIC		x
Lycopus uniflorus	Northern Water-	S5	G5			5	-5	Native, Common					x
Lycopus americanus	American Water-	S5	G5			4	-5	Native, Common		x			x
* *Lysimachia arvensis*	Scarlet Pimpernel	SNA	GNR				3	Introduced, Rare		x			
Lysimachia ciliata	Fringed Yellow Loosestrife	S5	G5			4	-3	Native, Common	Yes	x			x
Lythrum alatum	Winged Loosestrife	S3	G5			5	-5	Native, Common	Yes		NHIC		x
Lysimachia quadriflora	Four-flowered Yellow	S4	G5?			10	-5	Native, Rare	Yes	x			x
Lysimachia quadrifolia	Whorled Yellow Loosestrife	S4	G5			8	3	Native, Rare	Yes	x			x
* *Lysimachia vulgaris*	Garden Yellow Loosestrife	SNA	GNR				-3			x			
* *Lythrum salicaria*	Purple Loosestrife	SNA	G5				-5	Introduced, Common		x			x
* *Malus baccata*	Siberian Crabapple	SNA	GNR				5						x
Malus coronaria	Sweet Crabapple	S4	G5			5	5	Native, Common		x			x
* *Malus pumila*	Common Apple	SNA	G5				5	Introduced, Rare		x			x
* *Medicago lupulina*	Black Medick	SNA	GNR				3	Introduced, Common		x			
* *Medicago sativa*	Alfalfa	SNA	GNR				5			x			
* *Melilotus albus*	White Sweet-clover	SNA	G5				3	Introduced, Common		x			x
* *Melilotus altissimus*	Tall Yellow Sweet-clover	SNA	GNR				5			x			
* *Melilotus officinalis*	Yellow Sweet-clover	SNA	GNR				3	Introduced, Common		x			
Menispermum canadense	Canada Moonseed	S4	G5			7	0	Native, Common		x			x
Mentha x dumetorum	(Mentha aquatica X Mentha spicata)	SNA	GNA										x
Mentha canadensis	Canada Mint	S5	G5			3	-3	Native, Common		x			x
* *Mentha spicata*	Spearmint	SNA	GNR				-3	Introduced, Rare		x			
Mimulus ringens	Square-stemmed	S5	G5			6	-5	Native, Common		x			x

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Monarda fistulosa	Wild Bergamot	S5	G5			6	3			x		x
Monotropa uniflora	Indian-pipe	S5	G5			6	3	Native, Uncommon		x		
Morus rubra	Red Mulberry	S2	G5	END	END	10	3	Native, Rare			NHIC	
* *Morus alba*	White Mulberry	SNA	GNR				0	Introduced, Common		x		x
Nabalus albus	White Rattlesnakeroot	S5	G5			6	3	Native, Common	Yes	x		x
Nabalus racemosus	Glaucous Rattlesnakeroot	S5	G5			10	-3	Native, Rare	Yes	x		
Nelumbo lutea	American Lotus	S2S3	G4			10	-5	Native, Uncommon		x	NHIC	x
* *Nepeta cataria*	Catnip	SNA	GNR				3	Introduced, Common		x		
Nuphar advena	Large Yellow Pond-lily	S3	GNR			8	-5	Native, Uncommon			NHIC	
Nyssa sylvatica	Black Gum	S3	G5			9	-3	Native, Uncommon			NHIC	x
Nymphaea odorata	Fragrant Water-lily	S5	G5			5	-5	Native, Rare		x		
Oenothera gaura	Biennial Gaura	S3	G5			4	3	Native, Uncommon	Yes		NHIC	x
Oenothera pilosella	Meadow Evening-primrose	S2	G5			8	0	Native, Rare			NHIC	
Oenothera biennis	Common Evening-primrose	S5	G5			0	3	Native, Common		x		x
* *Origanum vulgare*	Wild Marjoram	SNA	GNR				5			x		
Osmorhiza longistylis	Smooth Sweet Cicely	S5	G5			6	3	Native, Common		x		
Ostrya virginiana	Eastern Hop-hornbeam	S5	G5			4	3	Native, Common		x		
Oxalis stricta	Upright Yellow Wood-	S5	G5			0	3	Native, Common		x		x
Oxybasis glauca	Oak-leaved Goosefoot	S4?	G5				-3			x		
Oxypolis rigidior	Stiff Cowbane	S2	G5			9	-5	Native, Uncommon	Yes		NHIC	x
Packera pseudaurea var. semicordata	Heart-leaved Groundsel	S2	G5T3T5			8	-3	Native, Rare			NHIC	
Packera aurea	Golden Groundsel	S5	G5			7	-3	Native, Rare		x		x
Panax trifolius	Dwarf Ginseng	S4	G5			8	5	Native, Rare		x		
Parthenocissus vitacea	Thicket Creeper	S5	G5			4	3	Native, Common				x
Parthenocissus	Virginia Creeper	S4?	G5			6	3	Native, Common		x		x
* *Pastinaca sativa*	Wild Parsnip	SNA	GNR				5	Introduced, Uncommon		x		x
Pedicularis canadensis	Canada Lousewort	S5	G5			7	3	Native, Uncommon		x		
Pedicularis lanceolata	Swamp Lousewort	S4	G5			9	-3	Native, Rare		x		x
Penstemon digitalis	Foxglove Beardtongue	S4	G5			6	0	Native, Rare	Yes	x		x
Penstemon hirsutus	Hairy Beardtongue	S4	G4			7	5	Native, Common	Yes	x		
Penthorum sedoides	Ditch Stonecrop	S5	G5			4	-5	Native, Common		x		x
* *Persicaria hydropiper*	Marshpepper Smartweed	SNA	GNR				-5	Introduced, Common				x
Persicaria lapathifolia	Pale Smartweed	S5	G5			2	-3	Native, Common				x
Persicaria amphibia	Water Smartweed	S5	G5			5	-5	Native, Uncommon		x		
* *Persicaria maculosa*	Spotted Lady's-thumb	SNA	G3G5				-3	Introduced, Common		x		x
Persicaria pensylvanica	Pennsylvania Smartweed	S5	G5			3	-3	Native, Common		x		x
Persicaria virginiana	Virginia Smartweed	S4	G5			6	0	Native, Common		x		x
Phlox divaricata	Wild Blue Phlox	S4	G5			7	3	Native, Common		x		
Phryma leptostachya	Lopseed	S4S5	G5			6	3	Native, Common		x		x
Physocarpus opulifolius	Eastern Ninebark	S5	G5			5	-3	Native, Rare		x		
Phytolacca americana	Common Pokeweed	S4	G5			3	3	Native, Common		x		
Pilea pumila	Dwarf Clearweed	S5	G5			5	-3	Native, Common		x		
* *Pilosella caespitosa*	Meadow Hawkweed	SNA	GNR				5	Introduced, Uncommon		x		
* *Plantago lanceolata*	English Plantain	SNA	G5				3	Introduced, Common		x		x
* *Plantago major*	Common Plantain	SNA	G5				3	Introduced, Uncommon		x		x
Plantago rugelii	Rugel's Plantain	S5	G5			1	0	Native, Common		x		

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Platanus occidentalis	Sycamore	S4	G5			8	-3	Native, Common		x		x
* *Pluchea odorata*	Shrubby Camphorweed	SNA	G5				-5	Introduced, Rare				x
Podophyllum peltatum	May-apple	S5	G5			5	3	Native, Common		x		x
Polygala aquilonia	Northern Milkwort	SX	G4			9	-3	Native, Historical			NHIC	
Polygala incarnata	Pink Milkwort	S1	G5	END	END	10	3	Native, Rare	Yes		NHIC	
Polygala sanguinea	Blood Milkwort	S3	G5			9	3	Native, Rare	Yes		NHIC	x
Polygala verticillata	Whorled Milkwort	S3?	G5			7	5	Native, Rare	Yes		NHIC	x
Polygonum erectum	Erect Knotweed	SH	G5			2	3	Native, Historical			NHIC	
Polygonum tenue	Slender Knotweed	S2	G5			10	5	Native, Rare	Yes		NHIC	
* *Populus alba*	White Poplar	SNA	G5				5	Introduced, Rare		x		
Populus deltoides	Eastern Cottonwood	S5	G5			4	0			x		x
Populus grandidentata	Large-toothed Aspen	S5	G5			5	5	Native, Uncommon		x		x
Populus tremuloides	Trembling Aspen	S5	G5			2	0	Native, Common		x		x
Potentilla anserina	Silverweed	S5	G5			5	-3					x
* *Potentilla recta*	Sulphur Cinquefoil	SNA	GNR				5	Introduced, Common		x		x
Potentilla simplex	Old-field Cinquefoil	S5	G5			3	3	Native, Common		x		x
Proserpinaca palustris	Marsh Mermaidweed	S4	G5			7	-5	Native, Rare		x		
Prunella vulgaris	Common Self-heal	S5	G5			0	0			x		x
Prunus nigra	Canada Plum	S4	G4G5			4	3	Native, Uncommon		x		
Prunus serotina	Black Cherry	S5	G5			3	3	Native, Common		x		x
Prunus virginiana	Chokecherry	S5	G5			2	3	Native, Common		x		x
Pseudognaphalium obtusifolium	Fragrant Cudweed	S5	G5			4	5	Native, Rare		x		
Pycnanthemum	Slender Mountain-mint	S3	G5			8	0	Native, Rare	Yes		NHIC	
Pycnanthemum verticillatum var. pilosum	Hairy Mountain-mint	S1	G5T5			8	3	Native, Rare	Yes		NHIC	
Pycnanthemum	Virginia Mountain-mint	S4	G5			6	-3	Native, Common	Yes	x		x
Quercus alba	White Oak	S5	G5			6	3	Native, Common		x		x
Quercus bicolor	Swamp White Oak	S4	G5			8	-3	Native, Common		x		x
Quercus macrocarpa	Bur Oak	S5	G5			5	3	Native, Common		x		x
Quercus shumardii	Shumard Oak	S3	G5	SC		7	-3	Native, Uncommon			NHIC	x
Quercus palustris	Swamp Pin Oak	S4	G5			9	-3	Native, Common	Yes	x		x
* *Quercus robur*	English Oak	SNA	GNR				5			x		
Quercus rubra	Northern Red Oak	S5	G5			6	3	Native, Common		x		x
Quercus velutina	Black Oak	S4	G5			8	5	Native, Common	Yes	x		x
Ranunculus abortivus	Kidney-leaved Buttercup	S5	G5			2	0	Native, Common				x
* *Ranunculus acris*	Common Buttercup	SNA	G5				0	Introduced, Uncommon		x		x
Ranunculus hispidus	Bristly Buttercup	S3	G5			8	0	Native, Historical	Yes	x		x
Ratibida pinnata	Grey-headed Prairie	S3	G5			9	5	Native, Uncommon	Yes	x	NHIC	x
* *Reynoutria japonica*	Japanese Knotweed	SNA	GNR				3	Introduced, Rare		x		
Rhinanthus minor	Little Yellow Rattle	S4?	G5				0					x
* *Rhamnus cathartica*	European Buckthorn	SNA	GNR				0	Introduced, Uncommon		x		x
Rhus glabra	Smooth Sumac	S5	G5			7	5	Native, Uncommon		x		x
Rhus typhina	Staghorn Sumac	S5	G5			1	3	Native, Common		x		x
Ribes americanum	American Black Currant	S5	G5			4	-3	Native, Common				x
Ribes hirtellum	Swamp Gooseberry	S5	G5			6	-3	Native, Rare				x
* *Ricinus communis*	Castor-bean	SNA	GNR				3			x		

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	Rosa arkansana	Prairie Rose	S1	G5			5	5				x
	Rosa blanda	Smooth Rose	S5	G5			3	3	Native, Common			x
*	*Robinia pseudoacacia*	Black Locust	SNA	G5				3	Introduced, Uncommon		x	
	Rosa palustris	Swamp Rose	S5	G5			7	-5	Native, Common			x
	Rosa setigera	Climbing Prairie Rose	S2S3	G5	SC	SC	5	3	Native, Common	Yes	NHIC	x
	Rubus allegheniensis	Allegheny Blackberry	S5	G5			2	3	Native, Common			x
	Rubus canadensis	Canada Blackberry	S5	G5			2	5	Native, Rare			x
*	*Rosa multiflora*	Multiflora Rose	SNA	GNR				3	Introduced, Common		x	x
	Rubus flagellaris	Northern Dewberry	S4	G5			4	3	Native, Common		x	
	Rubus idaeus	Red Raspberry	S5	G5			2	3			x	x
	Rubus parviflorus	Western Thimbleberry	S4	G5			7	3				x
	Rubus occidentalis	Black Raspberry	S5	G5			2	5	Native, Common		x	
	Rudbeckia fulgida	Orange Coneflower	S1	G5				-5	Native, Rare			x
	Rubus pubescens	Dwarf Raspberry	S5	G5			4	-3	Native, Rare		x	
	Rudbeckia hirta	Black-eyed Susan	S5	G5			0	3	Native, Common	Yes	x	x
*	*Rumex acetosella*	Sheep Sorrel	SNA	GNR				3	Introduced, Common			x
	Rudbeckia laciniata	Cut-leaved Coneflower	S5	G5			7	-3	Native, Rare		x	
*	*Rumex crispus*	Curled Dock	SNA	GNR				0	Introduced, Common		x	x
	Salix amygdaloides	Peach-leaved Willow	S5	G5			6	-3	Native, Common			x
	Salix bebbiana	Bebb's Willow	S5	G5			4	-3	Native, Rare			x
	Salix cordata	Heart-leaved Willow	S4	G4			9	0	Unconfirmed Report			x
	Salix discolor	Pussy Willow	S5	G5			3	-3	Native, Common			x
	Salix eriocephala	Cottony Willow	S5	G5			4	-3	Native, Common		x	x
	Salix humilis	Prairie Willow	S5	G5			7	3	Native, Rare		x	
	Salix nigra	Black Willow	S4	G5			6	-5	Native, Uncommon			x
	Salix x pendulina	(Salix babylonica X Salix	SNA	GNA								x
	Salix interior	Sandbar Willow	S5	G5			1	-3	Native, Common		x	x
S	*Sambucus nigra*	Black Elderberry	SNA	G5				-3				x
	Sambucus canadensis	Common Elderberry	S5	G5			5	-3	Native, Common		x	x
	Sambucus racemosa	Red Elderberry	S5	G5			5	3	Native, Rare		x	x
	Sanicula marilandica	Maryland Sanicle	S5	G5			5	3	Native, Common		x	
	Sanguinaria canadensis	Bloodroot	S5	G5			5	3	Native, Uncommon		x	
	Sanicula canadensis	Canada Sanicle	S4	G5			7	3			x	x
*	*Saponaria officinalis*	Bouncing-bet	SNA	GNR				3	Introduced, Common		x	
	Sassafras albidum	Sassafras	S4	G5			6	3	Native, Common		x	x
	Scutellaria lateriflora	Mad-dog Skullcap	S5	G5			5	-5	Native, Common		x	x
*	*Securigera varia*	Purple Crown-vetch	SNA	GNR				5	Introduced, Uncommon		x	
*	*Senecio vulgaris*	Common Ragwort	SNA	GNR				5	Introduced, Rare		x	
	Silphium laciniatum	Compass Plant	S1	G5			3	5	Introduced, Rare	Yes	NHIC	
	Silphium terebinthinaceum	Prairie Rosinweed	S1	G4G5			10	0	Native, Rare	Yes	NHIC	x
*	*Silene vulgaris*	Bladder Campion	SNA	GNR				5	Introduced, Uncommon		x	x
	Silphium perfoliatum	Cup Plant	S2	G5			9	-3	Native, Historical		x	NHIC
*	*Sinapis arvensis*	Corn Mustard	SNA	GNR				5	Introduced, Rare		x	
*	*Sisymbrium altissimum*	Tall Tumble Mustard	SNA	GNR				3	Introduced, Uncommon		x	
	Sium suave	Common Water-parsnip	S5	G5			4	-5	Native, Common		x	x
*	*Solanum carolinense*	Carolina Nightshade	SNA	G5				3	Introduced, Uncommon		x	
	Solidago altissima	Tall Goldenrod	S5	G5			1	3			x	x

