

Pollination Guide

For Minnesota Native Plant Species and Native Plant Communities

Contents

Introduction.....	1
Background.....	2
Data Collection	2
Outcomes/Products.....	8
Appendix A – Pollination Index.....	11

Introduction

The Minnesota Pollination Guide (PG) provides data and information on the reproduction and pollination characteristics of native plant species. It is compiled from existing literature, biological collections, and subject matter experts. It presents information relative to 1) individual plant species and 2) the native plant communities (NPC) in which native plants occur.

The data provided in this guide are not intended to predict how plants or native plant communities are affected by pollinator change but are intended to provide information on the reliance of plants on pollinators for reproduction. The PG was designed to help provide clarity to questions such as:

- I am interested in plant conservation, what are the pollinators or pollination ecology of my plants of interest?
- I am interested in integrated plant-pollinator conservation and management, what do we know about pollination ecology in Minnesota?
- I am interested in plant community conservation, to what degree does my NPC of interest involve or rely upon insect pollination?
- I am interested in pollinators, what plants and NPCs interact with my insect pollinator of interest?
- I am interested in pollination, what plants have the pollination attributes of interest?

While the PG provides data for all native Minnesota plant species where it is known, it does not claim or intend to compile data for all insect pollinators. The Minnesota Statewide Bee survey (2014-2023) has contributed to the establishment of a state list of native bee species and expanded upon our understanding of the distributions of many bee species, providing a baseline for conservation actions involving bees in the state. To learn more about these efforts, visit the Minnesota DNR's [Native Bees of Minnesota](#) page. However, there is still much we don't know about the insect diversity in Minnesota.

Background

Pollination is the biological process of transferring pollen from the anther to a stigma of a plant, leading to fertilization and seed production. Many plants benefit from assistance from a “pollinator” to ensure successful seed production. This resource refers only to bees, butterflies, and moths as animal pollinators since they are the primary pollinators in Minnesota though birds, bats, and other animals may be successful pollinators in other regions.

Pollination is usually an unintended consequence of animal activity on a flower. Pollen grains attach themselves to the body of an animal as they are collecting or eating pollen or sipping nectar. When the animal visits another flower, pollen falls off onto the stigma and can result in reproduction. This process can also occur in some plants abiotically, without the involvement of another organism, by wind or water. Rather than being mediated by an animal (biotic), the movement of pollen is mediated by wind or water, delivering it to the stigma of a flower.

Reproduction can occur through cross-breeding (cross-pollination) or inbreeding (self-pollination) though cross-pollination is beneficial in that it can increase a plants' diversity and adaptability to changing environments by creating genetic variation. Some plants have developed mechanisms to alter their breeding strategies depending on external conditions, when, for example, cross-pollination is not available. This may allow for less reliance on pollinators and enables seed production in any condition. In this resource, we refer to these strategies as “compatibility”.

Data Collection

The Pollination Guide is based on data collected through searches of scientific literature, biological collections, and existing plant trait databases to capture information on plant attributes related to pollination mechanisms (e.g., TRY Plant Trait Database; Flora of North America; Minnesota Wildflowers; Pladias; Crop Gene Bank). This effort provided the vast majority of information on at least nine attributes of native Minnesota plants. Gaps in data from these sources for traits like longevity, clonality, and pollinator requirements were filled through expert opinion where possible. The remaining data gaps are due to scientific unknowns about some plant species. For instance, ~40% (879) of the 2212 native, vascular plants in Minnesota have a compatibility or breeding system that appears unknown to published science. These unknowns contribute to uncertainty in our final products and shed light on focus areas for future research.

The plant species considered in this guide including their taxonomy and nomenclature are derived from [MNTaxa](#), the Minnesota Department of Natural Resources (MNDNR) list of vascular plant species in Minnesota. Plant varieties and subspecies that are not listed in 2023 as endangered, threatened, or special concern species in Minnesota were excluded from the list since we assume those plants have the same or comparable life histories at the species-level.

Plant Species Traits

We have compiled attributes of each vascular plant species for the following reproductive traits: longevity, clonality, compatibility, principal pollen vector, buzz pollination, flower structure, corolla length, and pollinator requirements. These traits reflect ecological and evolutionary processes of plants that involve pollinators for sexual reproduction, pollen movement, population growth, species persistence, and generating plant species genetic diversity.

Two additional attributes, origin (native vs. non-native) and rarity status are included as a means of filtering plant species that may have conservation value. Origin status was determined using data from MNTaxa, NatureServe Explorer, and species-level maps from The Biota of North America Program and Flora of North

America. State conservation status or rank data were collected from MNDNR Plant checklist (2013) and Rare Species Guide (2022).

Lastly, we developed a ranking system, referred to as the pollination index in the PG, that is a relative measure of how reliant each plant species is on pollinators. The pollination index was created with the intention of being used to suggest conservation or management priorities but should only be used as a comparison to itself for species listed in the PG.

Trait Details

All plant traits used in this PG are explained in detail below.

Longevity

The longevity of each plant species describes the growth of a plant in Minnesota. Perennial plants regrow every spring for more than three years while annual plants live for a single growing season and then die off. Biennial and short-term perennial plants fall somewhere in the middle, usually regrowing for two years.

Clonality

Clonal plants can reproduce asexually by means of vegetative offspring that remain attached to the parent, at least until they establish (Dong, Yu & Alpert, 2014). We describe clonality as either being “present”, “absent”, or “weakly” present (Table 1). The clonality of ~17 species (<1%) in Minnesota is unknown due to lack of information.

Table 1. Clonality values (present, absent, weakly clonal, and unknown) and the percent of the total plant species in each category.

Clonality Value	% plant species
Present	59
Absent	37
Weakly	4
Unknown	< 1

Compatibility

Plants exhibit various strategies to achieve reproduction via cross-breeding or inbreeding and everything in between. Table 2 provides terms used to define the reproductive compatibility traits of Minnesota plants. These terms are not necessarily mutually exclusive as some plant species use more than one known compatibility system.

For many plant species, compatibility is unknown or highly uncertain. Due to lack of information, compatibility attributes for 879 (~40%) of the 2212 plants analyzed are unknown. For a handful of other plants, the degree to which a strategy is used or present is uncertain, leading to terms like “sometimes dioecious”, for example.

Table 2. Compatibility abbreviation, definition, and the percent of the total plant species in each category.