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* *Solanum dulcamara*	Bittersweet Nightshade	SNA	GNR				0	Introduced, Common		x		x
Solidago canadensis	Canada Goldenrod	S5	G5			1	3					x
Solanum emulans	Eastern Black Nightshade	S5	G5			1	3	Native, Common		x		
Solidago bicolor	White Goldenrod	S4?	G5			8	5	Native, Rare		x		
Solidago gigantea	Giant Goldenrod	S5	G5			4	-3	Native, Rare		x		x
Solidago riddellii	Riddell's Goldenrod	S3	G5	SC	SC	10	-5	Native, Rare	Yes		NHIC	x
Solidago juncea	Early Goldenrod	S5	G5			3	5	Native, Uncommon		x		x
Solidago rigida ssp. rigida	Eastern Stiff Goldenrod	S3	G5T5			7	3	Native, Uncommon	Yes		NHIC	
Solidago nemoralis	Grey-stemmed Goldenrod	S5	G5			2	5			x		
Solidago rigida	Stiff Goldenrod	S3	G5			7	3			x	NHIC	x
* *Sonchus arvensis*	Field Sow-thistle	SNA	GNR				3	Introduced, Common				x
* *Sorbus aucuparia*	European Mountain-ash	SNA	G5				5	Introduced, Rare				x
Solidago rugosa	Rough-stemmed	S5	G5			4	0	Native, Common		x		x
* *Solidago sempervirens*	Seaside Goldenrod	SNA	G5				-3	Introduced, Uncommon		x		x
Spergularia marina	Saltmarsh Sand-spurrey	S1	G5				-3	Introduced, Rare			NHIC	
Spiraea alba	White Meadowsweet	S5	G5			3	-3	Native, Common		x		x
Spiraea tomentosa	Steeplebush	S5	G5			5	-3	Native, Rare		x		x
* *Stachys palustris*	Marsh Hedge-nettle	SNA	G5				-5	ıced, Status unknown or not sp				x
Stachys pilosa	Hairy Hedge-nettle	SU	G5			6	-3					x
Stachys hispida	Hispid Hedge-nettle	S4	G4Q			7	-3	Native, Common		x		
* *Stellaria media*	Common Chickweed	SNA	GNR				3	Introduced, Common		x		x
Strophostyles helvola	Trailing Wild Bean	S4	G5			8	0	Native, Common	Yes	x		x
Symphyotrichum	Heart-leaved Aster	S5	G5			5	5	Native, Uncommon				x
Symphyotrichum	Bushy Aster	S2	G5			10	0	Native, Rare	Yes		NHIC	
Symphyotrichum ericoides	White Heath Aster	S5	G5			4	3			x		x
Symphyotrichum laeve	Smooth Aster	S5	G5			7	3			x		x
Symphyotrichum	Panicled Aster	S5	G5			3	-3	Native, Common		x		
Symphyotrichum	Calico Aster	S5	G5			3	0	Native, Common		x		x
Symphyotrichum novae-angliae	New England Aster	S5	G5			2	-3	Native, Common	Yes	x		x
Symphyotrichum oolentangiense	Sky Blue Aster	S4	G5			9	5	Native, Rare	Yes	x		
Symphyotrichum pilosum	Old Field Aster	S5	G5				3			x		x
Symphyotrichum	Willow-leaved Aster	S2	G5	THR	THR	8	-3	Native, Rare	Yes		NHIC, x	x
Symphyotrichum shortii	Short's Aster	S4	G5			7	5	Native, Uncommon	Yes			x
Symphyotrichum	Arrow-leaved Aster	S4	G4G5			6	5	Native, Common	Yes	x		
* *Syringa vulgaris*	Common Lilac	SNA	GNR				5	Introduced, Rare		x		
Taenidia integerrima	Yellow Pimpernel	S4	G5			9	5	Native, Uncommon				x
* *Taraxacum officinale*	Common Dandelion	SNA	G5				3	Introduced, Common				x
Thalictrum amphibolum	Skunk Meadow-rue	S2S3	GNR			9	0	Native, Rare	Yes		NHIC	x
Teucrium canadense	Canada Germander	S4S5	G5			6	-3			x		
Thalictrum dasycarpum	Purple Meadow-rue	S4?	G5			5	-3	Native, Common	Yes	x		x
Thalictrum pubescens	Tall Meadow-rue	S5	G5			5	-3	Unconfirmed Report				x
Thalictrum dioicum	Early Meadow-rue	S5	G5			6	3	Native, Common		x		x
* *Thlaspi arvense*	Field Pennycress	SNA	GNR				5	Introduced, Common		x		
Tilia americana	Basswood	S5	G5			4	3	Native, Common		x		x

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Toxicodendron radicans var. rydbergii	Western Poison Ivy	S5	G--T5	2	0	Native, Common				x
Toxicodendron radicans	Poison Ivy	S5	G5	2	0			x		x
* *Tragopogon dubius*	Yellow Goatsbeard	SNA	GNR		5	Introduced, Common		x		
* *Tragopogon porrifolius*	Purple Goatsbeard	SNA	GNR		5	Introduced, Uncommon		x		
* *Tragopogon pratensis*	Meadow Goatsbeard	SNA	GNR		5	Introduced, Uncommon		x		
* *Trifolium campestre*	Low Hop Clover	SNA	GNR		5	Introduced, Uncommon		x		
* *Trifolium fragiferum*	Strawberry Clover	SNA	GNR		3	Introduced, Rare		x		
* *Trifolium pratense*	Red Clover	SNA	GNR		3	Introduced, Uncommon		x		
* *Trifolium repens*	White Clover	SNA	GNR		3	Introduced, Uncommon		x		
Triosteum perfoliatum	Perfoliate Horse-gentian	S1	G5	9	5	Native, Rare			NHIC	
Triodanis perfoliata	Clasping-leaved Venus' Looking-glass	S4	G5	6	3	Native, Uncommon		x		
* *Tussilago farfara*	Coltsfoot	SNA	GNR		3	Introduced, Uncommon		x		
Ulmus americana	White Elm	S5	G4	3	-3	Native, Common		x		x
Ulmus rubra	Slippery Elm	S5	G5	6	0	Native, Common				x
* *Ulmus pumila*	Siberian Elm	SNA	GNR		3	Introduced, Uncommon		x		x
Urtica dioica	Stinging Nettle	S5	G5	2	0			x		
Vaccinium pallidum	Pale Blueberry	S4	G5	9	5	Native, Common		x		
* *Verbascum blattaria*	Moth Mullein	SNA	GNR		3	Introduced, Common		x		x
* *Verbascum thapsus*	Common Mullein	SNA	GNR		5	Introduced, Common		x		
Verbena hastata	Blue Vervain	S5	G5	4	-3	Native, Common	Yes	x		x
Verbena stricta	Hoary Vervain	S4	G5	7	5	Native, Rare	Yes	x		
Verbesina alternifolia	Wingstem	S3	G5	5	-3	Native, Rare			NHIC	
Verbena urticifolia	White Vervain	S5	G5	4	0	Native, Common		x		x
Vernonia gigantea	Giant Ironweed	S1?	G5	4	0	ve, status unknown or not spec	Yes		NHIC	x
Vernonia missurica	Missouri Ironweed	S3?	G4G5	4	0	ve, status unknown or not spec	Yes	x	NHIC	x
Veronicastrum virginicum	Culver's Root	S2	G4	10	0	Native, Rare	Yes		NHIC	x
* *Veronica persica*	Bird's-eye Speedwell	SNA	GNR		5	ɹced, Status unknown or not sp		x		
Viburnum acerifolium	Maple-leaved Viburnum	S5	G5	6	5	Native, Common				x
Viburnum lentago	Nannyberry	S5	G5	4	0	Native, Common		x		x
Viburnum opulus	Guelder Rose	S5	G5	5	-3			x		x
Viburnum rafinesqueanum	Downy Arrowwood	S5	G5	7	5	Native, Common				x
Vicia americana	American Vetch	S5	G5	5	3	Native, Rare		x		
* *Vicia cracca*	Tufted Vetch	SNA	GNR		5	Introduced, Rare		x		
* *Vicia sativa*	Common Vetch	SNA	GNR		3	Introduced, Rare		x		
* *Vicia villosa*	Hairy Vetch	SNA	G5		5	Introduced, Common		x		
* *Vinca minor*	Lesser Periwinkle	SNA	GNR		5	Introduced, Rare		x		
* *Vincetoxicum rossicum*	European Swallowwort	SNA	GNR		5			x		
Viola pubescens	Yellow Violet	S5	G5	5	3	Native, Common		x		
Viola sagittata	Arrow-leaved Violet	S4	G5	9	0			x		x
Viola sororia	Woolly Blue Violet	S5	G5	4	0	Native, Common		x		x
Vitis aestivalis	Summer Grape	S4	G5	7	3	Native, Uncommon		x		
Vitis labrusca	Northern Fox Grape	S1	G5	3	3	Native, Rare			NHIC	x
Vitis riparia	Riverbank Grape	S5	G5	0	0	Native, Common		x		x
Xanthium strumarium	Rough Cockleburr	S5	G5	2	0	Native, Common		x		x
Zanthoxylum americanum	Common Prickly-ash	S5	G5	3	3	Native, Common		x		

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Zizia aurea	Golden Alexanders	S5	G5			7	0	Native, Rare		x		
* *Agrostis gigantea*	Redtop	SNA	G4G5				-3	Introduced, Common				x
Agrostis scabra	Rough Bentgrass	S5	G5			6	0	Native, Rare				x
Aletris farinosa	White Colicroot	S2	G5	END	THR	10	0	Native, Rare	Yes		NHIC	x
* *Agrostis capillaris*	Colonial Bentgrass	SNA	GNR				0			x		
Alisma subcordatum	Southern Water-plantain	S4?	G5			1	-5	ve, status unknown or not spec				x
Alisma triviale	Northern Water-plantain	S5	G5			1	-5	ve, status unknown or not spec		x		
Allium canadense	Canada Garlic	S5	G5			8	3	Native, Common		x		
Andropogon gerardi	Big Bluestem	S4	G5			7	3	Native, Uncommon	Yes	x		x
Andropogon virginicus	Broomsedge Bluestem	S4	G5			5	3	Native, Rare	Yes	x		x
Arisaema dracontium	Green Dragon	S3	G5	SC		9	-3	Native, Rare			NHIC	
Aristida longespica var. geniculata	Kearney's Threeawn Grass	S2	G5T5?			8	3	Native, Rare	Yes		NHIC	
Aristida longespica var. longespica	Slim-spike Threeawn Grass	S2	G5T5?			8	3	Native, Rare	Yes		NHIC	
Aristida purpurascens	Arrowfeather Threeawn	S1	G5			10	5	Native, Rare	Yes		NHIC	
Arisaema triphyllum	Jack-in-the-pulpit	S5	G5			5	-3	Native, Common		x		
* *Asparagus officinalis*	Garden Asparagus	SNA	G5?				3	Introduced, Common		x		x
Beckmannia syzigachne	American Sloughgrass	S4	G5			4	-5					x
* *Bromus inermis*	Smooth Brome	SNA	G5				5	Introduced, Common		x		x
Bromus kalmii	Kalm's Brome	S4	G5			8	0	Native, Rare	Yes	x		
* *Butomus umbellatus*	Flowering-rush	SNA	G5				-5	Introduced, Common		x		
Calamagrostis canadensis	Bluejoint Reedgrass	S5	G5			4	-5	Native, Common	Yes	x		x
Carex annectens	Yellow-fruited Sedge	S2	G5			6	-3	Native, Rare	Yes		NHIC	
Carex bicknellii	Bicknell's Sedge	S2	G5			10	0	Native, Rare	Yes		NHIC	
Carex blanda	Woodland Sedge	S5	G5			3	0	Native, Common				x
Carex brevior	Short-beaked Sedge	S4	G5			7	0	Native, Rare	Yes			x
Carex cephalophora	Oval-leaved Sedge	S5	G5			5	3	Native, Common				x
Carex conoidea	Field Sedge	S3	G5			9	-3	Native, Rare	Yes		NHIC	
Carex festucacea	Fescue Sedge	S1	G5			9	0	Native, Rare			NHIC	
Carex foenea	Bronze Sedge	S5	G5			3	5					x
Carex alopecoidea	Foxtail Sedge	S4	G5			6	-3	Native, Uncommon		x		
Carex lacustris	Lake Sedge	S5	G5			5	-5	Native, Common				x
Carex lasiocarpa	Woolly-fruit Sedge	S5	G5			8	-5	Native, Rare				x
Carex aurea	Golden Sedge	S5	G5			4	-3	Native, Rare		x		
Carex bebbii	Bebb's Sedge	S5	G5			3	-5	Native, Common		x		x
Carex cristatella	Crested Sedge	S5	G5			3	-3	Native, Common		x		
Carex granularis	Limestone Meadow Sedge	S5	G5			3	-3	Native, Common		x		
Carex muskingumensis	Muskingum Sedge	S3	G4			9	-5	Native, Common			NHIC	
Carex normalis	Larger Straw Sedge	S4	G5			6	-3	Native, Common				x
Carex hystericina	Porcupine Sedge	S5	G5			5	-5	Native, Rare		x		
Carex intumescens	Bladder Sedge	S5	G5			6	-3	Native, Uncommon		x		
Carex leptonervia	Finely-nerved Sedge	S5	G5			5	0			x		
Carex lupulina	Hop Sedge	S5	G5			6	-5	Native, Common		x		
Carex praticola	Northern Meadow Sedge	S2S3	G5			8	0	Introduced, Rare				x
Carex richardsonii	Richardson's Sedge	S4	G5			9	5	Native, Rare	Yes			x
Carex meadii	Mead's Sedge	S2	G4G5			9	0	Native, Rare	Yes	x	NHIC	x

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Carex muehlenbergii	Muhlenberg's Sedge	S4S5	G5	7	5			x		
Carex stricta	Tussock Sedge	S5	G5	4	-5	Native, Common				x
Carex suberecta	Prairie Straw Sedge	S2	G4	10	-5	Native, Rare	Yes		NHIC	
Carex pellita	Woolly Sedge	S5	G5	2	-5	Native, Common		x		
Carex tenera	Tender Sedge	S5	G5	4	0	Native, Common				x
Carex tetanica	Rigid Sedge	S3?	G4G5	8	-3	Native, Rare	Yes		NHIC	
carex trichocarpa	Hairy-fruited Sedge	S3	G4	8	-5					x
Carex pensylvanica	Pennsylvania Sedge	S5	G5	5	5	Native, Common		x		x
Carex prairea	Prairie Sedge	S5	G5	7	-3	Native, Rare		x		
Carex scoparia	Pointed Broom Sedge	S5	G5	5	-3	Native, Rare		x		x
Carex sparganioides	Burreed Sedge	S4S5	G5	5	3	Native, Common		x		
Carex swanii	Swan's Sedge	S4	G5	7	3	Native, Common	Yes	x		
Carex viridula	Greenish Sedge	S5	G5	5	-5	Native, Rare		x		x
Carex vulpinoidea	Fox Sedge	S5	G5	3	-5	Native, Common		x		x
Cenchrus longispinus	Long-spined Sandbur	S4	G5	3	5	Native, Uncommon		x		
* *Commelina communis*	Asiatic Dayflower	SNA	G5		0	Introduced, Rare		x		
* *Convallaria majalis*	European Lily-of-the-valley	SNA	G5		5	Introduced, Rare		x		
Corallorhiza odontorhiza	Autumn Coralroot	S2S3	G5	8	5			x		
Cyperus bipartitus	Shining Flatsedge	S5	G5	4	-3	Native, Uncommon		x		
Cyperus esculentus	Perennial Yellow Flatsedge	S5	G5	1	-3	Native, Common		x		
Cypripedium parviflorum	Yellow Lady's-slipper	S5	G5	5	0					x
Cyperus lupulinus	Hop Flatsedge	S4	G5	7	3			x		
Cyperus odoratus	Rusty Flatsedge	S4	GNR	4	-5	Native, Common		x		
Cyperus strigosus	Straw-coloured Flatsedge	S5	G5	5	-3	Native, Common		x		x
* *Dactylis glomerata*	Orchard Grass	SNA	GNR		3	Introduced, Common		x		x
Danthonia spicata	Poverty Oatgrass	S5	G5	5	5	Native, Common		x		
Dichanthelium	Commons' Panicgrass	SH	G5	6	3	Native, Historical	Yes		NHIC	
Dichanthelium latifolium	Broad-leaved Panicgrass	S4	G5	6	3	Native, Uncommon				x
Dichanthelium meridionale	Matted Panicgrass	S1	G5	10	5	Native, Rare	Yes		NHIC	
Dichanthelium praecocius	Early-branching Panicgrass	S3	G5?	8	5	Native, Rare	Yes		NHIC	x
Dichanthelium	Round-fruited Panicgrass	S3	G5	8	3	Native, Rare	Yes		NHIC	
Dichanthelium implicatum	Slender-stemmed	S5	G5	3	0	ve, status unknown or not spec		x		x
Dichanthelium	Few-flowered Panicgrass	S4	G5	7	3			x		
* *Digitaria ischaemum*	Smooth Crabgrass	SNA	GNR		3	Introduced, Uncommon				x
Digitaria cognata	Fall Crabgrass	S1?	G5	3	5	Native, Rare	Yes	x	NHIC	
Dioscorea villosa	Wild Yam	S4	G4G5	5	0	Native, Common		x		x
Echinochloa muricata var. microstachya	Western Barnyard Grass	S5	G5T5	4	-5	Native, Rare				x
* *Echinochloa crus-galli*	Large Barnyard Grass	SNA	GNR		-3	Introduced, Common		x		x
Eleocharis erythropoda	Red-stemmed Spikerush	S5	G5	4	-5	Native, Common				x
* *Eleusine indica*	India Goosegrass	SNA	GNR		3	Introduced, Uncommon		x		
Elodea canadensis	Canada Waterweed	S5	G5	4	-5	Native, Rare		x		
Elymus virginicus	Virginia Wildrye	S5	G5	5	-3					x
Elymus canadensis	Canada Wildrye	S5	G5	8	3	Native, Rare	Yes	x		x
Elymus hystrix	Bottlebrush Grass	S5	G5	5	5	Native, Common		x		
* *Elymus repens*	Quackgrass	SNA	GNR		3	Introduced, Common		x		
Eragrostis spectabilis	Purple Lovegrass	S4	G5	6	5	Native, Rare	Yes	x		