Compatibility Abbreviation	Definition	% plant species
A	Apomixis: Asexual reproductive system in which plants produce seed genetically identical to maternal parent by various mechanisms without fertilization (Barrett, 2019)	2
CH	Chasmogamous: Open flowers capable of open pollination (Molano-Flores, 2004)	1
CL	Cleistogamous: Automatic self-pollination breeding system that uses non-opening, self-pollinating flowers (Culley & Klooster, 2007)	2
D	Dioecious: Sexual polymorphism with populations comprising female and male plants (Barrett, 2019)	4
Di	Dichogamous: Maturation of male and female flower parts occurs at different times, preventing self-fertilization (Osborn & Schneider, 1988)	< 1
GD	Gynodioecious: Sexual polymorphism with populations comprising hermaphrodite and female plants (Barrett, 2019)	< 1
Ge	Geitonogamy: A type of self-pollination by which a flower is pollinated by pollen from another flower on the same plant	< 1
GM	Gynomonoecious: Both hermaphrodite and female flowers on an individual plant (Molano-Flores, 2004)	< 1
H	Heterostyly: Style and stamen lengths vary among individuals within a population	< 1
Herkogamy	Herkogamy: Spatial separation of anthers and stigmas within flowers to reduce self-fertilization	< 1
Pa	Protandrous: Maturation of male reproductive organs before female	< 1
PD	Polygamodioecious: Bearing bisexual and male flowers on some plants, and bisexual and female flowers on others	< 1
Pg	Protogynous: Maturation of female reproductive organs before male	< 1
SC	Self-compatible: Ability of hermaphrodite plants to set abundant seed from self-pollination (Barrett, 2019)	31
SC/si	Mostly self-compatible but self-incompatibility found occasionally (Molano-Flores, 2004)	< 1
SI	Self-incompatible: Physiological mechanism limiting seed set from self-pollination in fertile hermaphrodite plants (Barrett, 2019)	15
SI/SC	Self-incompatible/self-compatible: Both self-incompatibility and self-compatibility systems found	< 1
SI/sc	Mostly self-incompatible but self-compatibility found occasionally (Molano-Flores, 2004)	2
UNK	Unknown compatibility system	40

Principal Pollen Vector

Principal pollen vector describes the primary dispersal mechanism that moves pollen for each plant species. Flowering plants transport pollen using insects, wind, water, or some combination of the three. Ferns and lycophytes are listed under this category with the understanding that they do not produce pollen but rather spores that are transported via wind and water.

Table 3. Principal pollen vector and the percent of the total plant species in each category.

Principal Pollen Vector	%
Insects	64
Primarily insect pollinated but may be sometime pollinated by wind or water	< 1
Water	1
Primarily water pollinated but may be sometime pollinated by insects or wind	< 1
Wind	30
Primarily wind pollinated but may be sometime pollinated by insects or water	4
Sterile (fern)	< 1

Buzz Pollination

Buzz pollination, also known as sonication, is a technique used by some larger bodied bees. A bee will grab onto the flower and rapidly move their flight muscles, causing the flower and anthers to vibrate and release pollen, incidentally fertilizing the plant. ~30 vascular plants in Minnesota require buzz pollination to some degree. Most of these plants require sonication for pollination but around eight plants, primarily *Vaccinium*, have been found to use but not require this technique for pollination.

Flower Structure

Definitions from Minnesota Wildflowers.

Table 4. Flower structure (open, irregular, indistinct, bell, tube, and none), and the definition and percent of the total plant species in each category.

Flower Structure	Definition	%
open	Flower is at the end of a stalk, generally flat with open access	34
irregular	Flower is not generally round, or its petal-like parts are dissimilar in size or shape	10
indistinct	Flower has no discernable petal-like parts	36
bell	Flowers have fused petals and hang downward; any lobes are similar in size and shape	5
tube	(Or funnel-shaped) have fused petals but flowers are proportionately longer and narrower than bell types; lobes on tubular flowers are often dissimilar in size or shape	10
none	No flower present; fern or lycophyte	5

Corolla Length

The petals of a flower are collectively known as the corolla. The corolla generally encircles the reproductive organs of a flower and may be fused, creating a tube or bell shape, or unfused and open. Many wind-pollinated plants lack petals entirely and longer, narrower, or complex corollas may impact the type of pollination or pollinator required for a plant. ~12% of flowering plants have corolla lengths that were not found in literature and are left blank within the guide.

Pollinator Requirements

Pollinator requirements encompass aspects of a flower that might restrict what insects may visit and successfully pollinate a plant. These include flower structure, flower restriction, corolla length, and required specializations like “buzz pollination” (Table 5).

Table 5. Pollinator requirement (generalist, somewhat specific insect, very specific insect, early spring insect, buzz pollination, and facultative buzz pollination), and the definition and percent of the total plant species in each category.

Pollinator Requirements	Definition	%
Generalist	Does not require specific body sized insect or pollination apparatus; flower with no corolla, or corolla very short (less than 3mm); flower wind or water pollinated; ferns and lycophytes	76
Somewhat specific insect	Not just any insect can pollinate; requires specific body sized insect; flower is somewhat restricted; larger "tube" flowers	13
Very specific insect	Requires very specialized insect pollinator; flowers with very long corollas	1
Early spring insect	Early spring flowers (plants listed by Minnesota Wildflowers to bloom by the second week of May or trees blooming before June) that are insect pollinated	9
Buzz pollination	Requires vibrations caused by bees visiting flowers for successful pollination	< 1
Facultative buzz pollination	Buzz pollination (sonication) present but not required	< 1

Pollination Index

We developed a ranking system, referred to as the pollination index, that is a relative measure of how reliant each plant species is on pollinators. Higher reliance indicates a plant is more dependent on insect pollinators to sustain a population through means of natural reproduction.

Through discussions with plant and insect experts, four pollination traits or trait groupings were decided upon as indicators for a plant’s reliance on pollinators. These were given a score between 0 and 3 to better assess and analyze how they collectively impact plant dependency on pollinators for reproduction: principal pollen vector, compatibility, longevity and clonality, and a handful of traits describing “pollinator specialization”. Traits considered under pollinator specialization are aspects of a flower that might restrict what insects may visit and successfully pollinate including flower structure, flower restriction, corolla length, and required specializations like “buzz pollination”. Traits with an unknown value (e.g. unknown compatibility) received a neutral score of 2.

We acknowledge that the pollination index is not a flawless product, but it effectively reflects the diverse ways plants depend on pollinators in a manner that feels intuitive. Numerous iterations of this index were created to

determine the most comprehensive and sound version. All versions of this index, trait scoring, and the thoughts and processes involved in each iteration, are captured in Appendix A. Version 6 is used in our final products and is further described here.