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Erythronium americanum	Yellow Trout-lily	S5	G5			5	5	Native, Common		x		x
Festuca rubra	Red Fescue	S5	G5				3			x		
Fimbristylis autumnalis	Slender Fimbristylis	S4	G5			9	-3	Native, Rare		x		
* *Galanthus nivalis*	Common Snowdrop	SNA	GNR				5			x		
Glyceria striata	Fowl Mannagrass	S5	G5			3	-5	Native, Common		x		x
* *Hemerocallis fulva*	Orange Daylily	SNA	GNA				5	Introduced, Uncommon		x		x
Hordeum jubatum	Foxtail Barley	S5?	G5			0	0			x		
Hypoxis hirsuta	Eastern Yellow Stargrass	S2S3	G5			10	0	Native, Rare	Yes		NHIC	x
Iris versicolor	Harlequin Blue Flag	S5	G5			5	-5			x		x
Iris virginica	Southern Blue Flag	S5	G5			5	-5	Native, Common		x		x
Juncus acuminatus	Sharp-fruited Rush	S3	G5			6	-5	Native, Rare	Yes		NHIC	x
Juncus anthelatus	Greater Poverty Rush	S1	GNR			3	-3	Native, Rare	Yes		NHIC	
Juncus biflorus	Two-flowered Rush	S1	G5			10	-3	Native, Rare	Yes		NHIC	x
Juncus brachycarpus	Short-fruited Rush	S1	G4G5			10	-3	Native, Rare	Yes		NHIC	x
Juncus bufonius	Toad Rush	S5	G5			1	-3	Native, Rare				x
Juncus effusus	Soft Rush	S5	G5			4	-5					x
Juncus greenei	Greene's Rush	S3	G5			9	0	Native, Rare	Yes		NHIC	x
Juncus marginatus	Grass-leaved Rush	S3	G5			9	-3	Native, Rare	Yes		NHIC	x
Juncus nodosus	Knotted Rush	S5	G5			5	-5	Native, Uncommon				x
Juncus articulatus	Jointed Rush	S5	G5			5	-5	Native, Rare		x		
Juncus dudleyi	Dudley's Rush	S5	G5			1	-3	Native, Common		x		x
Juncus tenuis	Path Rush	S5	G5			0	0	Native, Common		x		x
Juncus torreyi	Torrey's Rush	S5	G5			3	-3	Native, Common		x		x
Leersia oryzoides	Rice Cutgrass	S5	G5			3	-5	Native, Common		x		x
Leersia virginica	White Cutgrass	S4	G5			6	-3	Native, Common		x		x
Lemna minor	Small Duckweed	S5?	G5			5	-5	Native, Common		x		x
Lilium michiganense	Michigan Lily	S4	G5			7	-3	Native, Common	Yes	x		x
Liparis liliifolia	Purple Twayblade	S2S3	G5	THR	THR	8	3	Native, Rare	Yes		NHIC	
Liparis loeselii	Loesel's Twayblade	S4S5	G5			5	-3	Native, Rare		x		
* *Lolium pratense*	Meadow Ryegrass	SNA	G5				3	Introduced, Rare				x
* *Lolium arundinaceum*	Tall Ryegrass	SNA	GNR				3	Introduced, Common		x		x
* *Lolium perenne*	Perennial Ryegrass	SNA	GNR				3	Introduced, Uncommon		x		
Maianthemum racemosum	Large False Solomon's Seal	S5	G5			4	3	Native, Common		x		x
Maianthemum stellatum	Star-flowered False Solomon's Seal	S5	G5			6	0	Native, Common		x		x
Milium effusum	Wood Millet	S4S5	G5			8	3	Native, Rare				x
* *Miscanthus sacchariflorus*	Amur Silvergrass	SNA	GNR				5	Introduced, Rare		x		
* *Muscari botryoides*	Common Grape-hyacinth	SNA	GNR				5			x		
* *Ornithogalum umbellatum*	Common Star-of-	SNA	G3G5				3	Introduced, Rare		x		
Panicum capillare	Common Panicgrass	S5	G5			0	0	Native, Common				x
* *Panicum dichotomiflorum*	Fall Panicgrass	SNA	G5				-3	Introduced, Common		x		x
Panicum flexile	Wiry Panicgrass	S4	G5			8	-3	Native, Rare		x		
Panicum virgatum	Old Switch Panicgrass	S4	G5			6	0	Native, Uncommon	Yes	x		x
Paspalum setaceum	Slender Paspalum	S2	G5			8	3	Native, Rare	Yes		NHIC	x
Phalaris arundinacea	Reed Canarygrass	S5	G5			0	-3	Native, Common		x		
* *Phleum pratense*	Common Timothy	SNA	GNR				3	Introduced, Common		x		x
Phragmites australis	Common Reed	S4?	G5			0	-3			x		x

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Platanthera leucophaea	Eastern Prairie Fringed	S2	G2G3	END	END	10	-3	Native, Rare	Yes			x
Platanthera lacera	Ragged Fringed Orchid	S4	G5			6	-3	Native, Uncommon		x		
Poa alsodes	Grove Bluegrass	S4	G4G5			7	0			x		
Poa palustris	Fowl Bluegrass	S5	G5			5	-3	Native, Rare				x
Poa pratensis	Kentucky Bluegrass	S5	G5			0	3					x
* *Poa annua*	Annual Bluegrass	SNA	GNR				3	Introduced, Common		x		
* *Poa bulbosa*	Bulbous Bluegrass	SNA	GNR				3			x		
* *Poa compressa*	Canada Bluegrass	SNA	GNR				3	Native, Common		x		x
Potamogeton richardsonii	Richardson's Pondweed	S5	G5			5	-5	Native, Rare		x		
* *Puschkinia scilloides*	Striped Squill	SNA	GNR							x		
Rhynchospora capitellata	Small-headed Beakrush	S4	G5			10	-5	Native, Rare		x		
Schizachyrium scoparium	Little Bluestem	S4	G5			7	3	Native, Uncommon	Yes	x		x
Schoenoplectus tabernaemontani	Soft-stemmed Bulrush	S5	G5			5	-5	Native, Uncommon		x		x
* *Scilla siberica*	Siberian Squill	SNA	GNR				5			x		
Scirpus atrovirens	Dark-green Bulrush	S5	G5			3	-5	Native, Common		x		
Scirpus cyperinus	Common Woolly Bulrush	S5	G5			4	-5	Native, Rare		x		x
Scirpus hattorianus	Mosquito Bulrush	S4	G5			6	-3	Native, Rare		x		
Scleria pauciflora	Few-flowered Nutrush	S1	G5			10	3	Native, Rare	Yes		NHIC	
Scleria triglomerata	Whip Nutrush	S1	G5			10	0	Native, Rare	Yes		NHIC	x
Scirpus pendulus	Hanging Bulrush	S5	G5			3	-5	Native, Common		x		x
* *Setaria pumila*	Yellow Foxtail	SNA	GNR				0	Introduced, Common				x
* *Setaria faberi*	Giant Foxtail	SNA	GNR				3	Introduced, Common		x		
* *Setaria viridis*	Green Foxtail	SNA	GNR				5	Introduced, Common		x		
Sisyrinchium albidum	White Blue-eyed-grass	S1	G5?			9	3	Native, Rare	Yes		NHIC	
Sisyrinchium angustifolium	Narrow-leaved Blue-eyed-	S4	G5			6	0	Native, Common		x		x
Smilax ecirrata	Upright Carrionflower	S3?	G5			6	5	Native, Common	Yes		NHIC	
Smilax illinoensis	Illinois Carrionflower	S2?	G4?			5	5	Native, Uncommon	Yes		NHIC	
Smilax herbacea	Herbaceous Carrionflower	S4?	G5			5	0	Native, Rare		x		x
Smilax lasioneura	Hairy-nerved Carrionflower	S4S5	G5			5	5	Native, Common		x		x
Smilax tamnoides	Bristly Greenbriar	S5	G5			6	0	Native, Common		x		x
Sorghastrum nutans	Yellow Indiangrass	S4	G5			8	3	Native, Rare	Yes	x		x
Sphenopholis obtusata	Prairie Wedgegrass	S1	G5			10	0	Native, Rare	Yes		NHIC	
Spiranthes	Great Plains Ladies'-tresses	S3?	G3G4			8	-3	Native, Rare	Yes		NHIC	x
Spiranthes incurva	Sphinx Ladies'-tresses	S5	GNR			5	-3	Native, Rare		x		
Spiranthes lucida	Shining Ladies'-tresses	S4	G4			9	-3	Native, Rare		x		
Spirodela polyrhiza	Great Duckweed	S5	G5			4	-5	Native, Rare		x		
Sporobolus compositus	Rough Dropseed	S4	G5			2	5	Native, Uncommon	Yes	x		x
Sporobolus michauxianus	Prairie Cordgrass	S4	G5			7	-3	Native, Uncommon	Yes	x		x
Streptopus lanceolatus	Rose Twisted-stalk	S5	G5			7	3	Native, Historical				x
Symplocarpus foetidus	Eastern Skunk Cabbage	S5	G5			7	-5	Native, Rare		x		
Tradescantia ohiensis	Ohio Spiderwort	S2	G5			10	3	Native, Rare	Yes		NHIC	x
Trichophorum clintonii	Clinton's Clubrush	S2S3	G4			10	3	Native, Rare	Yes		NHIC	
* *Tridens flavus*	Purpletop Tridens	SNA	G5				5	Introduced, Rare		x		
Trillium grandiflorum	White Trillium	S5	G5			5	3	Native, Common		x		
* *Typha angustifolia*	Narrow-leaved Cattail	SNA	G5				-5	Native, Common				x

Vegetation Table for Matchette and Malden (ONS2103A)

Typha x glauca	(Typha angustifolia X Typha latifolia)	SNA	GNA		-5	Hybrid		x
Typha latifolia	Broad-leaved Cattail	S5	G5	1	-5	Native, Uncommon	x	x
Uvularia sessilifolia	Sessile-leaved Bellwort	S4	G5	7	3	Native, Rare	x	x
Vallisneria americana	American Eelgrass	S5	G5	6	-5	Native, Rare	x	
Ceratodon purpureus	Fire Moss	S5	G5				x	
Entodon cladorrhizans	Flat-stemmed Entodon	S4	G5				x	
Plagiomnium cuspidatum	Woodsy Leafy Moss	S5	G5				x	
Asplenium platyneuron	Ebony Spleenwort	S4	G5	6	3	Native, Rare	x	
Athyrium filix-femina	Common Lady Fern	S5	G5	4	0		x	x
Botrypus virginianus	Rattlesnake Fern	S5	G5	5	3	Native, Common	x	
Claytosmunda claytoniana	Interrupted Fern	S5	G5	7	0	Native, Uncommon		x
Dryopteris carthusiana	Spinulose Wood Fern	S5	G5	5	-3	Native, Common	x	
Equisetum fluviatile	Water Horsetail	S5	G5	7	-5	Native, Rare		x
Equisetum palustre	Marsh Horsetail	S5	G5	10	-3	Unconfirmed Report		x
Equisetum pratense	Meadow Horsetail	S5	G5	8	-3			x
Equisetum variegatum	Variegated Scouring-rush	S5	G5	5	-3	Native, Rare		x
Equisetum arvense	Field Horsetail	S5	G5	0	0	Native, Common	x	x
Equisetum hyemale	Common Scouring-rush	S5	G5	2	0	Native, Common	x	x
Equisetum laevigatum	Smooth Scouring-rush	S4	G5	7	-3	Native, Rare	Yes x	
Matteuccia struthiopteris	Ostrich Fern	S5	G5	5	0	Native, Rare	x	x
Onoclea sensibilis	Sensitive Fern	S5	G5	4	-3	Native, Common	x	x
Osmunda regalis	Royal Fern	S5	G5	7	-5	Native, Uncommon	x	x
Osmundastrum	Cinnamon Fern	S5	G5	7	-3	Native, Uncommon	x	x
Pteridium aquilinum	Bracken Fern	S5	G5	2	3	Native, Uncommon	x	x
Pteridium aquilinum var. latiusculum	Eastern Bracken Fern	S5	G5T5	2	3	Native, Uncommon	x	x
Sceptridium dissectum	Cut-leaved Grapefern	S4S5	G5	6	0	Native, Common	x	
Thelypteris palustris	Marsh Fern	S5	G5	5	-3	Native, Common	x	x

Bird Table for Matchette and Malden (ONS2103A)

Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	ESA	SARA Schedule 1	Narrow Taxon Group	SOFIA Tallgrass Indicator Species	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28	Choquette& Valliant 2016
Botaurus lentiginosus	American Bittern	S4B	G5			birds		x			
Fulica americana	American Coot	S4B	G5	NAR		birds			OBBA		
Corvus brachyrhynchos	American Crow	S5B	G5			birds		x	OBBA		
Spinus tristis	American Goldfinch	S5B	G5			birds		x	OBBA	x	x
Falco sparverius	American Kestrel	S4	G5			birds		x			
Setophaga ruticilla	American Redstart	S5B	G5			birds		x	OBBA		
Turdus migratorius	American Robin	S5B	G5			birds		x	OBBA	x	x
Scolopax minor	American Woodcock	S4B	G5			birds		x	OBBA		
Haliaeetus leucocephalus	Bald Eagle	S2N,S4B	G5	SC		birds		x	OBBA, NHIC		
Icterus galbula	Baltimore Oriole	S4B	G5			birds		x	OBBA		x
Riparia riparia	Bank Swallow	S4B	G5	THR	THR	birds			NHIC		
Hirundo rustica	Barn Swallow	S5B	G5	THR	THR	birds		x	OBBA, NHIC	x	
Setophaga castanea	Bay-breasted Warbler	S5B	G5			birds		x			
Megaceryle alcyon	Belted Kingfisher	S4B	G5			birds		x	OBBA		
Mniotilta varia	Black-and-white Warbler	S5B	G5			birds		x			
Coccyzus erythropthalmus	Black-billed Cuckoo	S5B	G5			birds		x	OBBA		
Setophaga fusca	Blackburnian Warbler	S5B	G5			birds		x			
Poecile atricapillus	Black-capped Chickadee	S5	G5			birds		x	OBBA	x	x
Nycticorax nycticorax	Black-crowned Night-heron	S3B,S3N	G5			birds		x	OBBA		
Setophaga striata	Blackpoll Warbler	S4B	G5			birds		x			
Setophaga caerulescens	Black-throated Blue Warbler	S5B	G5			birds		x			
Setophaga virens	Black-throated Green Warbler	S5B	G5			birds		x			
Passerina caerulea	Blue Grosbeak	SNA	G5			birds		x			
Cyanocitta cristata	Blue Jay	S5	G5			birds		x	OBBA	x	
Polioptila caerulea	Blue-gray Gnatcatcher	S4B	G5			birds		x	OBBA		
Vireo solitarius	Blue-headed Vireo	S5B	G5			birds		x			
Anas discors	Blue-winged Teal	S4	G5			birds			OBBA		
Vermivora cyanoptera	Blue-winged Warbler	S4B	G5			birds		x			
Dolichonyx oryzivorus	Bobolink	S4B	G5	THR	THR	birds			NHIC, OBBA		
Chroicocephalus philadelphi	Bonaparte's Gull	S4B,S4N	G5			birds		x			
Buteo platypterus	Broad-winged Hawk	S5B	G5			birds		x			
Certhia americana	Brown Creeper	S5B	G5			birds		x			
Toxostoma rufum	Brown Thrasher	S4B	G5			birds		x	OBBA		
Molothrus ater	Brown-headed Cowbird	S4B	G5			birds		x	OBBA		
Bucephala albeola	Bufflehead	S4	G5			birds		x			
Branta hutchinsii	Cackling Goose	S4M	G5			birds		x			
Branta canadensis	Canada Goose	S5	G5			birds		x	OBBA		
Cardellina canadensis	Canada Warbler	S4B	G5	SC	THR	birds		x			
Setophaga tigrina	Cape May Warbler	S5B	G5			birds		x			
Thryothorus ludovicianus	Carolina Wren	S4	G5			birds		x	OBBA	x	x

Bird Table for Matchette and Malden (ONS2103A)