The pollination index was determined by summing the score for: principal pollen vector score (Table A8), compatibility score (Table A9), longevity and clonality score (Table A22), and pollinator specialization score (A12). Those plants pollinated exclusively by wind or water, regardless of their other traits, received an index value of zero. This provides a pollination index range of 0, 3-11. To create a continuous scale, three points were subtracted from all non-zero indices. Plants with a higher index value are considered to have a greater reliance on insect pollinators for reproduction. An index was determined for 2212 plant species in Minnesota with possible values ranging from: 0-8 (Table 6).

Table 6. Pollination index and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated
1-3	Least reliant on insect pollinators
4-6	More reliant on insect pollinators
7-8	Most reliant on insect pollinators

Origin

The origin status is listed for all plants within the PG and are defined from [MNDNR Plant checklist](#) (2013) as follows: N = native to the state of MN; I = Introduced; U = Native Status Undetermined.

Rarity Status

Definitions from the Minnesota DNR [Rare Species Guide](#). State conservation status or rank data were collected from MNDNR Plant checklist (2013) and Rare Species Guide (2022).

Table 7. Species rarity status (state endangered, state threatened, state special concern, federally endangered, federally threatened, and federal candidate), and the definition for each category.

Rarity Status	Definition
State endangered	A species is considered endangered if the species is threatened with extinction throughout all or a significant portion of its range within Minnesota
State threatened	A species is considered threatened if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range within Minnesota
State special concern	A species is considered a species of special concern if, although the species is not endangered or threatened, it is extremely uncommon in Minnesota, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations
Federally endangered	A species is considered endangered if the species is in danger of extinction throughout all or a significant portion of its range
Federally threatened	A species is considered threatened if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range
Federal candidate	A species proposed for addition to the Federally endangered and threatened species list

Outcomes/Products

Plant Species Pollination Guide

The data collected through this project has contributed to tools used throughout the state. The PG supplied plant attributes as well as specialist pollinator attributes to plant selection tools for The Minnesota Board of Water & Soil Resources (BWSR) and Metro Blooms. All attributes described within the plant species traits section will live in MNTaxa. This tool is used to organize data and currently provides a handful of attributes including species origin, physiognomy, and state distribution.

Native Plant Community Pollination Guide

Different native plant species self-organize into recognizable groups that repeat across the landscape and persist through time, herein referred to native plant communities (NPCs). The NPC PG is designed as a pollination companion to the DNR Field Guide to Native Plant Communities of Minnesota. The NPC PG is based on the NPC Class Fact Sheets and adds to them the pollination attributes for each of the plant species listed for the NPC Class. This provides a view on how the pollination traits of individual plant species compare within each NPC.

The NPC Class Pollination Fact Sheets present information on a plant species frequency and cover within the NPC, compatibility, longevity, clonality, principal pollen vector, pollinator requirements, and pollination index.

Within an NPC, some plant species are grouped due to uncertainty or difficulty in identification (e.g., *Rubus*, *Viola*) in the underlying plant data that supports the NPC classification. In some circumstances within these groups, traits vary by species and therefore are listed as “varies” in the companion guide.



Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

Literature cited:

Barrett S. C. H. (2019). A most complex marriage arrangement: recent advances on heterostyly and unresolved questions. *The New Phytologist*, 224(3), 1051–1067. <https://doi.org/10.1111/nph.16026>

Clough, Y., Ekoos, J., Báldi, A., Batáry, P., Bommarco, R., Gross, N., Holzschuh, A., Hopfenmüller, S., Knop, E., Kuussaari, M., Lindborg, R., Marini, L., Öckinger, E., Potts, S. G., Pöyry, J., Roberts, S. P., Steffan-Dewenter, I., & Smith, H. G. (2014). Density of insect-pollinated grassland plants decreases with increasing surrounding land-use intensity. *Ecology Letters*, 17(9), 1168–1177. <https://doi.org/10.1111/ele.12325>

Crop Genebank Knowledge Base. Information on breeding systems for some common tropical and sub-tropical forages.
https://crogenebank.sgrp.cgiar.org/images/file/forage_legumes/breeding%20systems%20table.pdf. Accessed December 22, 2022.

Culley, T. M., & Klooster, M. R. (2007). The Cleistogamous Breeding System: A Review of Its Frequency, Evolution, and Ecology in Angiosperms. *Botanical Review*, 73(1), 1–30.
<http://www.jstor.org/stable/27571184>

Dong, M., Fei-Hai Yu, & Peter Alpert (2014) Ecological consequences of plant clonality, *Annals of Botany*, Volume 114, Issue 2, August 2014, Page 367, <https://doi.org/10.1093/aob/mcu137>

Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico [Online]. 25+ vols. New York and Oxford. Vol. 1, 1993; vol. 2, 1993; vol. 3, 1997; vol. 4, 2003; vol. 5, 2005; vol. 6, 2015; vol. 7, 2010; vol. 8, 2009; vol. 9, 2014; vol. 10, 2021; vol. 11, 2023; vol. 12, 2016; vol. 13, 2024; vol. 14, 2023; vol. 17, 2019; vol. 19, 2006; vol. 20, 2006; vol. 21, 2006; vol. 22, 2000; vol. 23, 2002; vol. 24, 2007; vol. 25, 2003; vol. 26, 2002; vol. 27, 2007; vol. 28, 2014. <http://beta.floranorthamerica.org>. Accessed October-December, 2022.

Minnesota Wildflowers. [internet]. <https://www.minnesotawildflowers.info>. Accessed October, 2022

Molano-Flores, Brenda. (2004). Breeding systems of plants used for prairie restorations: A review. *Transactions of the Illinois State Academy of Science*. 97.

Osborn, J. M., & Schneider, E. L. (1988). Morphological Studies of the Nymphaeaceae Sensu Lato. XVI. The Floral Biology of *Brasenia Schreberi*. *Annals of the Missouri Botanical Garden*, 75(3), 778–794.
<https://doi.org/10.2307/2399366>

Pladias – Database of the Czech Flora and Vegetation [internet]. Species profiles available from:
<https://pladias.cz/en/taxon/>. Accessed November, 2022.

TRY plant trait database – enhanced coverage and open access. *Global Change Biology*. 26: 119 – 188.
<https://doi.org/10.1111/gcb.14904>.

Appendix A – Pollination Index

Numerous iterations of the pollination index were created to determine the most comprehensive and sound version. All versions of this index, trait scoring, and the thoughts and processes involved in each iteration, are captured in Appendix A. Version 6 is used in our final products.

Version 1

This version of the pollination index is calculated by a sum of the five plant traits or trait groupings: principal pollen vector score (Table A8), compatibility score (Table A9), longevity score (Table A10), clonality score (Table A11), pollination specialization score (Table A12). Scoring for each trait is laid out in the following tables. The index has a range of 0, 4-14, where all wind and water pollinated plants receive an automatic index of 0 (Table A13).

Table A8. Pollination index version 1 principal pollen vector score (0, 1, 2) and the definition of each category.

Principal pollen vector score	Definition
0	wind, water, unknown
1	insects + wind or water
2	insects

Table A9. Pollination index version 1 compatibility score (1, 2, 3) and the definition of each category.

Compatibility Score	Definition
1	± SC, SC, A, CL, Ge, CL in MN, CL only, unknown, blanks
2	SI/SC, SI/sc, SC/si, CL/CH, CL flowers present, sometimes D
3	± SI, SI, CH, D, PD, H, GD, Di, Distylous, Pg, Pa, PD, Gynoecious, GM, CL flowers absent, facultative xenogamy, reverse herkogamous, xenogamous, herkogamy

Table A10. Pollination index version 1 longevity score (1, 2, 3) and the definition of each category.

Longevity Score	Definition
1	Perennial
2	Biennial, short-lived perennial, etc.
3	Annual

Table A11. Pollination index version 1 clonality score (1, 2, 3) and the definition of each category.

Clonality Score	Definition
1	Present, unknown
2	Weakly
3	Absent

Table A12. Pollination index version 1 pollinator specialization score (1, 2, 3) and the definition of each category.

Pollinator Specialization Score	Definition
1	Generalist - does not require specific body size or pollination apparatus; no corolla, or corolla very short (less than 3mm)
2	Somewhat specialized - not just any insect can pollinate; requires specific body sized insect; flower is somewhat restricted; buzz pollination present but not required; larger "tube" flowers; early spring flowers that are insect pollinated
3	Very specialized - requires very specialized pollinator; requires buzz pollination, flowers with very long corollas

Table A13. Pollination index version 1 and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated
4-7	Least reliant on insect pollinators
8-11	More reliant on insect pollinators
12-14	Most reliant on insect pollinators

Version 2

Version 2 of the pollination index takes the same scoring and methods as version 1, but subtracts 4 from all non-zero indices to create a continuous range from 0-10 (Table A14). It was determined that version 1 and version 2 put too much weight in clonality and longevity individually and that they may be better captured under a single score (Table A22). These two traits are complementary of one another in that if a species is long-lived, then it can survive into the next year AND if a species is clonal, then it is more likely to survive into the next year because some ramets die and others don't (but this should be accounted for with long-lived variable).

Table A14. Pollination index version 2 and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated
1-3	Least reliant on insect pollinators
4-7	More reliant on insect pollinators
8-10	Most reliant on insect pollinators

Version 3

This version of the index created a pollination index with a range from 0-4 on 0.5 increments (Table A19). It uses the principal pollen vector score (Table A15) multiplied by the compatibility score (Table A16) to achieve a “reliance score”. If the reliance score is equal to zero, the overall score is zero. However, if the reliance score is greater than zero, the overall score is equal to the (reliance score * weight) plus the longevity score (Table A17) and pollination specialization score (Table A18). The weight is set to 2, making the reliance score relatively more important than longevity and specialization. Throughout the process, we attempted to adjust or put weights on longevity and specialization, but did not feel comfortable making scientific assumptions.

This index places more weight on the compatibility and principal pollen vector, and less on other plant traits. It also does not consider clonality which we feel is worth considering in some manner in the pollination index.

Table A15. Pollination index version 3 principal pollen vector score (0, 0.5, 1) and the definition of each category.

Principal pollen vector score	Definition
0	wind, water
0.5	insects + wind or water, unknown
1	insects

Table A16. Pollination index version 3 compatibility score (0, 0.5, 1) and the definition of each category.

Compatibility Score	Definition
0	± SC, SC, A, CL, Ge, CL in MN, CL only
0.5	SI/SC, SI/sc, SC/si, CL/CH, CL flowers present, sometimes D, unknown, blanks
1	± SI, SI, CH, D, PD, H, GD, Di, Distylous, Pg, Pa, PD, Gynoecious, GM, CL flowers absent, facultative xenogamy, reverse herkogamous, xenogamous, herkogamy

Table A17. Pollination index version 3 longevity score (0, 0.5, 1) and the definition of each category.

Longevity Score	Definition
0	Perennial
0.5	Biennial, short-lived perennial
1	Annual

Table A18. Pollination index version 3 pollinator specialization score (0, 0.5, 1) and the definition of each category.

Pollinator Specialization Score	Definition
0	Generalist - does not require specific body size or pollination apparatus; no corolla, or corolla very short (less than 3mm)
0.5	Somewhat specialized - not just any insect can pollinate; requires specific body sized insect; flower is somewhat restricted; buzz pollination present but not required; larger "tube" flowers; early spring flowers that are insect pollinated
1	Specialized - requires very specialized pollinator; requires buzz pollination, flowers with very long corollas

Table A19. Pollination index version 3 and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated or entirely self-compatible
0.5-1.5	Least reliant on insect pollinators
2-3	More reliant on insect pollinators
3.5-4	Most reliant on insect pollinators

Version 4

Version 4 follows the same logic as version 3 but includes clonality (Table A20) in the equation for overall score. This results in a range from 0-5 on 0.5 increments (Table A21).

Like version 3, this index places more weight on the compatibility and principal pollen vector, and less on other plant traits. It was determined that we cannot reliably or confidently make assumptions that one trait is more important towards overall pollination than another and that versions 3 and 4 took PG data beyond our comfortability. Both versions 3 and 4 fail to consider insect pollinated plants that are self-compatible, and missed plants that rely on insects for greater fitness, like many Orchidaceae species.

Table A20. Pollination index version 4 clonality score (0, 0.5, 1) and the definition of each category

Clonality Score	Definition
0	Present
0.5	Weakly clonal or unknown
1	Absent

Table A21. Pollination index version 4 and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated or entirely self-compatible
0.5-2	Least reliant on insect pollinators
2.5-4	More reliant on insect pollinators
4.5-5	Most reliant on insect pollinators

Version 5

This version takes the sum of four plant traits or trait groupings: principal pollen vector score (Table 8), compatibility score (Table A9), longevity and clonality score (Table A22), and pollination specialization score (Table A12). The index values have a range of 0, 3-11, where all wind and water pollinated plants receive an automatic index of 0 (Table A16).