	Hydroprogne caspia	Caspian Tern	S3B	G5	NAR		birds	x			
	Bombycilla cedrorum	Cedar Waxwing	S5B	G5			birds	x	OBBA		
	Setophaga cerulea	Cerulean Warbler	S3B	G4	THR	END	birds	x			
	Setophaga pensylvanica	Chestnut-sided Warbler	S5B	G5			birds	x			
	Chaetura pelagica	Chimney Swift	S4B,S4N	G4G5	THR	THR	birds		OBBA		
	Spizella passerina	Chipping Sparrow	S5B	G5			birds	x	OBBA		x
	Petrochelidon pyrrhonota	Cliff Swallow	S4B	G5			birds		OBBA		
	Gallinula galeata	Common Gallinule	S4B	G5			birds		OBBA		
	Bucephala clangula	Common Goldeneye	S5	G5			birds	x			
	Quiscalus quiscula	Common Grackle	S5B	G5			birds	x	OBBA	x	x
	Gavia immer	Common Loon	S5B,S5N	G5	NAR		birds	x			
	Mergus merganser	Common Merganser	S5B,S5N	G5			birds	x			
	Chordeiles minor	Common Nighthawk	S4B	G5	SC	THR	birds	x	OBBA		
	Acanthis flammea	Common Redpoll	S4B	G5			birds	x			
	Geothlypis trichas	Common Yellowthroat	S5B	G5			birds	x	OBBA		
	Oporornis agilis	Connecticut Warbler	S4B	G4G5			birds	x			
	Accipiter cooperii	Cooper's Hawk	S4	G5	NAR		birds	x	OBBA		
	Junco hyemalis	Dark-eyed Junco	S5B	G5			birds	x			
	Spiza americana	Dickcissel	SNA	G5			birds		OBBA		
	Phalacrocorax auritus	Double-crested Cormorant	S5B	G5	NAR		birds	x			
	Picoides pubescens	Downy Woodpecker	S5	G5			birds		OBBA	x	
	Sialia sialis	Eastern Bluebird	S5B	G5	NAR		birds	x	OBBA		x
	Tyrannus tyrannus	Eastern Kingbird	S4B	G5			birds	x	OBBA		
	Sturnella magna	Eastern Meadowlark	S4B	G5	THR	THR	birds		OBBA, NHIC		
	Sayornis phoebe	Eastern Phoebe	S5B	G5			birds	x	OBBA		
	Megascops asio	Eastern Screech-Owl	S4	G5	NAR		birds	x	OBBA		
	Pipilo erythrophthalmus	Eastern Towhee	S4B	G5			birds	x	OBBA	x	
	Antrostomus vociferus	Eastern Whip-poor-will	S4B	G5	THR	THR	birds		NHIC		
	Contopus virens	Eastern Wood-pewee	S4B	G5	SC	SC	birds	x	OBBA, NHIC	x	
*	*Streptopelia decaocto*	Eurasian Collared-Dove	SNA	G5			birds		OBBA		
*	*Sturnus vulgaris*	European Starling	SNA	G5			birds	x	OBBA	x	x
	Coccothraustes vespertinus	Evening Grosbeak	S4B	G5			birds	x			
	Spizella pusilla	Field Sparrow	S4B	G5			birds	x	OBBA		
	Passerella iliaca	Fox Sparrow	S4B	G5			birds	x			
	Regulus satrapa	Golden-crowned Kinglet	S5B	G5			birds	x			
	Dumetella carolinensis	Gray Catbird	S4B	G5			birds	x	OBBA	x	x
	Catharus minimus	Gray-cheeked Thrush	S4B	G5			birds	x			
	Ardea herodias	Great Blue Heron	S4	G5			birds	x			
	Myiarchus crinitus	Great Crested Flycatcher	S4B	G5			birds	x	OBBA	x	
	Ardea alba	Great Egret	S2B	G5			birds	x			
	Bubo virginianus	Great Horned Owl	S4	G5			birds	x	OBBA		
	Aythya marila	Greater Scaup	S4	G5			birds	x			
	Anser albifrons	Greater White-fronted Goose	SNA	G5			birds	x			
	Tringa melanoleuca	Greater Yellowlegs	S4B,S4N	G5			birds	x			
	Butorides virescens	Green Heron	S4B	G5			birds	x	OBBA		
	Picoides villosus	Hairy Woodpecker	S5	G5			birds		OBBA		
	Catharus guttatus	Hermit Thrush	S5B	G5			birds	x			

Bird Table for Matchette and Malden (ONS2103A)

	Larus argentatus	Herring Gull	S5B,S5N	G5			birds		x			
	Acanthis hornemanni	Hoary Redpoll	SNA	G5			birds		x			
	Lophodytes cucullatus	Hooded Merganser	S5B,S5N	G5			birds		x	OBBA		
	Podiceps auritus	Horned Grebe	S1B,S4N	G5	SC	SC	birds		x			
	Eremophila alpestris	Horned Lark	S5B	G5			birds		x	OBBA		
*	*Haemorhous mexicanus*	House Finch	SNA	G5			birds		x	OBBA	x	
*	*Passer domesticus*	House Sparrow	SNA	G5			birds			OBBA	x	x
	Troglodytes aedon	House Wren	S5B	G5			birds		x	OBBA	x	x
	Passerina cyanea	Indigo Bunting	S4B	G5			birds		x	OBBA	x	
	Charadrius vociferus	Killdeer	S5B,S5N	G5			birds		x	OBBA	x	
	Rallus elegans	King Rail	S2B	G4	END	END	birds			OBBA		
	Ixobrychus exilis	Least Bittern	S4B	G4G5	THR	THR	birds		x	OBBA		
	Empidonax minimus	Least Flycatcher	S4B	G5			birds		x	OBBA		
	Aythya affinis	Lesser Scaup	S4	G5			birds		x			
	Melospiza lincolnii	Lincoln's Sparrow	S5B	G5			birds		x			
	Parkesia motacilla	Louisiana Waterthrush	S3B	G5	THR	SC	birds		x			
	Setophaga magnolia	Magnolia Warbler	S5B	G5			birds		x			
	Anas platyrhynchos	Mallard	S5	G5			birds		x	OBBA		
	Cistothorus palustris	Marsh Wren	S4B	G5			birds			OBBA		
	Falco columbarius	Merlin	S5B	G5	NAR		birds		x			
	Anas fulvigula	Mottled Duck	SNA	G4			birds					x
	Zenaida macroura	Mourning Dove	S5	G5			birds		x	OBBA	x	
*	*Cygnus olor*	Mute Swan	SNA	G5			birds		x	OBBA		
	Cardinalis cardinalis	Northern Cardinal	S5	G5			birds		x	OBBA	x	x
	Colaptes auratus	Northern Flicker	S4B	G5			birds		x	OBBA		
	Circus hudsonius	Northern Harrier	S4B	G5	NAR		birds		x			
	Mimus polyglottos	Northern Mockingbird	S4	G5			birds		x	OBBA		
	Setophaga americana	Northern Parula	S4B	G5			birds		x			
	Anas acuta	Northern Pintail	S5	G5			birds		x			
	Stelgidopteryx serripennis	Northern Rough-winged Swallow	S4B	G5			birds		x	OBBA	x	
	Contopus cooperi	Olive-sided Flycatcher	S4B	G4	SC	THR	birds		x			
	Icterus spurius	Orchard Oriole	S4B	G5			birds		x	OBBA		
	Pandion haliaetus	Osprey	S5B	G5			birds			OBBA		
	Seiurus aurocapilla	Ovenbird	S4B	G5			birds		x			
	Falco peregrinus	Peregrine Falcon	S3B	G4	SC	SC	birds		x			
	Podilymbus podiceps	Pied-billed Grebe	S4B,S4N	G5			birds			OBBA		
	Spinus pinus	Pine Siskin	S4B	G5			birds		x			
	Setophaga pinus	Pine Warbler	S5B	G5			birds		x			
	Protonotaria citrea	Prothonotary Warbler	S1B	G5	END	END	birds			OBBA		
	Progne subis	Purple Martin	S3S4B	G5			birds			OBBA	x	
	Mergus serrator	Red-breasted Merganser	S4B,S5N	G5			birds		x			
	Sitta canadensis	Red-breasted Nuthatch	S5	G5			birds		x			
	Vireo olivaceus	Red-eyed Vireo	S5B	G5			birds		x	OBBA	x	
	Aythya americana	Redhead	S2B,S4N	G5			birds		x	OBBA		
	Melanerpes erythrocephalus	Red-headed Woodpecker	S4B	G5	SC	THR	birds	Oak savannas. By no means restricted to this type.	x	NHIC OBBA		

Bird Table for Matchette and Malden (ONS2103A)

	Buteo lineatus	Red-shouldered Hawk	S4B	G5	NAR		birds		x				
	Buteo jamaicensis	Red-tailed Hawk	S5	G5	NAR		birds		x	OBBA			
	Agelaius phoeniceus	Red-winged Blackbird	S4	G5			birds		x	OBBA	X		X
	Larus delawarensis	Ring-billed Gull	S5B,S4N	G5			birds		x				
*	*Phasianus colchicus*	Ring-necked Pheasant	SNA	G5			birds		x				x
*	*Columba livia*	Rock Pigeon	SNA	G5			birds		x				x
	Pheucticus ludovicianus	Rose-breasted Grosbeak	S4B	G5			birds		x	OBBA			x
	Regulus calendula	Ruby-crowned Kinglet	S4B	G5			birds		x				
	Archilochus colubris	Ruby-throated Hummingbird	S5B	G5			birds		x	OBBA			x
	Euphagus carolinus	Rusty Blackbird	S4B	G4	NAR	SC	birds		x				
	Grus canadensis	Sandhill Crane	S5B	G5			birds			OBBA			
	Passerculus sandwichensis	Savannah Sparrow	S4B	G5			birds		x	OBBA			
	Piranga olivacea	Scarlet Tanager	S4B	G5			birds		x	OBBA			
	Accipiter striatus	Sharp-shinned Hawk	S5	G5	NAR		birds		x				
	Plectrophenax nivalis	Snow Bunting	SNA	G5			birds		x				
	Tringa solitaria	Solitary Sandpiper	S4B	G5			birds		x				
	Melospiza melodia	Song Sparrow	S5B	G5			birds		x	OBBA	x		
	Actitis macularius	Spotted Sandpiper	S5	G5			birds		x	OBBA			
	Catharus ustulatus	Swainson's Thrush	S4B	G5			birds		x				
	Melospiza georgiana	Swamp Sparrow	S5B	G5			birds			OBBA			
	Tachycineta bicolor	Tree Swallow	S4B	G5			birds		x	OBBA	x		x
	Baeolophus bicolor	Tufted Titmouse	S4	G5			birds	Oak savannas. Not restricted to this type, as it also occurs in open woodland and swampland habitats.	x	OBBA			
	Cathartes aura	Turkey Vulture	S5B	G5			birds		x	OBBA			
	Catharus fuscescens	Veery	S4B	G5			birds		x				
	Pooecetes gramineus	Vesper Sparrow	S4B	G5			birds			OBBA			
	Rallus limicola	Virginia Rail	S5B	G5			birds			OBBA			
	Vireo gilvus	Warbling Vireo	S5B	G5			birds		x	OBBA	x		
	Sitta carolinensis	White-breasted Nuthatch	S5	G5			birds		x	OBBA			
	Zonotrichia leucophrys	White-crowned Sparrow	S4B	G5			birds		x				
	Vireo griseus	White-eyed Vireo	S2B	G5			birds			NHIC			
	Zonotrichia albicollis	White-throated Sparrow	S5B	G5			birds		x				
	Zenaida asiatica	White-winged Dove	SNA	G5			birds			OBBA			x
	Meleagris gallopavo	Wild Turkey	S5	G5			birds		x	OBBA			
	Empidonax traillii	Willow Flycatcher	S5B	G5			birds		x	OBBA	x		
	Cardellina pusilla	Wilson's Warbler	S4B	G5			birds		x				
	Troglodytes hiemalis	Winter Wren	S5B	G5			birds		x				
	Aix sponsa	Wood Duck	S5	G5			birds		x	OBBA			
	Hylocichla mustelina	Wood Thrush	S4B	G4	SC	THR	birds		x	OBBA, NHIC	x		
	Helmitheros vermivorum	Worm-eating Warbler	SNA	G5			birds		x				
	Setophaga petechia	Yellow Warbler	S5B	G5			birds		x	OBBA			
	Empidonax flaviventris	Yellow-bellied Flycatcher	S5B	G5			birds		x				
	Sphyrapicus varius	Yellow-bellied Sapsucker	S5B	G5			birds		x				
	Coccyzus americanus	Yellow-billed Cuckoo	S4B	G5			birds		x	OBBA			

Bird Table for Matchette and Malden (ONS2103A)

Icteria virens	Yellow-breasted Chat	S1B	G5	END	END	birds	Oak savannas. Not restricted to this type, as it also occurs in brushy old fields and open woodlands of all types.		NHIC
Setophaga coronata	Yellow-rumped Warbler	S5B	G5			birds		x	
Molothrus ater		S4B	G5			birds			OBBA

Herptile Table for Matchette and Malden (ONS2103A)

	Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	ESA	SARA Schedule 1	Narrow Taxon Group	SOFIA Tallgrass Indicator Species	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28	Choquette& Valliant 2016
	Lithobates catesbeianus	American Bullfrog	S4	G5			amphibians		x	ORAA		x
	Anaxyrus americanus	American Toad	S5	G5			amphibians		x	x	x	x
	Lithobates clamitans	Green Frog	S5	G5			amphibians		x	ORAA		x
	Necturus maculosus	Mudpuppy	S4	G5	NAR		amphibians			ORAA		
	Lithobates pipiens	Northern Leopard Frog	S5	G5	NAR		amphibians		x	ORAA		x
	Pseudacris crucifer	Spring Peeper	S5	G5			amphibians			ORAA		
	Pseudacris triseriata pop. 2	Western Chorus Frog - Carolinian Population	S4	G5TNR	NAR		amphibians		x	x, ORAA		
	Thamnophis butleri	Butler's Gartersnake	S2	G4	END	END	reptiles	Tallgrass prairie. Primarily restricted to this type in Ontario. Some occurrences in other types.		ORAA, NHIC	x	x
	Plestiodon fasciatus pop. 1	Common Five-lined Skink (Carolinian population)	S2	G5T2	END	END	reptiles	Tallgrass prairie and oak savannas. Not entirely restricted to these types as it occurs extensively in Precambrian rock barrens along the southern edge of the shield.		ORAA, NHIC	x	
	Storeria dekayi	DeKay's Brownsnake	S5	G5	NAR		reptiles		x	ORAA		x
	Pantherophis gloydi pop. 2	Eastern Foxsnake (Carolinian population)	S2	G3TNR	END	END	reptiles	Oak savannas and tallgrass prairie. Not entirely restricted to these community types as it occurs commonly in SE Georgian Bay.		ORAA	x	x
	Thamnophis sirtalis sirtalis	Eastern Gartersnake	S5	G5T5			reptiles		x	ORAA		x
	Heterodon platirhinos	Eastern Hog-nosed Snake	S3	G5	THR	THR	reptiles	Oak savannas and sand barrens. Not entirely restricted to these types by any means.		ORAA		
	Sistrurus catenatus pop. 2	Massasauga (Carolinian population)	S1	G3TNR	END	END	reptiles	Tallgrass prairie. Not restricted to this type as it occurs in alvar woodland and grassland, and Precambrian rock barren types.		ORAA, NHIC	x	x
	Nerodia sipedon sipedon	Northern Watersnake	S5	G5T5	NAR		reptiles			ORAA		
	Regina septemvittata	Queensnake	S2	G5	END	END	reptiles			ORAA		
	Storeria occipitomaculata	Red-bellied Snake	S5	G5			reptiles		x	ORAA		x
	Opheodrys vernalis	Smooth Greensnake	S4	G5			reptiles			ORAA		
	Emydoidea blandingii	Blanding's Turtle	S3	G4	THR	THR	turtles		x	ORAA, NHIC	x	x
	Sternotherus odoratus	Eastern Musk Turtle	S3	G5	SC	SC	turtles			ORAA, NHIC		x
	Chrysemys picta marginata	Midland Painted Turtle	S4	G5T5			turtles		x	ORAA, NHIC		x
	Graptemys geographica	Northern Map Turtle	S3	G5	SC	SC	turtles			ORAA, NHIC		x
*	*Trachemys scripta*	Pond Slider	SNA	G5			turtles		x	ORAA		x

Herptile Table for Matchette and Malden (ONS2103A)

Chelydra serpentina	Snapping Turtle	S4	G5	SC	SC	turtles	x	ORAA, NHIC	x	x
Apalone spinifera	Spiny Softshell	S2	G5	END	THR	turtles		NHIC		

Mammal Table for Matchette and Malden (ONS2103A)

	Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	ESA	SARA Schedule 1	Narrow Taxon Group	SOFIA Tallgrass Indicator Species	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28	Choquette& Valliant 2016
	Neovison vison	American Mink	S4	G5			mammals		x			
	Castor canadensis	Beaver	S5	G5			mammals		x			
	Eptesicus fuscus	Big Brown Bat	S4	G5			mammals		x			
*	*Rattus rattus*	Black Rat	SNA	G5			mammals		x			
	Canis latrans	Coyote	S5	G5			mammals		x		x	
	Peromyscus maniculatus	Deer Mouse	S5	G5			mammals		x			
	Tamias striatus	Eastern Chipmunk	S5	G5			mammals		x		x	x
	Sylvilagus floridanus	Eastern Cottontail	S5	G5			mammals		x		x	x
	Sciurus carolinensis	Eastern Gray Squirrel	S5	G5			mammals		x			x
	Lasiurus borealis	Eastern Red Bat	S4	G3G4			mammals		x			
	mustela erminea	Ermine	S5	G5			mammals				x	
	Urocyon cinereoargenteus	Gray Fox	S1	G5	THR	THR	mammals				x	
	Lasiurus cinereus	Hoary Bat	S4	G3G4			mammals			x		
	Myotis lucifugus	Little Brown Myotis	S3	G3	END	END	mammals			x		
	Microtus pennsylvanicus	Meadow Vole	S5	G5			mammals		x		x	x
	Ondatra zibethicus	Muskrat	S5	G5			mammals		x			x
	Procyon lotor	Northern Raccoon	S5	G5			mammals		x		x	x
	Blarina brevicauda	Northern Short-tailed Shrew	S5	G5			mammals		x		x	x
*	*Rattus norvegicus*	Norway Rat	SNA	G5			mammals		x			
	vulpes vulpes	Red Fox	S5	G5			mammals				x	
	Lasionycteris noctivagans	Silver-haired Bat	S4	G3G4			mammals			x		
	Mephitis mephitis	Striped Skunk	S5	G5			mammals		x		x	x
	Didelphis virginiana	Virginia Opossum	S4	G5			mammals		x			x
	Peromyscus leucopus	White-footed Mouse	S5	G5			mammals		x		x	x
	Odocoileus virginianus	White-tailed Deer	S5	G5			mammals		x		x	
	Marmota monax	Woodchuck	S5	G5			mammals		x			x

Fish Table for Matchette and Malden (ONS2103A)

	Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	ESA	SARA Schedule 1	Narrow Taxon Group	SOFIA Tallgrass Indicator Species	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28	Choquette& Valliant 2016
	Ichthyomyzon castaneus pop	Chestnut Lamprey - Great Lakes - Upper St. Lawrence populations	SU	G4TU	DD		Lampreys			NHIC		
	Lepomis macrochirus	Bluegill	S5	G5			ray-finned fishes		x			
	Amia calva	Bowfin	S4	G5			ray-finned fishes		x			
	Culaea inconstans	Brook Stickleback	S5	G5			ray-finned fishes		x			
	Ameiurus nebulosus	Brown Bullhead	S5	G5			ray-finned fishes		x			
	Umbra limi	Central Mudminnow	S5	G5			ray-finned fishes		x			
	Ictalurus punctatus	Channel Catfish	S4	G5			ray-finned fishes		x			
	Percina copelandi	Channel Darter	S2	G4	THR		ray-finned fishes			NHIC		
*	*Cyprinus carpio*	Common Carp	SNA	G5			ray-finned fishes		x			
	Semotilus atromaculatus	Creek Chub	S5	G5			ray-finned fishes		x			
	Pimephales promelas	Fathead Minnow	S5	G5			ray-finned fishes		x			
	Aplodinotus grunniens	Freshwater Drum	S5	G5			ray-finned fishes		x			
	Dorosoma cepedianum	Gizzard Shad	S4	G5			ray-finned fishes		x			
	Notemigonus crysoleucas	Golden Shiner	S5	G5			ray-finned fishes		x			
*	*Carassius auratus*	Goldfish	SNA	G5			ray-finned fishes		x			
	Lepomis cyanellus	Green Sunfish	S4	G5	NAR		ray-finned fishes		x			
	Nocomis biguttatus	Hornyhead Chub	S4	G5	NAR		ray-finned fishes		x			
	Micropterus salmoides	Largemouth Bass	S5	G5			ray-finned fishes		x			
	Percina caprodes	Logperch	S5	G5			ray-finned fishes		x			
	Lepisosteus osseus	Longnose Gar	S4	G5			ray-finned fishes		x			
	Noturus stigmosus	Northern Madtom	S1	G3	END	END	ray-finned fishes			NHIC		
	Esox lucius	Northern Pike	S5	G5			ray-finned fishes		x			
	Lepomis peltastes pop. 2	Northern Sunfish (Great Lakes - Upper St. Lawrence populations)	S3	G5TNR	SC		ray-finned fishes			NHIC		
	Notropis anogenus	Pugnose Shiner	S2	G3	THR	END	ray-finned fishes			NHIC		
	Lepomis gibbosus	Pumpkinseed	S5	G5			ray-finned fishes		x			
	Ambloplites rupestris	Rock Bass	S5	G5			ray-finned fishes		x			
*	*Neogobius melanostomus*	Round Goby	SNA	G5			ray-finned fishes		x			
	Moxostoma macrolepidotun	Shorthead Redhorse	S5	G5			ray-finned fishes		x			
	Micropterus dolomieu	Smallmouth Bass	S5	G5			ray-finned fishes		x			
	Minytrema melanops	Spotted Sucker	S2	G5	SC	SC	ray-finned fishes			NHIC		
	Morone chrysops	White Bass	S4	G5			ray-finned fishes		x			
*	*Morone americana*	White Perch	SNA	G5			ray-finned fishes		x			
	Catostomus commersonii	White Sucker	S5	G5			ray-finned fishes		x			
	Perca flavescens	Yellow Perch	S5	G5			ray-finned fishes		x			

Invertebrates arthropods Table for Matchette and Malden (ONS2103A)

	Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	SARO	SARA Schedule 1	Narrow Taxon Group	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28
	Scutigera coleoptrata	A Centipede	SNA	GNR			centipedes	x		
	Cambarus robustus	Big Water Crayfish	S4	G5			crustaceans	x		
	Creaserinus fodiens	Digger Crayfish	S3	G5			crustaceans	x		
	Faxonius immunis	Calico Crayfish	S4	G5			crustaceans	x		
	Faxonius virilis	Virile Crayfish	S4	G5			crustaceans	x		
	Lacunicambarus polychromatu	Paintedhand Mudbug	S1S2	G5			crustaceans	x	NHIC	
	Acalymma vittatum	A Leaf Beetle	SNR	G5			insects	x		
	Acanthocinus pusillus	A Longhorned Beetle	SNR	G5			insects	x		
	Achalarus lyciades	Hoary Edge	S1	G5			insects		OBA	
	Achyra rantalis	Garden Webworm Moth	SNR	GNR			insects	x		
	Acleris forsskaleana		SNR	GNR			insects	x		
	Acmaeodera pulchella	A Metallic Wood-boring Beetle	SNR	GNR			insects	x		
	Acmaeodera tubulus	A Metallic Wood-boring Beetle	SNR	GNR			insects	x		
	Acrobasis angusella		SNR	GNR			insects	x		
	Acronicta afflicta	Afflicted Dagger Moth	S1?	G5			insects	x		
	Acronicta americana	American Dagger Moth	S5	G5			insects	x		
	Acronicta hasta		S4?	G5			insects	x		
	Acronicta oblinita	Smeared Dagger Moth	S5	G5			insects	x		
	Acronicta superans	Splendid Dagger Moth	S4?	G5			insects	x		
	Actias luna	Luna Moth	S4	G5			insects	x		
	Aeolus mellillus	A Click Beetle	SNR	GNR			insects	x		
	Aeshna constricta	Lance-tipped Darner	S5	G5			insects	x		
	Aeshna umbrosa	Shadow Darner	S5	G5			insects	x		
	Aeshna verticalis	Green-striped Darner	S3	G5			insects	x		
	Agallia quadripunctata	Four-spotted Clover Leafhopper	SNR	GNR			insects	x		
	Agalliopsis ancistra		SNR	GNR			insects	x		
	Agapostemon virescens	Bicoloured Sweat Bee	S5	G5			insects	x		
	Aglais milberti	Milbert's Tortoiseshell	S5	G5			insects	x	OBA	
	Aglossa caprealis		SNR	G5			insects	x		
	Aglossa cuprina	Grease Moth	SNR	G4G5			insects	x		
	Agnorisma badinodis	Pale-banded Dart	SNR	G5			insects	x		
	Agonum cupripenne	Ground Beetle	SNR	G5			insects	x		
	Agonum decorum	Ground Beetle	SNR	G5			insects	x		
*	*Agrilus cyanescens*	A Metallic Wood-boring Beetle	SNA	GNR			insects	x		
	Agriphila vulgivagellus	Vagabond Crambus	SNR	GNR			insects	x		
	Agrotis ipsilon	Ipsilon Dart	S5	G5			insects	x		
	Alaus oculatus	A Click Beetle	SNR	GNR			insects	x		
	Albuna fraxini		SNR	GNR			insects	x		
	Allograpta obliqua		S4	GNR			insects	x		
	Allonemobius maculatus	Larger Spotted Ground Cricket	SU	G5			insects	x		
	Alsophila pometaria	Fall Cankerworm Moth	SNR	G5			insects	x		
	Alypia octomaculata	Eight-spotted Forester Moth	S5	G5			insects	x		

Invertebrates arthropods Table for Matchette and Malden (ONS2103A)

Amblycorypha oblongifolia	Oblong-winged Katydid	S4	GNR	insects	x			
Amblyscirtes hegon	Pepper and Salt Skipper	S4	G5	insects		OBA		
Amblysellus curtisii		SNR	GNR	insects	x			
Amorpha juglandis	Walnut Sphinx	S4?	G5	insects	x			
Amphasia interstitialis	Ground Beetle	SNR	G5	insects	x			
Amphion floridensis	Nessus Sphinx	S4	G5	insects	x			
Amphipoea americana		S5	G5	insects	x			
Amphipyra pyramidoides	Copper Underwing	SNR	G5	insects	x			
Anageshna primordialis		SNR	GNR	insects	x			
Anania funebris		SNR	GNR	insects	x			
Anatrytone logan	Delaware Skipper	S4	G5	insects	x	OBA		
Anavitrinella pampinaria	Common Gray Moth	S4S5	G5	insects	x			
Anax junius	Common Green Darner	S5	G5	insects	x			
Anaxipha exigua	Say's Winged Bush Cricket	S4	GNR	insects	x		x	
Ancistrocerus antilope		S5?	G5	insects	x	x		
Ancistrocerus gazella		SNA	GNR	insects	x	x		
Ancyloxypha numitor	Least Skipper	S5	G5	insects	x	x		
Andrena nubecula	Cloudy-winged Miner Bee	S3S4	GNR	insects	x	x		
Andrena vicina	Neighbouring Miner Bee	S5	G5	insects	x	x		
Antaeotricha leucillana		SNR	GNR	insects	x			
Antepione thisoaria	Variable Antepione	SNR	G5	insects	x			
Antheraea polyphemus	Polyphemus Moth	S5	G5	insects	x			
Anthidium manicatum	Wool Carder Bee	SNA	G5	insects	x			
Anthophora terminalis	Red-tipped Digger Bee	S5	G5	insects	x			
Anthrax argyropygus		SH	GNR	insects	x	NHIC		
Anthrax irroratus	Speckled Coal Bee Fly	S4S5	G5	insects	x			
Anthrax pluto	Wealthy Coal Bee Fly	SU	GNR	insects	x			
Anticarsia gemmatalis	Velvetbean Caterpillar Moth	SNA	G5	insects	x			
Apantesis phalerata	Harnessed Moth	S4?	G5	insects	x			
Apatelodes torrefacta	Spotted Apatelodes	SNR	G5	insects	x			
* *Aphrophora alni*	European Alder Spittlebug	SNA	GNR	insects	x			
Aphrophora quadrinotata	Four-spotted Spittlebug	S4	GNR	insects	x			
Apis mellifera	European Honey Bee	SNA	GNR	insects	x			
Apoda y-inversum		S5	G5	insects	x			
Archilestes grandis	Great Spreadwing	S1	G5	insects		NHIC		
Argia apicalis	Blue-fronted Dancer	S4	G5	insects	x			
Arigomphus villosipes	Unicorn Clubtail	S3	G5	insects	x			
Arphia sulphurea	Sulphur-winged Grasshopper	S4	G5	insects	x			
Ascalapha odorata	Black Witch Moth	SNA	G5	insects	x			
Asterocampa celtis	Hackberry Emperor	S3	G5	insects	x	OBA		
Asterocampa clyton	Tawny Emperor	S3	G5	insects		OBA		
Atalopedes campestris	Sachem	SNA	G5	insects	x	OBA		
Athetis tarda	The Slowpoke	SNR	G5	insects	x			
Athysanus argentarius		SNR	GNR	insects	x			
Atranus pubescens	Ground Beetle	SNR	GNR	insects	x			
Atteva aurea	Ailanthus Webworm Moth	SNR	G5	insects	x			
Augochlora pura	Pure Sweat Bee	S5	G5	insects	x			

Invertebrates arthropods Table for Matchette and Malden (ONS2103A)

	Autographa precationis	Common Looper Moth	S5	G5			insects	x	
	Automeris io	Io Moth	S5	G5			insects	x	
	Baliosus nervosus	A Leaf Beetle	SNR	G5			insects	x	
	Battus philenor	Pipevine Swallowtail	SNA	G5			insects		OBA
	Besma quercivoraria	Oak Besma	SNR	G5			insects	x	
*	*Bitoma crenata*	A Wedge-shaped Beetle	SNA	GNR			insects	x	
	Bittacus strigosus	Thin Hangingfly	SU	GNR			insects	x	
	Blastobasis glandulella	Acorn Moth	SNR	GNR			insects	x	
	Blepharida rhois	A Leaf Beetle	SNR	GNR			insects	x	
	Boloria bellona	Meadow Fritillary	S5	G5			insects		OBA
	Boloria selene	Silver-bordered Fritillary	S5	G5			insects		OBA
	Bombus affinis	Rusty-patched Bumble Bee	S1	G2	END	END	insects		NHIC
	Bombus bimaculatus	Two-spotted Bumble Bee	S5	G5			insects	x	
	Bombus citrinus	Lemon Cuckoo Bumble Bee	S3S4	G4			insects	x	
	Bombus fervidus	Golden Northern Bumble Bee	S3S4	G3G4			insects	x	
	Bombus griseocollis	Brown-belted Bumble Bee	S5	G5			insects	x	
	Bombus impatiens	Common Eastern Bumble Bee	S5	G5			insects	x	
	Bombylius major	Large Bee Fly	S5?	G5			insects	x	
	Brachiacantha ursina	A Ladybird Beetle	SNR	G5			insects	x	
	Brachyleptura rubrica	A Longhorned Beetle	SNR	G5			insects	x	
	Bruchomorpha oculata	A Piglet Bug	SNR	GNR			insects	x	
	Caenurgina erechtea	Forage Looper Moth	S4S5	G5			insects	x	
	Calleida punctata	Ground Beetle	SNR	G5			insects	x	
	Calligrapha bidenticola	A Leaf Beetle	SNR	G5			insects	x	
	Calligrapha multipunctata	A Leaf Beetle	SNR	G5			insects	x	
	Callopistria cordata	Silver-spotted Fern Moth	SNR	G5			insects	x	
	Callosamia promethea	Promethea Moth	S4	G5			insects	x	
	Calomycterus setarius	A Weevil	SNR	GNR			insects	x	
	Calopteron reticulatum	A Net-winged Beetle	SNR	GNR			insects	x	
	Calopteron terminale	A Net-winged Beetle	SNR	GNR			insects	x	
	Calopteryx maculata	Ebony Jewelwing	S5	G5			insects	x	
	Calyptra canadensis	Canadian Owlet	SNR	G5			insects	x	
	Campaea perlata	Pale Beauty Moth	S5	G5			insects	x	
	Camponotus pennsylvanicus	Eastern Black Carpenter Ant	S5	G5			insects	x	
	Camponotus subbarbatus	Lesser Bearded Carpenter Ant	SU	GNR			insects	x	
	Cantura jucunda		SNR	GNR			insects	x	
*	*Cassida rubiginosa*	Thistle Tortoise Beetle	SNA	GNR			insects	x	
	Catocala blandula	Charming Underwing	S5	G5			insects	x	
	Catocala cerogama	Yellow-banded Underwing	S5	G5			insects	x	
	Catocala grynea	Woody Underwing	S5	G5			insects	x	
	Catocala ilia	Ilia Underwing	S5	G5			insects	x	
	Catocala minuta	Little Underwing	SNR	G5			insects	x	
	Catocala palaeogama	Oldwife Underwing	SNR	G5			insects	x	
	Catocala parta	Mother Underwing	S5	G5			insects	x	
	Catocala piatrix	The Penitent	S4	G5			insects	x	
	Catocala relicta	White Underwing Moth	S5	G5			insects	x	
	Catocala retecta	Yellow-gray Underwing	SNR	G5			insects	x	

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	Catocala serena	Serene Underwing	SH	G5	insects	x	NHIC	
	Catocala ultronia	Ultronia Underwing Moth	S5	G5	insects	x		
	Catocala unijuga	Once-married Underwing	S5	G5	insects	x		
	Celastrina lucia	Northern Spring Azure	S5	G5	insects		OBA	
	Celastrina neglecta	Summer Azure	S5	G5	insects	x	OBA	
	Celithemis elisa	Calico Pennant	S5	G5	insects	x		
	Celithemis eponina	Halloween Pennant	S4	G5	insects	x		x
	Celypha cespitana		SNR	GNR	insects	x		
	Ceratomia catalpae	Catalpa Sphinx	SNA	G5	insects	x		
	Cercyonis pegala	Common Wood-Nymph	S5	G5	insects	x	OBA	
	Cerma cerintha	Tufted Bird-dropping Moth	SNR	G5	insects	x		
	Chalcosyrphus nemorum		S4	GNR	insects	x		
	Chauliognathus pensylvanicus	A Soldier Beetle	SNR	G5	insects	x		
	Chelymorpha cassidea	A Leaf Beetle	SNR	GNR	insects	x		
	Chilocorus stigma	A Ladybird Beetle	SNR	G5	insects	x		
	Chionodes mediofuscella		SNR	GNR	insects	x		
	Chlaenius tricolor	Ground Beetle	SNR	G5	insects	x		
	Chloealtis conspersa	Sprinkled Grasshopper	S4	G5	insects	x		
	Chlorochlamys chloroleucaria	Blackberry Looper Moth	SNR	G5	insects	x		
	Chlosyne nycteis	Silvery Checkerspot	S5	G5	insects	x	OBA	
	Choristoneura rosaceana	Oblique-banded Leafroller Moth	SNR	G5	insects	x		
	Chortophaga viridifasciata	Green-striped Grasshopper	S4	G5	insects	x		
	Chrysochus auratus	A Leaf Beetle	SNR	G5	insects	x		
	Chrysopa nigricornis	Black-horned Green Lacewing	SU	GNR	insects	x		
	Chrysopa oculata	Golden-eyed Green Lacewing	S5	G5	insects	x		
	Chrysops pikei	Pike's Deer Fly	SU	GNR	insects	x		
	Chrysoteuchia topiarius		SNR	GNR	insects	x		
	Chrysotoxum pubescens		S4	GNR	insects	x		
	Chytolita morbidalis	Morbid Owlet	SNR	G5	insects	x		
	Cicindela duodecimguttata	A Tiger Beetle	S5	G5	insects	x		
	Cicindela formosa	A Tiger Beetle	S4	G5	insects	x		
	Cicindela punctulata	A Tiger Beetle	S5	G5	insects	x		
	Cicindela sexguttata	A Tiger Beetle	S5	G5	insects	x		
	Cisseps fulvicollis	Yellow-collared Scape Moth	SNR	G5	insects	x		
	Clastoptera obtusa	Alder Spittle Bug	S5	G5	insects	x		
	Clastoptera proteus	Dogwood Spittle Bug	S5	G5	insects	x		
	Clepsis clemensiana		SNR	GNR	insects	x		
	Climaciella brunnea	Wasp Mantidfly	S4	GNR	insects	x		
	Clostera albosigma	Sigmoid Prominent Moth	S5	G5	insects	x		
	Clytus ruricola	A Longhorned Beetle	SNR	G5	insects	x		
	Cnaemidophorus rhododactyla		SNR	GNR	insects	x		
*	*Coccinella septempunctata*	Seven-spotted Ladybird Beetle	SNA	GNR	insects	x		
	Coenonympha tullia	Common Ringlet	S5	G5	insects	x	OBA	
	Coleomegilla maculata	Spotted Ladybird Beetle	S5	G5	insects	x		
	Colias eurytheme	Orange Sulphur	S5	G5	insects	x	OBA	
	Colias philodice	Clouded Sulphur	S5	G5	insects	x	OBA	
	Colladonus clitellarius	Sadleback Leafhopper	SNR	GNR	insects	x		