Table A22. Pollination index version 5 longevity and clonality score (1, 2, 3) and the definition of each category.

Longevity + Clonality Score	Definition
1	Perennial and clonal, weakly clonal, or unknown clonality
2	Perennial and non-clonal
3	Annual, biennial, short-lived perennial or other intermediate longevity

Table A23. Pollination index version 5 and the definition of each range.

Pollination Index	Definition
0	Exclusively wind or water pollinated
3-5	Least reliant on insect pollinators
6-8	More reliant on insect pollinators
9-11	Most reliant on insect pollinators

Version 6

Version 6 was based on a similar attempt to version 5 to apply a pollination index to plants based on the relative ability of plants to self-pollinate (Clough, 2014). This is the version we used in our final product. This version uses the same scoring and process as version 5, but subtracts three from all non-zero indices, creating a continuous range from 0-8 (Table 6). This was the version that appealed to most of the plant and insect experts that worked on this project and seemed to capture the diversity in reliance of plants on pollinators in the most instinctual way. The results resonated with the experts and was an attempt to equally weight the various plant attributes rather than providing a greater weight on one or another.

FDn12 Northern Dry-Sand Pine Woodland

Pollinator Resources

Dry jack pine or red pine woodlands on level to gently undulating, sandy outwash or lake plains. Crown and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDn12 include:

Bees:

Andrena melanochroa (Rosaceae)

Andrena erythrogaster (*Salix*)

Osmia inermis (*Vaccinium*)

Butterflies:

Callophrys polios (*Epigaea repens*)

Tharsalea epixanthe (*Vaccinium*)

Chlosyne nycteis (*Eurybia macrophylla*)

Satyrium titus (*Prunus*)

Moths:

Syngrapha rectangula (*Abies balsamea*)

Eulithis explanata (*Vaccinium angustifolium*)

Papaipema baptisiae (*Apocynum androsaemifolium*)



Chlosyne nycteis (silvery checkerspot) uses *Eurybia macrophylla* (large-leaved aster) as a host plant.
Photo: Bob Dunlap

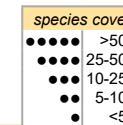


Syngrapha rectangula (salt and pepper looper) uses *Abies balsamea* (balsam fir) as a host plant. Photo: Kyle Johnson

FDn12 Northern Dry-Sand Pine Woodland

Pollinator Resources Table

[FDn12 Class Factsheet](#). Based on 23 plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	96	●●●	SI	Perennial	Present	insects	Early spring insect	5
Common strawberry (<i>Fragaria virginiana</i>)	87	●	SC	Perennial	Present	insects	Early spring insect	3
Cow wheat (<i>Melampyrum lineare</i>)	83	●	SC	Annual	Absent	insects	Somewhat specific insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	78	●●	UNK	Perennial	Present	insects	Early spring insect	4
Twinflower (<i>Linnaea borealis</i>)	78	●●	SC	Perennial	Present	insects	Generalist	2
Bracken (<i>Pteridium aquilinum</i>)	74	●●●●	SC	Perennial	Present	wind, water	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	74	●●	D	Perennial	Present	insects	Generalist	4
Field or Variable pussytoes (<i>Antennaria neglecta</i> or <i>A. neodica</i>)	57	●	A	Perennial	Present	wind	Generalist	0
Sand or Dog violet (<i>Viola adunca</i> or <i>V. conspersa</i>)	52	●	Varies	Perennial	Present	insects	Varies	Varies
Bluebead lily (<i>Clintonia borealis</i>)	52	●	SI	Perennial	Present	insects	Generalist	4
Veiny pea (<i>Lathyrus venosus</i>)	52	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	48	●	SI	Perennial	Present	insects	Generalist	4
Northern or WIREY groundcedar (<i>Diphasiastrum complanatum</i> or <i>D. digitatum</i>)	48	●	SC	Perennial	Present	wind, water	Generalist	0
Hairy goldenrod (<i>Solidago hispida</i>)	48	●	SI	Perennial	Present	insects	Generalist	4
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	43	●	UNK	Perennial	Present	insects	Buzz pollination	5
Lindley's aster (<i>Aster ciliolatus</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Sweet-scented bedstraw (<i>Galium triflorum</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	43	●	SI	Perennial	Present	insects	Somewhat specific insect	5
One-sided pyrola (<i>Pyrola secunda</i>)	39	●	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Bunchberry (<i>Cornus canadensis</i>)	39	●●	SI	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	39	●	SC	Perennial	Present	insects	Generalist	2
Northern bedstraw (<i>Galium boreale</i>)	35	●	SI	Perennial	Present	insects	Generalist	4
Smooth blue aster (<i>Aster laevis</i>)	35	●	SI	Perennial	Present	insects	Generalist	4
Kalm's hawkweed (<i>Hieracium kalmii</i>)	35	●	UNK	Perennial	Absent	insects	Generalist	4
Green-flowered pyrola (<i>Pyrola chlorantha</i>)	30	●	SC	Perennial	Present	insects	Buzz pollination	4
Gaywings (<i>Polygala paucifolia</i>)	30	●●	CH and CL	Annual or	Absent	insects	Somewhat specific insect	6
Bastard toadflax (<i>Comandra umbellata</i>)	30	●	SC	Perennial	Present	insects	Early spring insect	3
Starflower (<i>Trifentalis borealis</i>)	30	●	SI/sc	Perennial	Present	insects	Generalist	3
Gray goldenrod (<i>Solidago nemoralis</i>)	26	●	SI	Perennial	Present	insects	Generalist	4
Large-leaved aster (<i>Aster macrophyllus</i>)	26	●●●	A	Perennial	Present	insects	Generalist	2
Tesselated rattlesnake plantain (<i>Goodyera tesselata</i>)	26	●	SC	Perennial	Present	insects	Generalist	2
Upright bindweed (<i>Calystegia spithamea</i>)	26	●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	87	●●●	UNK	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	65	●	UNK	Perennial	Absent	wind	Generalist	0
Sharp-pointed rice grass (<i>Oryzopsis pungens</i>)	43	●	UNK	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	35	●	SC/si	Perennial	Absent	wind	Generalist	0

Yellow or Scribner's panic grass (<i>Panicum xanthophysum</i> or <i>P. oligosanthes</i>)	18	●	UNK	Perennial	Varies	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	9	●●●	SC	Perennial	Present	wind	Generalist	0
Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	100	●●●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Wintergreen (<i>Gaultheria procumbens</i>)	83	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Pipsissewa (<i>Chimaphila umbellata</i>)	74	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Bearberry (<i>Arctostaphylos uva-ursi</i>)	57	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Trailing arbutus (<i>Epigaea repens</i>)	57	●	GD	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Red raspberry (<i>Rubus idaeus</i>)	35	●	SC	Perennial	Present	insects	Generalist	2
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	35	●	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
Juneberries (<i>Amelanchier</i> spp.)	100	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	96	●	SC	Perennial	Present	insects	Generalist	2
Beaked hazelnut (<i>Corylus cornuta</i>)	91	●●	Di	Perennial	Present	wind	Generalist	0
Bush honeysuckle (<i>Diervilla lonicera</i>)	57	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Prairie willow (<i>Salix humilis</i>)	57	●	D	Perennial	Present	insects	Early spring insect	5
Chokecherry (<i>Prunus virginiana</i>)	48	●	SI	Perennial	Present	insects	Early spring insect	5
Snowberry or Wolfberry (<i>Symphoricarpos albus</i> or <i>S. occidentalis</i>)	22	●	SC	Perennial	Present	insects	Generalist	2
Tree Canopy								
Jack pine	83	●●●●	UNK	Perennial	Absent	wind	Generalist	0
Red pine	48	●●●●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	17	●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	17	●	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	13	●●●	D	Perennial	Present	wind	Generalist	0
White pine	13	●	SI	Perennial	Absent	wind	Generalist	0
White spruce	13	●●●	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	9	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	4	●●●	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Jack pine	39	●●●	UNK	Perennial	Absent	wind	Generalist	0
Red pine	43	●●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	39	●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	22	●	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	13	●	D	Perennial	Present	wind	Generalist	0
White pine	17	●	SI	Perennial	Absent	wind	Generalist	0
White spruce	13	●●●	UNK	Perennial	Absent	wind	Generalist	0

Black spruce	9	••	UNK	Perennial	Absent	wind	Generalist	0
Red maple	13	••	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	17	•	SI	Perennial	Present	wind	Generalist	0
Bur oak	9	•	SI	Perennial	Present	wind	Generalist	0
Tree Shrublayer								
Jack pine	22	•	UNK	Perennial	Absent	wind	Generalist	0
Red pine	22	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	61	••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	26	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	22	•	D	Perennial	Present	wind	Generalist	0
White pine	35	•	SI	Perennial	Absent	wind	Generalist	0
White spruce	17	•	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	9	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	30	•	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	26	••	SI	Perennial	Present	wind	Generalist	0
Bur oak	39	•	SI	Perennial	Present	wind	Generalist	0

FDn22 Northern Dry-Bedrock Pine (Oak) Woodland Pollinator Resources

Dry pine or oak woodlands on shallow, excessively drained, loamy soils on bedrock ridges and hillsides or on rock ledges and terraces adjacent to rivers. Crown and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDn22 include:

Bees:

Megachile campanulae (*Campanula*)

Osmia laticeps (*Vaccinium*)

Andrena hirticincta (*Solidago*)

Butterflies:

Callophrys eryphon (*Pinus strobus*)

Erynnis icelus (*Salix*)

Colias interior (*Vaccinium*)

Moths:

Sitochroa chortalis (*Comandra umbellata*)

Caloptilia cornusella (*Cornus canadensis*)

Eulithis explanata (*Vaccinium angustifolium*)

Hemaris aethra (*Diervilla lonicera*)



Colias interior (pink-edged sulphur) uses *Vaccinium* (blueberry, cranberry) species as a host plant.

Photo: Bob Dunlap

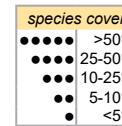


Andrena hirticincta uses *Solidago* (goldenrod) species as a host plant. Photo: Heather Holm

FDn22 Northern Dry-Bedrock Pine (Oak) Woodland

Pollinator Resources Table

[FDn22 Class Factsheet](#). Based on 47 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	98	●	SI	Perennial	Present	insects	Early spring insect	5
Large-leaved aster (<i>Aster macrophyllus</i>)	87	●●●	A	Perennial	Present	insects	Generalist	2
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	87	●●	D	Perennial	Present	insects	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	74	●●●	SC	Perennial	Present	wind, water	Generalist	0
Cow wheat (<i>Melampyrum lineare</i>)	57	●	SC	Annual	Absent	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	55	●	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	47	●	SC	Perennial	Present	insects	Early spring insect	3
Field or Variable pussytoes (<i>Antennaria neglecta</i> or <i>A. neodica</i>)	40	●	A	Perennial	Present	wind	Generalist	0
Common polypody (<i>Polypodium virginianum</i>)	40	●	SC	Perennial	Present	wind, water	Generalist	0
Bunchberry (<i>Cornus canadensis</i>)	38	●	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trifoliate borealis</i>)	32	●	SI/sc	Perennial	Present	insects	Generalist	3
Bastard toadflax (<i>Comandra umbellata</i>)	30	●	SC	Perennial	Present	insects	Early spring insect	3
American vetch (<i>Vicia americana</i>)	28	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Veiny pea (<i>Lathyrus venosus</i>)	23	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Rough hawkweed (<i>Hieracium umbellatum</i>)	23	●	SI	Perennial	Absent	insects	Generalist	5
Harebell (<i>Campanula rotundifolia</i>)	21	●	± SI	Perennial	Present	insects	Generalist	4
Pale corydalis (<i>Corydalis sempervirens</i>)	21	●	SC	Biennial	Absent	insects	Early spring insect, Somewhat specific insect	5
Pale vetchling (<i>Lathyrus ochroleucus</i>)	21	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Kalm's hawkweed (<i>Hieracium kalmii</i>)	19	●	UNK	Perennial	Absent	insects	Generalist	4
Spinulose shield fern or Glandular wood fern (<i>Dryopteris carthusiana</i> or <i>D. intermedia</i>)	19	●	SC	Perennial	Present	wind, water	Generalist	0
Bluebead lily (<i>Clintonia borealis</i>)	17	●	SI	Perennial	Present	insects	Generalist	4
Columbine (<i>Aquilegia canadensis</i>)	17	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Rusty woodsia (<i>Woodsia ilvensis</i>)	17	●	SC	Perennial	Present	wind, water	Generalist	0
Sticky hawkweed (<i>Hieracium scabrum</i>)	17	●	UNK	Perennial	Absent	insects	Generalist	4
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	15	●	SC	Perennial	Present	wind, water	Generalist	0
Gray goldenrod (<i>Solidago nemoralis</i>)	15	●	SI	Perennial	Present	insects	Generalist	4
Twinflower (<i>Linnaea borealis</i>)	13	●●	SC	Perennial	Present	insects	Generalist	2
Grasses and Sedges								
Poverty grass (<i>Danthonia spicata</i>)	81	●●	SC/si	Perennial	Absent	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	53	●	UNK	Perennial	Absent	wind	Generalist	0
Sharp-pointed rice grass (<i>Oryzopsis pungens</i>)	36	●	UNK	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	36	●	UNK	Perennial	Absent	wind	Generalist	0
Twin bentgrass (<i>Agrostis hyemalis</i>)	30	●	SI	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	26	●	UNK	Perennial	Weakly	wind	Generalist	0
Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	98	●●●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Wintergreen (<i>Gaultheria procumbens</i>)	72	●	SC	Perennial	Present	insects	Somewhat specific insect	3