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	Colletes inaequalis	Common Eastern Plasterer Bee	S5	G5			insects	x		
	Colliuris pensylvanica	Ground Beetle	SNR	GNR			insects	x		
	Conocephalus brevipennis	Short-winged Meadow Katydid	S4	G5			insects	x		
	Conocephalus nigropleurum	Black-sided Meadow Katydid	S3S4	GNR			insects	x		
	Conotrachelus nenuphar	A Weevil	SNR	G5			insects	x		
	Copris fricator	A Scarab Beetle	SNR	GNR			insects	x		
	Coquillettidia perturbans	Cattail Mosquito	S5	G5			insects	x		
	Coryphista meadii	Barberry Geometer	SNR	G5			insects	x		
	Cosmia calami	American Dun-bar	SNR	G5			insects	x		
	Cosmotettix delector		SNR	GNR			insects	x		
	Costaconvexa centrostrigaria	Bent-line Carpet	SNR	G5			insects	x		
	Crambidia pallida	Pale Lichen Moth	SNR	G5			insects	x		
	Crambus agitatellus		SNR	GNR			insects	x		
	Crambus laqueatellus		SNR	GNR			insects	x		
	Crambus praefectellus		SNR	GNR			insects	x		
	Crambus saltuellus		SNR	GNR			insects	x		
*	*Crioceris asparagi*	Common Asparagus Beetle	SNA	GNR			insects	x		
*	*Crioceris duodecimpunctata*	Spotted Asparagus Beetle	SNA	GNR			insects	x		
	Crocidophora tuberculalis		SNR	GNR			insects	x		
	Cryptocephalus venustus	A Leaf Beetle	SNR	G5			insects	x		
	Ctenicera pyrrhos	A Click Beetle	SNR	GNR			insects	x		
	Ctenucha virginica	Virginia Ctenucha Moth	S5	G5			insects	x		
	Cucujus clavipes	A Flat Bark Beetle	SNR	G5			insects	x		
	Cucullia asteroides	The Asteroid	S4	G5			insects	x		
	Cucullia convexipennis	Brown-bordered Cucullia	S4	G5			insects	x		
	Cupido comyntas	Eastern Tailed Blue	S5	G5			insects	x	OBA	
	Cycloneda munda	Immaculate Ladybird Beetle	SNR	G5			insects	x		
	Cycnia tenera	Delicate Cycnia	S4	G5			insects	x		
	Cydia latiferreana		SNR	GNR			insects	x		
	Cydia pomonella	Codling Moth	SNR	GNR			insects	x		
	Cymatodera undulata	A Checkered Beetle	SNR	GNR			insects	x		
	Cyrtepistomus castaneus	A Weevil	SNR	GNR			insects	x		
	Danaus plexippus	Monarch	S2N,S4B	G4	SC	SC	insects	x	OBA	
	Darapsa myron	Hog Sphinx	SU	G5			insects	x		
	Dargida diffusa	Wheat Head Armyworm Moth	S5	G5			insects	x		
	Datana integerrima	Walnut Caterpillar Moth	SNR	G5			insects	x		
	Datana perspicua	Spotted Datana	SNR	G5			insects	x		
	Deloyala guttata	A Leaf Beetle	SNR	G5			insects	x		
	Dendroides canadensis	A Fire-colored Beetle	SNR	G5			insects	x		
	Derospidea brevicollis	A Leaf Beetle	SNR	GNR			insects	x		
	Desmia funeralis	Grape Leaffolder Moth	SNR	G5			insects	x		
	Diabrotica cristata	A Leaf Beetle	SNR	GNR			insects	x		
	Diabrotica undecimpunctata	A Leaf Beetle	SNR	G5			insects	x		
	Diapheromera femorata	Northern Walkingstick	S4	G4G5			insects	x		
	Dichomeris bilobella		SNR	GNR			insects	x		
	Dichomeris ochripalpella		SNR	GNR			insects	x		
	Dichromorpha viridis	Short-winged Green Grasshopper	S2	G5			insects		NHIC	x

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Dicromantispa sayi	Say's Mantidfly	SU	GNR	insects	x		
Dicymolomia julianalis		SNR	GNR	insects	x		
Dissosteira carolina	Carolina Grasshopper	S4S5	G5	insects	x		
Dolichovespula arenaria		S4	G5	insects	x		
Dolichovespula maculata		S4	G5	insects	x		
Dorcus parallelus	A Stag Beetle	SNR	GNR	insects	x		
Draeculacephala antica		SNR	GNR	insects	x		
Draeculacephala mollipes		SNR	GNR	insects	x		
Draeculacephala robinsoni		SNR	GNR	insects	x		
Dryocampa rubicunda	Rosy Maple Moth	S5	G5	insects	x		
Dypterygia rozmani	American Bird's-wing Moth	SNR	G5	insects	x		
Dyspteris abortivaria	The Bad-wing	SNR	G5	insects	x		
Dytiscus verticalis	A Predaceous Diving Beetle	SNR	GNR	insects	x		
Eburia quadrigeminata	A Longhorned Beetle	SNR	GNR	insects	x		
Ecdytolopha insiticiana	Locust Twig Borer Moth	SNR	GNR	insects	x		
Elater abruptus	A Click Beetle	SNR	GNR	insects	x		
Elophila icciusalis		SNR	GNR	insects	x		
Elophila obliteralis		SNR	GNR	insects	x		
Emmelina monodactyla		SNR	GNR	insects	x		
Empoasca fabae	Potatoe Leafhopper	SNR	GNR	insects	x		
Enallagma aspersum	Azure Bluet	S3	G5	insects	x	NHIC	x
Enallagma basidens	Double-striped Bluet	S3	G5	insects		NHIC	x
Enallagma carunculatum	Tule Bluet	S5	G5	insects	x		
Enallagma civile	Familiar Bluet	S5	G5	insects	x		
Enallagma exsulans	Stream Bluet	S5	G5	insects	x		
Enallagma geminatum	Skimming Bluet	S4	G5	insects	x		
Enallagma signatum	Orange Bluet	S4	G5	insects	x		
Enallagma vesperum	Vesper Bluet	S4	G5	insects	x		
Ennomos magnaria	Maple Spanworm Moth	S5	G5	insects	x		
Enoclerus nigripes	A Checkered Beetle	SNR	G5	insects	x		
Epargyreus clarus	Silver-spotted Skipper	S4	G5	insects	x	OBA	
Epiaeschna heros	Swamp Darner	S2S3	G5	insects	x	NHIC	x
Epiblema otiosana	Bidens Borer Moth	SNR	GNR	insects	x		
Epicallima argenticinctella		SNR	GNR	insects	x		
Epicauta cinerea	A Blister Beetle	SNR	GNR	insects	x		
Epicauta pensylvanica	A Blister Beetle	SNR	G5	insects	x		
Epicauta vittata	A Blister Beetle	SNR	GNR	insects	x		
Epimecis hortaria	Tulip-tree Beauty	SNR	G5	insects	x		
Epinotia lindana		SNR	GNR	insects	x		
Epitheca cynosura	Common Baskettail	S5	G5	insects	x		
Epitheca princeps	Prince Baskettail	S5	G5	insects	x		
Eristalis dimidiata		S5	G5	insects	x		
Eristalis flavipes		S5	G5	insects	x		
Eristalis tenax		SNA	GNR	insects	x		
Eristalis transversa		S5	G5	insects	x		
Erynnis baptisiae	Wild Indigo Duskywing	S4	G5	insects	x	OBA	
Erynnis brizo	Sleepy Duskywing	S1	G5	insects		NHIC, OBA	

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Erynnis funeralis	Funereal Duskywing	SNA	G5		insects		OBA	
Erynnis horatius	Horace's Duskywing	SNA	G5		insects	x	OBA	
Erynnis icelus	Dreamy Duskywing	S5	G5		insects	x	OBA	
Erynnis juvenalis	Juvenal's Duskywing	S5	G5		insects	x	OBA	
Erynnis lucilius	Columbine Duskywing	S4	G5		insects	x	OBA	
Erynnis martialis	Mottled Duskywing	S2	G3	END	insects		OBA	
Erythemis simplicicollis	Eastern Pondhawk	S5	G5		insects	x		
Erythroneura calycula		SNR	GNR		insects	x		
Erythroneura elegans		SNR	GNR		insects	x		
Erythroneura rubra		SNR	GNR		insects	x		
Erythroneura rubrella		SNR	GNR		insects	x		
Erythroneura tricincta	Threebanded Grape Leafhopper	SNR	GNR		insects	x		
Estigmene acrea	Salt Marsh Moth	S5	G5		insects	x		
Euchaetes egle	Milkweed Tussock Moth	S4?	G5		insects	x		
Euchlaena serrata	The Saw-wing	SNR	G5		insects	x		
Euclea delphinii	Spiny Oak-slug Moth	SNR	G5		insects	x		
Euclidia cuspidea	Toothed Somberwing	S5	G5		insects	x		
Eucosma ochrocephala		SNR	GNR		insects	x		
Eucosma ornatula		SNR	GNR		insects	x		
Eucosma parmatana		SNR	GNR		insects	x		
Eucosma raracana		SNR	GNR		insects	x		
Eudeilinia herminiata	Northern Eudeilinea	S4?	G5		insects	x		
Euderces picipes	A Longhorned Beetle	SNR	G5		insects	x		
Eudryas grata	Beautiful Wood-nymph	SNR	G5		insects	x		
Eudryas unio	Pearly Wood-nymph	SNR	G5		insects	x		
Eugonobapta nivosaria	Snowy Geometer	SNR	G5		insects	x		
Eulogia ochrifrontella		SNR	GNR		insects	x		
Eumorpha pandorus	Pandorus Sphinx	S4	G5		insects	x		
Euodynerus foraminatus		S4	GNR		insects	x		
Euparthenos nubilis	Locust Underwing	S4?	G5		insects	x		
Euphoria inda	A Scarab Beetle	SNR	G5		insects	x		
Euphydryas phaeton	Baltimore Checkerspot	S4	G5		insects	x	OBA	
Euphyes bimacula	Two-spotted Skipper	S4	G4		insects		OBA	
Euphyes conspicua	Black Dash	S3	G4		insects		OBA	
Euphyes dion	Dion Skipper	S4	G4		insects		OBA	
Euphyes dukesi	Duke's Skipper	S2	G3		insects		OBA, NHIC	x
Euphyes vestris	Dun Skipper	S5	G5		insects	x	OBA	
Euphyia intermediata		SNR	G5		insects	x		
Eupithecia miserulata	Common Eupithecia	SNR	G5		insects	x		
Euptoieta claudia	Variegated Fritillary	SNA	G5		insects	x	OBA	
Eurytides marcellus	Zebra Swallowtail	SNA	G5		insects		OBA	
Eusarca confusaria	Confused Eusarca	SNR	G5		insects	x		
Evacanthus nigramericanus		SNR	GNR		insects	x		
Feltia herilis	Master's Dart Moth	S5	G5		insects	x		
Feltia jaculifera	Dingy Cutworm Moth	S5	G5		insects	x		
Feniseca tarquinius	Harvester	S4	G5		insects		OBA	
Formica exsectoides	Allegheny Mound Ant	S5	G5		insects	x		

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	Formica subsericea	Slightly Silky Mound Ant	S5	G5	insects	x	
	Fumibotys fumalis		SNR	GNR	insects	x	
	Furcula cinerea	Gray Furcula	SNR	G5	insects	x	
	Galleria mellonella	Greater Wax Moth	SNA	G5	insects	x	
	Gaurotes cyanipennis	A Longhorned Beetle	SNR	G5	insects	x	
	Geron calvus	Bald Bee Fly	S3S4	GNR	insects	x	
	Glischrochilus fasciatus	A Sap Beetle	SNR	G5	insects	x	
	Gluphisia septentrionis	Common Gluphisia	SNR	G5	insects	x	
	Gomphurus vastus	Cobra Clubtail	S1	G5	insects		NHIC
	Graphisurus fasciatus	A Longhorned Beetle	SNR	G5	insects	x	
	Graphocephala coccinea		SNR	GNR	insects	x	
	Gryllus pennsylvanicus	Fall Field Cricket	S5	G5	insects	x	
	Gypona melanota		SNR	GNR	insects	x	
	Gyponana gladia		SNR	GNR	insects	x	
	Gyponana octolineata		SNR	GNR	insects	x	
	Haematopis grataria	Chickweed Geometer	SNR	G5	insects	x	
	Halictus ligatus	Ligated Gregarious Sweat Bee	S5	G5	insects	x	
	Halysidota harrisii		SNR	G5	insects	x	
	Halysidota tessellaris	Banded Tussock Moth	S5	G5	insects	x	
	Haploa clymene	Clymene Moth	SNR	G5	insects	x	
	Haploa confusa	Confused Haploa	S5	G5	insects	x	
	Haploa lecontei	LeConte's Haploa	S4?	G5	insects	x	
	Haploa reversa	Reversed Haploa	S1?	G5	insects		NHIC
	Harrisimemna trisignata	Harris's Three-spot	S4	G5	insects	x	
	Harrisina americana	Grapeleaf Skeletonizer Moth	SNR	G5	insects	x	
	Helicoverpa zea	Corn Earworm Moth	SNR	G5	insects	x	
	Heliomata cycladata	Common Spring Moth	SNR	G5	insects	x	
	Helophilus fasciatus		S5	G5	insects	x	
	Hemaris diffinis	Snowberry Clearwing Moth	S4S5	G5	insects	x	
	Hemaris thysbe	Hummingbird Clearwing	S5	G5	insects	x	
	Hemipenthes sinuosa	Sinuous Bee Fly	S3S5	G5	insects	x	
	Hemipenthes webberi	Webber''s Bee Fly	S5?	G5	insects	x	
	Herpetogramma abdominalis		SNR	GNR	insects	x	
	Herpetogramma aeglealis		SNR	GNR	insects	x	
	Herpetogramma pertextalis		SNR	GNR	insects	x	
	Hesperia leonardus	Leonard's Skipper	S4	G5	insects		OBA
	Hesperophanes pubescens	A Longhorned Beetle	SNR	GNR	insects	x	
	Heterocampa guttivitta	Saddled Prominent	SNR	G5	insects	x	
	Hippodamia parenthesis	A Ladybird Beetle	SNR	G5	insects	x	
*	*Hippodamia variegata*	A Ladybird Beetle	SNA	GNR	insects	x	
	Horisme intestinata	Brown Bark Carpet	SNR	G5	insects	x	
	Hyalophora cecropia	Cecropia Moth	S5	G5	insects	x	
	Hylaeus modestus	Modest Yellow-faced Bee	S5	G5	insects	x	
	Hylephila phyleus	Fiery Skipper	SNA	G5	insects	x	OBA
	Hymetta balteata		SNR	GNR	insects	x	
	Hyparpax aurora	Pink Prominent	SNR	G5	insects	x	
	Hypena abalienalis	White-lined Bomolocha	SNR	G5	insects	x	