Velvet-leaved blueberry (I)	66	••	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Red raspberry (<i>Rubus idaeus</i>)	47	•	SC	Perennial	Present	insects	Generalist	2
Sweet fern (<i>Comptonia peregrina</i>)	32	••	UNK	Perennial	Present	wind	Generalist	0
Bearberry (<i>Arctostaphylos uva-ursi</i>)	28	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Shrubs								
Juneberries (<i>Amelanchier</i> spp.)	94	••	Varies	Perennial	Present	insects	Early spring insect	Varies
Bush honeysuckle (<i>Diervilla lonicera</i>)	81	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Beaked hazelnut (<i>Corylus cornuta</i>)	51	••	Di	Perennial	Present	wind	Generalist	0
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	49	•	SC	Perennial	Present	insects	Generalist	2
Prairie willow (<i>Salix humilis</i>)	43	•	D	Perennial	Present	insects	Early spring insect	5
Bush juniper (<i>Juniperus communis</i>)	36	•••	D	Perennial	Absent	wind	Generalist	0
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	30	•	UNK	Perennial	Present	insects	Generalist	3
Fly honeysuckle (<i>Lonicera canadensis</i>)	26	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Pin cherry (<i>Prunus pensylvanica</i>)	23	•	SI	Perennial	Present	insects	Early spring insect	5
Sand cherry (<i>Prunus pumila</i>)	17	•	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Red pine	43	•••	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	30	••••	UNK	Perennial	Absent	wind	Generalist	0
White pine	28	•••	SI	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	13	••	D	Perennial	Present	wind	Generalist	0
Paper birch	13	•••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	9	••	SI	Perennial	Present	wind	Generalist	0
Red maple	9	••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	9	•	D	Perennial	Present	wind	Generalist	0
Northern pin oak	4	••••	SI	Perennial	Present	wind	Generalist	0
Balsam fir	4	•	UNK	Perennial	Absent	wind	Generalist	0
White spruce	2	•	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	2	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
Mountain ash	-	-	A	Perennial	Weakly	insects	Generalist	2
Tree Subcanopy								
Red pine	43	•••	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	32	•••	UNK	Perennial	Absent	wind	Generalist	0
White pine	49	••	SI	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	17	••	D	Perennial	Present	wind	Generalist	0
Paper birch	51	••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	13	••	SI	Perennial	Present	wind	Generalist	0
Red maple	38	••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	30	••	D	Perennial	Present	wind	Generalist	0
Northern pin oak	36	••••	SI	Perennial	Present	wind	Generalist	0

Balsam fir	47	•	UNK	Perennial	Absent	wind	Generalist	0
White spruce	23	•	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	13	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	9	••••	SI	Perennial	Present	wind	Generalist	0
Mountain ash	2	•	A	Perennial	Weakly	insects	Generalist	2
Tree Shrub Layer								
Red pine	26	•	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	21	•	UNK	Perennial	Absent	wind	Generalist	0
White pine	66	•	SI	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	21	•	D	Perennial	Present	wind	Generalist	0
Paper birch	60	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	28	•	SI	Perennial	Present	wind	Generalist	0
Red maple	87	•	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	36	•	D	Perennial	Present	wind	Generalist	0
Northern pin oak	49	••	SI	Perennial	Present	wind	Generalist	0
Balsam fir	55	•	UNK	Perennial	Absent	wind	Generalist	0
White spruce	38	•	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	9	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	15	•	SI	Perennial	Present	wind	Generalist	0
Mountain ash	21	•	A	Perennial	Weakly	insects	Generalist	2

FDn32 Northern Poor Dry-Mesic Mixed Woodland

Pollinator Resources

Dry-mesic pine or black spruce woodlands, often mixed with paper birch and quaking aspen. Most common on relatively nutrient-poor, shallow, loamy soils over bedrock, but also present on sandy lacustrine plains. Crown and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDn32 include:

Bees:

Andrena bisalicis (*Salix*)
Andrena clarkella (*Salix*)
Colletes validus (*Vaccinium*)
Andrena bradleyi (*Vaccinium*)