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Hypena baltimoralis	Baltimore Bomolocha	SNR	G5	insects	x		
Hypena bijugalis	Dimorphic Bomolocha	SNR	G5	insects	x		
Hypena manalis	Flowing-line Bomolocha	SNR	G5	insects	x		
Hypena scabra	Green Cloverworm Moth	SNR	G5	insects	x		
Hypenodes fractilinea	Broken-line Hypenodes	SNR	G4	insects	x		
Hyperaspis proba	A Ladybird Beetle	SNR	GNR	insects	x		
Hypercompe scribonia	Giant Leopard Moth	SNR	G5	insects	x		
Hyphantria cunea	Fall Webworm Moth	S5	G5	insects	x		
Hypoprepia fucosa	Painted Lichen Moth	S5	G5	insects	x		
Hyppa xylinoides	Common Hyppa	SNR	G5	insects	x		
Hypsopygia costalis	Clover Hayworm Moth	SNA	G5	insects	x		
Idaea dimidiata		SNR	G5	insects	x		
Idia aemula	Common Idia	SNR	G5	insects	x		
Idia americalis	American Idia	SNR	G5	insects	x		
Ischnura hastata	Citrine Forktail	SNA	G5	insects	x		
Ischnura posita	Fragile Forktail	S4	G5	insects	x		
Ischnura verticalis	Eastern Forktail	S5	G5	insects	x		
Japananus hyalinus		SNR	GNR	insects	x		
Junonia coenia	Common Buckeye	SNA	G5	insects	x	OBA	
Kuschelina gibbitarsa	A Leaf Beetle	SNR	GNR	insects	x		
Labidomera clivicollis	A Leaf Beetle	SNR	G5	insects	x		
Lacinipolia renigera	Bristly Cutworm Moth	S5	G5	insects	x		
Latalus sayii		SNR	GNR	insects	x		
Lebia viridis	Ground Beetle	SNR	G5	insects	x		
Ledaea perditalis	Lost Owlet	SNR	G5	insects	x		
Lema daturaphila	A Leaf Beetle	SNR	G5	insects	x		
Leptinotarsa decemlineata	A Leaf Beetle	SNR	G5	insects	x		
Leptomantispa pulchella	Beautiful Mantidfly	SU	GNR	insects	x		
Lepyronia quadrangularis	Diamond-backed Spittlebug	S5	G5	insects	x		
Lestes congener	Spotted Spreadwing	S5	G5	insects	x		
Lestes dryas	Emerald Spreadwing	S5	G5	insects	x		
Lestes forcipatus	Sweetflag Spreadwing	S4	G5	insects	x		
Lestes rectangularis	Slender Spreadwing	S5	G5	insects	x		
Lethe anthedon	Northern Pearly-Eye	S5	G5	insects	x	OBA	
Lethe appalachia	Appalachian Brown	S4	G4	insects	x	OBA	
Lethe eurydice	Eyed Brown	S5	G5	insects	x	OBA	
Leucania pseudargyria	False Wainscot	S5	G5	insects	x		
Leucania ursula	Ursula Wainscot	SNR	G5	insects	x		
Leucanthiza amphicarpeaefolie		SNR	GNR	insects	x		
Leuconycta diphteroides	Green Leuconycta	SNR	G5	insects	x		
Leuconycta lepidula		SNR	G5	insects	x		
Leucorrhinia intacta	Dot-tailed Whiteface	S5	G5	insects	x		
Libellula incesta	Slaty Skimmer	S4	G5	insects	x		
Libellula luctuosa	Widow Skimmer	S5	G5	insects	x		
Libellula pulchella	Twelve-spotted Skimmer	S5	G5	insects	x		
Libellula semifasciata	Painted Skimmer	S2	G5	insects	x	NHIC	
Libellula vibrans	Great Blue Skimmer	S1	G5	insects		NHIC	x

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	Libytheana carinenta	American Snout	SNA	G5	insects	x	OBA	
	Lichenophanes bicornis	A Bostrichid Powder-post Beetle	SNR	G5	insects	x		
*	*Lilioceris lilii*	A Leaf Beetle	SNA	GNR	insects	x		
	Limenitis archippus	Viceroy	S5	G5	insects	x	OBA	
	Limenitis arthemis arthemis	White Admiral	S5	G5T5	insects		OBA	
	Limenitis arthemis astyanax	Red-spotted Purple	S5	G5T5	insects	x	OBA	
	Limotettix uhleri		SNR	GNR	insects	x		
	Lintneria eremitus	Hermit Sphinx	S5	G4G5	insects	x		
	Lophocampa caryae	Hickory Tussock Moth	SNR	G5	insects	x		
	Loxocera ojibwayensis	a rust fly	SNR	GNR	insects	x		
	Lucanus capreolus	A Stag Beetle	SNR	GNR	insects	x		
	Lucidota atra	A Glowworm	SNR	G5	insects	x		
	Lycaena hyllus	Bronze Copper	S5	G5	insects	x	OBA	
	Lycaena phlaeas	American Copper	S5	G5	insects	x	OBA	
*	*Lymantria dispar*	Gypsy Moth	SNA	G5	insects	x		
	Lytrosis unitaria	Common Lytrosis	SNR	G5	insects	x		
	Maccaffertium luteum	Butter Flat-headed Mayfly	SU	G5	insects	x		
	Maccaffertium modestum	Modest Flat-headed Mayfly	SU	G5	insects	x		
	Maccaffertium pulchellum	Pretty Flat-headed Mayfly	SU	G5	insects	x		
	Machimia tentoriferella	Golden-striped Leaftier Moth	SNR	GNR	insects	x		
	Macrochilo litophora		SNR	GNR	insects	x		
	Macrodactylus subspinosus	A Scarab Beetle	SNR	G5	insects	x		
	Macropsis cinerea		SNR	GNR	insects	x		
	Macropsis osborni		SNR	GNR	insects	x		
	Macrostemum zebratum	Striped Net-spinning Caddisfly	S4S5	G5	insects	x		
	Madarellus undulatus	A Weevil	SNR	GNR	insects	x		
	Malacosoma americana	Eastern Tent Caterpillar Moth	S5	G5	insects	x		
	Maliattha synochitis	Black-dotted Lithacodia	S4?	G5	insects	x		
	Mallota posticata		S4	GNR	insects	x		
	Mantis religiosa	Praying Mantis	SNA	GNR	insects	x		x
	Marimatha nigrofimbria	Black-bordered Lemon Moth	SNR	G5	insects	x		
	Meconema thalassinum	Drumming Katydid	SNA	GNR	insects	x		
	Megachile sculpturalis	Giant Leafcutter Bee	SNA	G5	insects	x		
	Megacyllene robiniae	A Longhorned Beetle	SNR	G5	insects	x		
	Megalodacne fasciata	A Pleasing Fungus Beetle	SNR	GNR	insects	x		
	Megisto cymela	Little Wood-Satyr	S5	G5	insects	x	OBA	
	Melanchra picta	Zebra Caterpillar Moth	SNR	G5	insects	x		
	Melanoplus bivittatus	Two-striped Grasshopper	S5	G5	insects	x		
	Melanoplus confusus	Pasture Grasshopper	S3S4	G5	insects	x		
	Melanoplus differentialis	Differential Grasshopper	S3	G5	insects		NHIC	x
	Melanoplus punctulatus	Grizzly Grasshopper	S4	G5	insects	x		
	Melanoplus scudderi	Scudder's Short-winged Grasshop	S1	G5	insects		NHIC	x
	Melanoplus walshii	Walsh's Grasshopper	S2	G4G5	insects			x
	Melittia cucurbitae	Squash Vine Borer Moth	SNR	GNR	insects	x		
	Merodon equestris		SNA	GNR	insects	x		
	Meropleon ambifusca		SNR	G3G4	insects	x		
	Mesamia nigridorsum		SNR	GNR	insects	x		

Metzneria lappella		SNR	GNR	insects	x			
Microcentrum rhombifolium	Greater Angle-wing Katydid	S4	GNR	insects	x			x
Microcrambus biguttellus		SNR	GNR	insects	x			
Microcrambus elegans		SNR	GNR	insects	x			
Microdon globosus		S4	GNR	insects	x			
Micromus posticus	Posterior Brown Lacewing	SU	GNR	insects	x			
Mocis texana	Texas Mocis	SNA	G5	insects	x			
Molorchus bimaculatus	A Longhorned Beetle	SNR	G5	insects	x			
Monobia quadridens		S2?	GNR	insects	x	NHIC		
Mononychus vulpeculus	A Weevil	SNR	GNR	insects	x			
Mythimna unipuncta	Armyworm Moth	S4	G5	insects	x			
Nadata gibbosa	White-spotted Prominent Moth	S5	G5	insects	x			
Nathalis iole	Dainty Sulphur	SNA	G5	insects		OBA		
Necrophila americana	A Carrion Beetle	S5	G5	insects	x			
Nectopsyche exquisita	Exquisite Long-horned Caddisfly	S4S5	G5	insects	x			
Nematocampa resistaria	Horned Spanworm Moth	SNR	G5	insects	x			
Neoconocephalus ensiger	Sword-bearing Conehead Katydid	S4	G5	insects	x			
Neocurtilla hexadactyla	Northern Mole Cricket	S2S3	GNR	insects		NHIC		
Neoxabea bipunctata	Two-spotted Tree Cricket	S4	GNR	insects	x			x
Nicrophorus orbicollis	A Carrion Beetle	S5	G5	insects	x			
Nicrophorus tomentosus	A Carrion Beetle	S5	G5	insects	x			
* *Noctua pronuba*	Large Yellow Underwing Moth	SNA	GNR	insects	x			
Nomophila nearctica		SNR	G5	insects	x			
Norvellina novica		SNR	GNR	insects	x			
Norvellina seminuda		SNR	GNR	insects	x			
Nymphalis antiopa	Mourning Cloak	S5	G5	insects	x	OBA		
Nymphalis l-album	Compton Tortoiseshell	S5	G5	insects		OBA		
Ocyptamus fuscipennis		S4	GNR	insects	x			
Odontota scapularis	A Leaf Beetle	SNR	G5	insects	x			
Oecanthus nigricornis	Black-horned Tree Cricket	S4	G5	insects	x			
Oecanthus niveus	Narrow-winged Tree Cricket	S3S4	GNR	insects	x			x
Oecanthus quadripunctatus	Four-spotted Tree Cricket	S4	G5	insects	x			
Oiceoptoma inaequale	A Carrion Beetle	SNR	GNR	insects	x			
Oligia modica	Black-banded Brocade	SNR	G5	insects	x			
Onthophagus hecate	A Scarab Beetle	SNR	G5	insects	x			
Orchelimum nigripes	Black-legged Meadow Katydid	S4	GNR	insects	x			
Orgyia definita	Definite Tussock Moth	SNR	G5	insects	x			
Orgyia leucostigma	White-marked Tussock Moth	S5	G5	insects	x			
Orthonama obstipata	The Gem	SNR	G5	insects	x			
Orthosia hibisci	Speckled Green Fruitworm Moth	S5	G5	insects	x			
Ostrinia penitalis		SNR	GNR	insects	x			
Otiorhynchus sulcatus	A Weevil	SNR	GNR	insects	x			
Pachydiplax longipennis	Blue Dasher	S5	G5	insects	x			
Pachyschelus purpureus	A Metallic Wood-boring Beetle	SNR	GNR	insects	x			
Pachysphinx modesta	Big Poplar Sphinx	S5	G5	insects	x			
Palpita magniferalis		SNR	GNR	insects	x			
Palthis angulalis	Dark-spotted Palthis	SNR	G5	insects	x			

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Palthis asopialis	Faint-spotted Palthis	SNR	G5	insects	x			
Pandemis limitata	Three-lined Leafroller Moth	SNR	GNR	insects	x			
Panopoda rufimargo	Red-lined Panopoda	SNR	G5	insects	x			
Pantala flavescens	Wandering Glider	S4	G5	insects	x			
Pantala hymenaea	Spot-winged Glider	S4	G5	insects	x			
Pantographa limata	Basswood Leafroller Moth	SNR	GNR	insects	x			
Paonias excaecata	Blinded Sphinx	S5	G5	insects	x			
Paonias myops	Small-eyed Sphinx	S5	G5	insects	x			
Papaipema arctivorens		SNR	G5	insects	x			
Papaipema inquaesita		SNR	G5	insects	x			
Papaipema insulidens		SNR	GU	insects	x			
Papaipema nebris	Stalk Borer Moth	SNR	G5	insects	x			
Papaipema necopina	Sunflower Borer Moth	SNR	G4?	insects	x			
Papaipema pterisii		SNR	G5	insects	x			
Papaipema rigida	Rigid Sunflower Borer Moth	SNR	G4G5	insects	x			
Papaipema unimoda		SNR	G5	insects	x			
Papilio cresphontes	Giant Swallowtail	S4	G5	insects	x	OBA		
Papilio glaucus	Eastern Tiger Swallowtail	S5	G5	insects	x	OBA		
Papilio polyxenes	Black Swallowtail	S5	G5	insects	x	OBA		
Papilio troilus	Spicebush Swallowtail	S4	G4?	insects	x	OBA		
Parallelia bistriaris	Maple Looper Moth	SNR	G5	insects	x			
Parancistrocerus perennis		S2	GNR	insects		NHIC		
Parapoynx allionealis		SNR	GNR	insects	x			
Parapoynx badiusalis		SNR	GNR	insects	x			
Parapoynx obscuralis		SNR	GNR	insects	x			
Paraulacizes irrorata		SNR	GNR	insects	x			
Parrhasius m-album	White-M Hairstreak	SNA	G5	insects	x	OBA		
Pelidnota punctata	A Scarab Beetle	SNR	G5	insects	x			
Penthimia americana		SNR	GNR	insects	x			
Peridea angulosa	Angulose Prominent	SNR	G5	insects	x			
Peridroma saucia	Variegated Cutworm Moth	S5	G5	insects	x			
Perigea xanthioides	Red Groundling	SNR	G5	insects	x			
Perithemis tenera	Eastern Amberwing	S4	G5	insects	x		x	
Pero honestaria	Honest Pero	SNR	G5	insects	x			
Petrophila canadensis		SNR	GNR	insects	x			
Petrophora subaequaria	Northern Petrophora	SNR	G5	insects	x			
Phaeoura quernaria	Oak Beauty	SNR	G5	insects	x			
Phalaenophana pyramusalis	Dark-banded Owlet	SNR	G5	insects	x			
Phalaenostola larentioides	Black-banded Owlet	SNR	G5	insects	x			
Phanogomphus graslinellus	Pronghorn Clubtail	S3	G5	insects		NHIC	x	
Pheosia rimosa	Black-rimmed Prominent	SNR	G5	insects	x			
* *Philaenus spumarius*	Meadow Spittlebug	SNA	GNR	insects	x			
Phoebis philea	Orange-barred Sulphur	SNA	G5	insects		OBA		
Phoebis sennae	Cloudless Sulphur	SNA	G5	insects		OBA		
Pholisora catullus	Common Sootywing	S4	G5	insects	x	OBA		
Phyciodes cocyta	Northern Crescent	S5	G5	insects	x	OBA		
Phyciodes tharos	Pearl Crescent	S4	G5	insects	x	OBA		

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	Phyllobius oblongus	A Weevil	SNR	GNR	insects	x	
	Phyllodesma americana	Lappet Moth	S5	G5	insects	x	
*	*Pieris rapae*	Cabbage White	SNA	G5	insects	x	OBA
	Pilocrocis ramentalis		SNR	GNR	insects	x	
	Plathemis lydia	Common Whitetail	S5	G5	insects	x	
	Platylomalus aequalis	A Hister Beetle	SNR	G5	insects	x	
	Platynota idaeusalis	Tufted Apple-bud Moth	SNR	GNR	insects	x	
	Platyptilia carduidactylus		SNR	G5	insects	x	
	Pleuroprucha insulsaria	Common Tan Wave	SNR	G5	insects	x	
	Plusiodonta compressipalpis	Moonseed Moth	SNR	G4	insects	x	
	Poanes hobomok	Hobomok Skipper	S5	G5	insects		OBA
	Poanes massasoit	Mulberry Wing	S4	G4	insects		OBA
	Poanes viator	Broad-winged Skipper	S4	G5	insects	x	OBA
	Poanes zabulon	Zabulon Skipper	S1	G5	insects		OBA
	Pococera asperatella		SNR	GNR	insects	x	
	Podabrus brevicollis	A Soldier Beetle	SNR	GNR	insects	x	
	Podabrus flavicollis	A Soldier Beetle	SNR	GNR	insects	x	
	Podabrus rugosulus	A Soldier Beetle	SNR	G5	insects	x	
	Podabrus tomentosus	A Soldier Beetle	SNR	GNR	insects	x	
	Polemius laticornis	A Soldier Beetle	SNR	GNR	insects	x	
	Polistes dominula		SNA	GNR	insects	x	
	Polistes fuscatus		S4	G5	insects	x	
	Polites mystic	Long Dash Skipper	S5	G5	insects	x	OBA
	Polites origenes	Crossline Skipper	S4	G4G5	insects	x	OBA
	Polites peckius	Peck's Skipper	S5	G5	insects	x	OBA
	Polites themistocles	Tawny-edged Skipper	S5	G5	insects	x	OBA
	Polyamia caperata		SNR	GNR	insects	x	
	Polygonia comma	Eastern Comma	S5	G5	insects	x	OBA
	Polygonia interrogationis	Question Mark	S5	G5	insects	x	OBA
	Polygrammodes flavidalis		SNR	GNR	insects	x	
	Pompeius verna	Little Glassywing	S4	G5	insects	x	OBA
	Ponana rubida		SNR	GNR	insects	x	
	Ponometia candefacta	Olive-shaded Bird-dropping Moth	S4?	G5	insects	x	
	Ponometia erastrioides	Small Bird-dropping Moth	SNR	G5	insects	x	
	Pontia protodice	Checkered White	SNA	G5	insects		OBA
*	*Popillia japonica*	A Scarab Beetle	SNA	GNR	insects	x	
	Prenolepis imparis	Winter Ant	S4	G5	insects	x	
	Prescottia lobata		SNR	GNR	insects	x	
	Prochoerodes lineola	Large Maple Spanworm Moth	S5	G5	insects	x	
	Progomphus obscurus	Common Sanddragon	S1	G5	insects		NHIC
	Prolimacodes badia	Skiff Moth	SNR	G5	insects	x	
	Protoboarmia porcelaria	Porcelain Gray	SNR	G5	insects	x	
	Protodeltote muscosula	Large Mossy Lithacodia	SNR	G5	insects	x	
	Psenocerus supernotatus	A Longhorned Beetle	SNR	G5	insects	x	
	Pseudeustrotia carneola	Pink-barred Lithacodia	S4	G5	insects	x	
	Pseudeva purpurigera	Straight-lined Looper Moth	SNR	G5	insects	x	
	Pseudogaurotina abdominalis	A Longhorned Beetle	SNR	GNR	insects	x	

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	Pseudohermonassa bicarnea	Pink-spotted Dart	S4	G5	insects	x	
	Pseudothyatira cymatophoroia	Tufted Thyatirid	S4S5	G5	insects	x	
	Psorophora ciliata	Large Gold-striped Mosquito	SU	GNR	insects	x	
*	*Psyche casta*	Common Bagworm Moth	SNA	GNR	insects	x	
	Psychomorpha epimenis	Grapevine Epimenis Moth	S4	G5	insects	x	
	Psyllobora vigintimaculata	A Ladybird Beetle	SNR	G5	insects	x	
	Psyrassa unicolor	A Longhorned Beetle	SNR	GNR	insects	x	
	Pterostichus mutus	Ground Beetle	SNR	G5	insects	x	
	Pyralis farinalis	Meal Moth	SNR	GNR	insects	x	
	Pyrausta acrionalis		SNR	G5	insects	x	
	Pyrausta bicoloralis		SNR	GNR	insects	x	
	Pyrausta orphisalis		SNR	GNR	insects	x	
	Pyrausta signatalis		SNR	G5	insects	x	
	Pyrgus communis	Common Checkered Skipper	SNA	G5	insects		OBA
	Pyrisitia lisa	Little Yellow	SNA	G5	insects		OBA
	Pyropyga decipiens	A Glowworm	SNR	G5	insects	x	
	Pyrrharctia isabella	Isabella Tiger Moth	S5	G5	insects	x	
	Pyrrhia aurantiago	False Foxglove Sun Moth	S1	G3G4	insects		NHIC
	Pyrrhia cilisca	Bordered Sallow	SNR	G5	insects	x	
	Pyrrhia exprimens	Purple-lined Sallow	SNR	G5	insects	x	
	Raphia frater	The Brother	S4S5	G5	insects	x	
	Rhingia nasica		S5	G5	insects	x	
	Rhyssomatus lineaticollis	A Weevil	SNR	GNR	insects	x	
	Ripiphorus fasciatus	A Wedge-shaped Beetle	SNR	GNR	insects	x	
	Rivula propinqualis	Spotted Grass Moth	SNR	G5	insects	x	
	Roeseliana roeselii	Roesel¿s Shield-backed Katydid	SNA	GNR	insects	x	
	Satyrium acadica	Acadian Hairstreak	S4	G5	insects	x	OBA
	Satyrium calanus	Banded Hairstreak	S4	G5	insects	x	OBA
	Satyrium caryaevorus	Hickory Hairstreak	S4	G4	insects	x	OBA
	Satyrium edwardsii	Edwards' Hairstreak	S4	G5	insects	x	OBA
	Satyrium favonius	Oak Hairstreak	S1	G4G5	insects		OBA, NHIC
	Satyrium liparops	Striped Hairstreak	S5	G5	insects	x	OBA
	Satyrium titus	Coral Hairstreak	S5	G5	insects	x	OBA
	Saucrobotys futilalis		SNR	GNR	insects	x	
	Scaphytopius frontalis	Yellowfaced Leafhopper	SNR	GNR	insects	x	
	Scarites subterraneus	A Ground Beetle	SNR	GNR	insects	x	
	Schinia arcigera	Arcigera Flower Moth	SNR	G5	insects	x	
	Schinia florida	Primrose Moth	SNR	G5	insects	x	
	Schinia rivulosa	Ragweed Flower Moth	SNR	G5	insects	x	
	Schinia trifascia	Three-lined Flower Moth	SNR	G5	insects	x	
	Schizura leptinoides	Black-blotched Schizura	SNR	G5	insects	x	
	Schizura unicornis	Unicorn Caterpillar Moth	SNR	G5	insects	x	
	Scoliopteryx libatrix	Herald Moth	S5	G5	insects	x	
	Scoparia biplagialis		SNR	GNR	insects	x	
	Scopula limboundata	Large Lace-border	SNR	G5	insects	x	
	Scudderia furcata	Fork-tailed Bush Katydid	S4	G5	insects	x	
	Scudderia septentrionalis	Northern Bush Katydid	S3?	G3?	insects	x	

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	Sitona hispidulus	A Weevil	SNR	GNR	insects	x	
	Smodicum cucujiforme	A Longhorned Beetle	SNR	GNR	insects	x	
	Spargaloma sexpunctata	Six-spotted Gray	SNR	G5	insects	x	
	Sparganothis sulfureana	Sparganothis Fruitworm Moth	SNR	GNR	insects	x	
	Sparnopolius confusus	Aster Bee Fly	S3S4	GNR	insects	x	
	Speyeria aphrodite	Aphrodite Fritillary	S5	G5	insects		OBA
	Speyeria cybele	Great Spangled Fritillary	S5	G5	insects	x	OBA
	Speyeria idalia	Regal Fritillary	SNA	G3?	insects		OBA
	Sphaerophoria contigua		S5	G5	insects	x	
	Sphecius speciosus	Cicada Killer	S1S2	GNR	insects		NHIC
	Sphecodina abbottii	Abbott's Sphinx	S4	G5	insects	x	
	Sphinx kalmiae	Laurel Sphinx	S5	G5	insects	x	
	Spilomyia longicornis		S4	GNR	insects	x	
	Spilosoma virginica	Virginian Tiger Moth	S5	G5	insects	x	
	Spiramater lutra		S5	G5	insects	x	
	Spodoptera frugiperda	Fall Armyworm Moth	SNR	G5	insects	x	
	Spodoptera ornithogalli	Yellow-striped Armyworm Moth	SNR	G5	insects	x	
	Spragueia leo	Common Spragueia	SNR	G5	insects	x	
	Stenolophus lineola	Ground Beetle	SNR	GNR	insects	x	
	Stenolophus ochropezus	Ground Beetle	SNR	G5	insects	x	
	Strangalia luteicornis	A Longhorned Beetle	SNR	GNR	insects	x	
	Strymon melinus	Gray Hairstreak	S4	G5	insects		OBA
	Stylurus notatus	Elusive Clubtail	S2	G3	insects		NHIC
	Sumitrosis inaequalis	A Leaf Beetle	SNR	G5	insects	x	
	Sunira bicolorago	Bicolored Sallow Moth	S5	G5	insects	x	
	Symmerista canicosta		SNR	G5	insects	x	
	Sympetrum obtrusum	White-faced Meadowhawk	S5	G5	insects	x	
	Sympetrum rubicundulum	Ruby Meadowhawk	S5	G5	insects	x	
	Sympetrum semicinctum	Band-winged Meadowhawk	S4	G5	insects	x	
	Sympetrum vicinum	Autumn Meadowhawk	S5	G5	insects	x	
	Synchlora aerata	Wavy-lined Emerald	SNR	G5	insects	x	
	Systena marginalis	A Leaf Beetle	SNR	GNR	insects	x	
	Tabanus atratus	Mourning Horse Fly	S4	GNR	insects	x	
	Tabanus trimaculatus	Three-spotted Horse Fly	SU	GNR	insects	x	
	Tenodera sinensis	Chinese Mantis	SNA	GNR	insects	x	
	Tetraopes quinquemaculatus	A Longhorned Beetle	SNR	GNR	insects	x	
	Tetraopes tetrophthalmus	A Longhorned Beetle	SNR	G5	insects	x	
	Tettigidea lateralis	Black-sided Pygmy Grasshopper	S4?	G5	insects	x	
	Thorybes bathyllus	Southern Cloudywing	S3	G5	insects		OBA
	Thorybes pylades	Northern Cloudywing	S5	G5	insects	x	OBA
*	*Thymelicus lineola*	European Skipper	SNA	G5	insects	x	OBA
	Thyris maculata	Spotted Thyris	SNR	GNR	insects	x	
	Tolype velleda	Large Tolype	SNR	G5	insects	x	
	Toxomerus geminatus		S5	G5	insects	x	
	Toxomerus marginatus		S5	G5	insects	x	
	Toxomerus politus		S4	GNR	insects	x	
	Toxophora amphitea	Symmetric Hunchback Bee Fly	S1	GNR	insects		NHIC

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Tramea carolina	Carolina Saddlebags	SNA	G5	insects	x	
Tramea lacerata	Black Saddlebags	S4	G5	insects	x	
Trichiotinus affinis	A Scarab Beetle	SNR	G5	insects	x	
Trichodezia albovittata	White-striped Black	SNR	G5	insects	x	
Tricholita signata	Signate Quaker	SNR	G5	insects	x	
Trichordestra legitima	Striped Garden Caterpillar Moth	S5	G5	insects	x	
Trirhabda canadensis	A Leaf Beetle	SNR	G5	insects	x	
Tritoma sanguinipennis	A Pleasing Fungus Beetle	SNR	G4G5	insects	x	
Tylonotus bimaculatus	A Longhorned Beetle	SNR	GNR	insects	x	
Tylozygus bifidus		SNR	GNR	insects	x	
Typocerus velutinus	A Longhorned Beetle	SNR	G5	insects	x	
Udea rubigalis	Celery Leaftier Moth	SNR	G5	insects	x	
Ululodes quadripunctatus	Four-spotted Owlfly	SU	GNR	insects	x	
Urbanus proteus	Long-tailed Skipper	SNA	G5	insects		OBA
Urola nivalis		SNR	G5	insects	x	
Vanessa atalanta	Red Admiral	S5	G5	insects	x	OBA
Vanessa cardui	Painted Lady	S5	G5	insects	x	OBA
Vanessa virginiensis	American Lady	S5	G5	insects	x	OBA
Vespula flavopilosa		S3S4	GNR	insects	x	
Vespula maculifrons		S4	G5	insects	x	
Vespula vidua		S3	GNR	insects		NHIC
Wallengrenia egeremet	Northern Broken-Dash	S5	G5	insects	x	OBA
Xanthogramma flavipes		S4	GNR	insects	x	
Xenotemna pallorana		SNR	GNR	insects	x	
Xenox tigrinus	Tiger Bee Fly	S3S4	GNR	insects	x	
Xestia dolosa	Greater Black-lettered Dart	S5	G5	insects	x	
Xylocopa virginica	Virginia Carpenter Bee	S4S5	G5	insects	x	
Yponomeuta cagnagella	Spindle Ermine Moth	SNA	GNR	insects	x	
Ypsolopha dentella		SNR	GNR	insects	x	
Zale lunata	Lunate Zale	S5	G5	insects	x	
Zanclognatha cruralis	Early Zanclognatha	SNR	G5	insects	x	
Zanclognatha pedipilalis	Grayish Zanclognatha	SNR	G5	insects	x	
Zerene cesonia	Southern Dogface	SNA	G5	insects		OBA
Oxidus gracilis	A Millipede	SNR	G5	millipedes	x	
Acanthepeira stellata	Star-bellied Orbweaver	S4	GNR	spiders	x	
Amaurobius ferox	Black Laceweaver	SNA	GNR	spiders	x	
Araneus bicentenarius	Lichen-marked Orbweaver	SU	GNR	spiders	x	
Araneus diadematus	Cross Orbweaver	SNA	GNR	spiders	x	
Araneus marmoreus	Marbled Orbweaver	S5	G5	spiders	x	
Araneus thaddeus	Lattice Orbweaver	S3S4	GNR	spiders	x	
Araneus trifolium	Shamrock Orbweaver	S5	G5	spiders	x	
Araniella displicata	Six-spotted Yellow Orbweaver	S5	G5	spiders	x	
Argiope aurantia	Yellow Garden Orbweaver	S5	G5	spiders	x	
Argiope trifasciata	Banded Garden Orbweaver	S5	G5	spiders	x	
Cheiracanthium mildei	Milde's Prowling Spider	SNA	GNR	spiders	x	
Dolomedes tenebrosus	Terrestrial Fishing Spider	S5	G5	spiders	x	
Dolomedes triton	Six-spotted Fishing Spider	S5	G5	spiders	x	

Dysdera crocata	Woodlouse Hunter Spider	SNA	GNR	spiders	x	
Enoplognatha ovata	Polymorphic Long-jawed Cobwea	SNA	GNR	spiders	x	
Eris militaris	Bronze Jumping Spider	S5	G5	spiders	x	
Eustala anastera	Hump-backed Orbweaver	S5	G5	spiders	x	
Evarcha hoyi	Hoy's Knobbed Jumping Spider	S4	G5	spiders	x	
Habronattus borealis	Boreal Ornamented Jumping Spid	S4	GNR	spiders	x	
Hentzia mitrata	Golden Long-jawed Jumping Spid	S4	GNR	spiders	x	
Hentzia palmarum	Dark-legged Long-jawed Jumping	SU	GNR	spiders	x	
Herpyllus ecclesiasticus	Parson Ground Spider	S4S5	G5	spiders	x	
Hibana gracilis	Garden Ghost Spider	SU	GNR	spiders	x	
Larinioides cornutus	Furrow Orbweaver	S5	G5	spiders	x	
Leucauge venusta	Orchard Long-jawed Spider	S4S5	GNR	spiders	x	
Maevia inclemens	Dimorphic Jumping Spider	SU	GNR	spiders	x	
Mangora gibberosa	Lined Orbweaver	S4	GNR	spiders	x	
Mangora placida	Tuft-legged Orbweaver	S4	GNR	spiders	x	
Marpissa formosa	Short-bellied Slender Jumping Spi	SU	GNR	spiders	x	
Marpissa lineata	Four-lined Slender Jumping Spide	SU	GNR	spiders	x	
Marpissa pikei	Pike's Slender Jumping Spider	SU	GNR	spiders	x	
Micrathena gracilis	Spined Orbweaver	S3S4	GNR	spiders	x	
Micrathena sagittata	Arrow-shaped Orbweaver	S3S4	GNR	spiders	x	
Mimetus notius	Reticulated Pirate Spider	SU	GNR	spiders	x	
Misumena vatia	Goldenrod Crab Spider	S5	G5	spiders	x	
Misumessus oblongus	Pale Crab Spider	S4	GNR	spiders	x	
Neoscona arabesca	Arabesque Orbweaver	S5	G5	spiders	x	
Neoscona crucifera	Hentz's Orbweaver	S3S4	GNR	spiders	x	
Oxyopes scalaris	Western Lynx Spider	S4S5	G5	spiders	x	
Pachygnatha autumnalis	Big-eyed Thick Long-jawed Spider	S4S5	GNR	spiders	x	
Pelegrina galathea	Peppered White-cheeked Jumpin	S4	GNR	spiders	x	
Pelegrina proterva	Common White-cheeked Jumping	S5	G5	spiders	x	
Phidippus audax	Bold Tufted Jumping Spider	SU	GNR	spiders	x	
Phidippus clarus	Striped Tufted Jumping Spider	S5	G5	spiders	x	
Phidippus princeps	Sinuous Tufted Jumping Spider	S4	GNR	spiders	x	
Pirata piraticus	Common Pirate Wolf Spider	S5	G5	spiders	x	
Piratula minuta	Small Pirate Wolf Spider	S5	G5	spiders	x	
Pisaurina brevipes	Straight-banded Nurseryweb Spid	S4S5	GNR	spiders	x	
Pisaurina mira	Common Nurseryweb Spider	S5	G5	spiders	x	
Platycryptus undatus	Ondulated Flattened Jumping Spi	SU	GNR	spiders	x	
Salticus scenicus	Zebra Jumping Spider	SNA	GNR	spiders	x	
Sphodros niger	Black Purseweb Tarantula	S3	G4G5	spiders		NHIC
Steatoda triangulosa	Checkered False Black Widow Spi	SNA	GNR	spiders	x	
Synemosyna formica	Slender Antmimic Jumping Spider	SU	GNR	spiders	x	
Tetragnatha elongata	Elongated Long-jawed Spider	S4S5	G5	spiders	x	
Tigrosa helluo	Wetland Giant Wolf Spider	S5	G5	spiders	x	
Tmarus angulatus	Tuberculated Crab Spider	S4	GNR	spiders	x	
Trachelas tranquillus	Large Contrasting Corinne Spider	S4S5	GNR	spiders	x	
Varacosa avara	Spurred Secretive Wolf Spider	SU	GNR	spiders	x	
Zygoballus rufipes	Red Hammer-jawed Jumping Spid	SU	GNR	spiders	x	

Invertebrates non-arthropods Table for Matchette and Malden (ONS2103A)

	Scientific Name	English Name	S Rank (Provincial)	G Rank (Global)	SARO	SARA Schedule 1	Narrow Taxon Group	iNat	Atlas/City Data (Ojibway EA unique records and fieldwork)	Ojibway Prairie Wetland Complex ER28
*	*Cepaea nemoralis*	Grovesnail	SNA	G5			gastropods	x		
*	*Cipangopaludina chinensis*	Chinese Mysterysnail	SNA	G5			gastropods	x		
	Cochlicopa lubrica	Glossy Pillar Snail	S5	G5			gastropods	x		
*	*Deroceras reticulatum*	Gray Fieldslug	SNA	G5			gastropods	x		
	Epioblasma rangiana	Northern Riffleshell	S1	G1	END	END	bivalves		NHIC	
	Ligumia nasuta	Eastern Pondmussel	S1	G4	END	END	bivalves		NHIC	
*	*Limax maximus*	Giant Gardenslug	SNA	G5			gastropods	x		
*	*Oxychilus draparnaudi*	Dark-bodied Glass-snail	SNA	G5			gastropods	x		
	Patera pennsylvanica	Proud Globelet	S1	G4	END		gastropods		NHIC	
	Ptychobranchus fasciolaris	Kidneyshell	S1	G4G5	END	END	bivalves		NHIC	
	Webbhelix multilineata	Striped Whitelip	S2S3	G5			gastropods		NHIC	