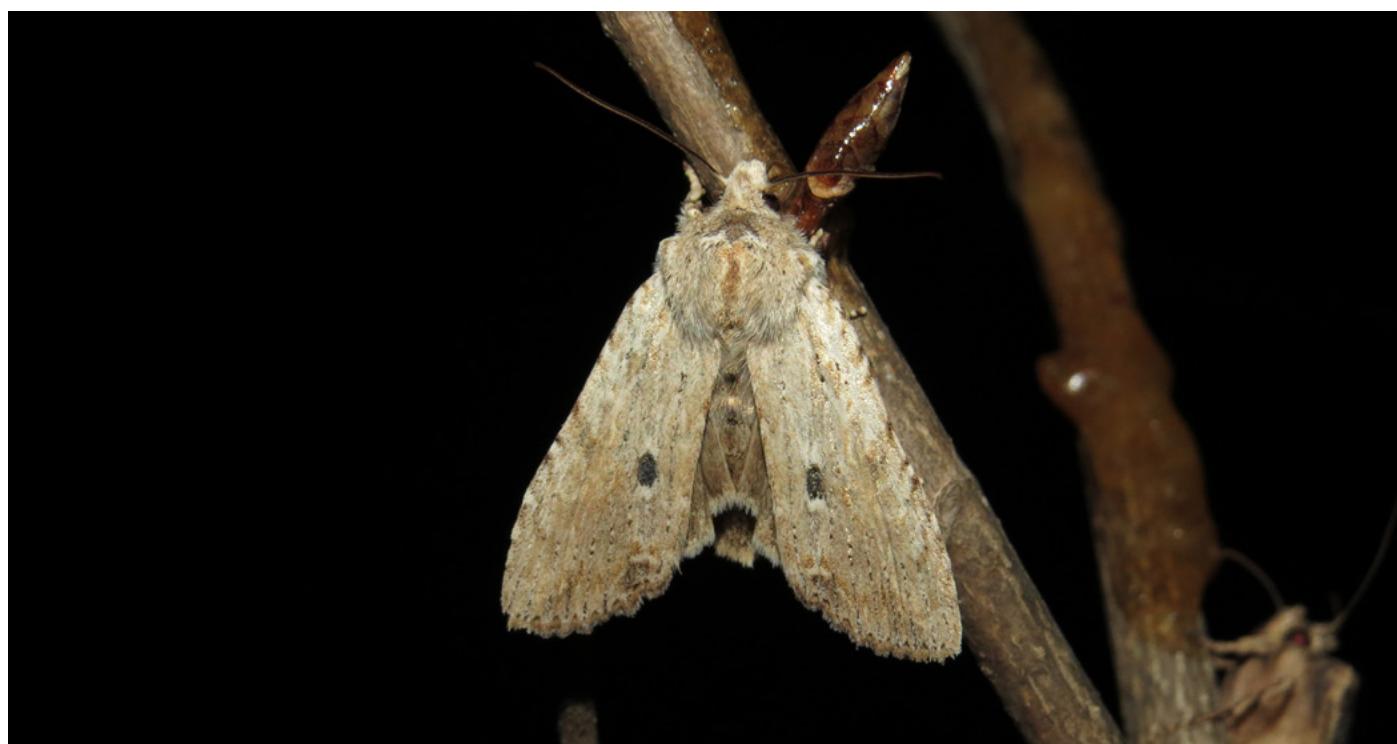
Colletes validus (blueberry cellophane bee) uses *Vaccinium* (blueberry, cranberry) species as a host plant. Photo: Michael Veit

Butterflies:

Satyrium titus (*Prunus*)
Phyciodes tharos (*Eurybia macrophylla*)
Colias interior (*Vaccinium*)

Moths:

Lithophane patefacta (*Acer rubrum*)
Caloptilia cornusella (*Cornus canadensis*)
Hemaris aethra (*Diervilla lonicera*)
Amphipyra pyramidoides (*Corylus cornuta*)

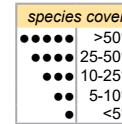


Lithophane patefacta (dimorphic pinion) uses *Acer rubrum* (red maple) as a host plant. Photo: Kyle Johnson

FDn32 Northern Poor Dry-Mesic Mixed Woodland

Pollinator Resources Table

FDn32 Class Factsheet. Based on 80 plots. November 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	96	••	SI	Perennial	Present	insects	Early spring insect	5
Bunchberry (<i>Cornus canadensis</i>)	89	•••	SI	Perennial	Present	insects	Generalist	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	89	••	D	Perennial	Present	insects	Generalist	4
Twinflower (<i>Linnaea borealis</i>)	81	•	SC	Perennial	Present	insects	Generalist	2
Large-leaved aster (<i>Aster macrophyllus</i>)	75	•••	A	Perennial	Present	insects	Generalist	2
Bluebead lily (<i>Clintonia borealis</i>)	70	•	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trientalis borealis</i>)	63	•	SI/sc	Perennial	Present	insects	Generalist	3
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	56	•	SC	Perennial	Present	wind, water	Generalist	0
Bracken (<i>Pteridium aquilinum</i>)	49	•••	SC	Perennial	Present	wind, water	Generalist	0
Running clubmoss (<i>Lycopodium clavatum</i>)	45	•	SC	Perennial	Present	wind, water	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	43	•	SC	Perennial	Present	insects	Generalist	2
Cow wheat (<i>Melampyrum lineare</i>)	41	•	SC	Annual	Absent	insects	Somewhat specific insect	5
Common strawberry (<i>Fragaria virginiana</i>)	39	••	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	34	•	UNK	Perennial	Present	insects	Early spring insect	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	28	•	UNK	Perennial	Present	insects	Generalist	3
Common polypody (<i>Polypodium virginianum</i>)	26	•	SC	Perennial	Present	wind, water	Generalist	0
Bristly clubmoss (<i>Lycopodium annotinum</i>)	24	•	SC	Perennial	Present	wind, water	Generalist	0
Spinulose shield fern or Glandular wood fern (<i>Dryopteris carthusiana</i> or <i>D. intermedia</i>)	24	•	SC	Perennial	Present	wind, water	Generalist	0
Rose twistedstalk (<i>Streptopus roseus</i>)	21	•	UNK	Perennial	Present	insects	Early spring insect	4
Goldthread (<i>Coptis trifolia</i>)	21	•	UNK	Perennial	Present	insects	Early spring insect	4
Fireweed (<i>Epilobium angustifolium</i>)	21	•	SC	Perennial	Present	insects	Generalist	2
Northern or WIREY groundcedar (<i>Diphasiastrum complanatum</i> or <i>D. digitatum</i>)	15	•	SC	Perennial	Present	wind, water	Generalist	0
Woodland horsetail (<i>Equisetum sylvaticum</i>)	15	•	SC	Perennial	Present	wind, water	Generalist	0
Lindley's aster (<i>Aster ciliolatus</i>)	15	•	UNK	Perennial	Present	insects	Generalist	3
Green-flowered pyrola (<i>Pyrola chlorantha</i>)	15	•	SC	Perennial	Present	insects	Buzz pollination	4
Lady fern (<i>Athyrium filix-femina</i>)	14	•	SC	Perennial	Present	wind, water	Generalist	0
Wood strawberry (<i>Fragaria vesca</i>)	13	••	SC	Perennial	Present	insects	Early spring insect	3
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	53	••	UNK	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	23	•	SC/si	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	21	•	UNK	Perennial	Absent	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	18	••	A	Perennial	Present	wind	Generalist	0
Sharp-pointed rice grass (<i>Oryzopsis pungens</i>)	16	•	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	10	•••	SC	Perennial	Present	wind	Generalist	0

Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	88	•••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	61	••	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Red raspberry (<i>Rubus idaeus</i>)	59	••	SC	Perennial	Present	insects	Generalist	2
Wintergreen (<i>Gaultheria procumbens</i>)	35	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Pipsissewa (<i>Chimaphila umbellata</i>)	29	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Labrador tea (<i>Ledum groenlandicum</i>)	23	••	SC	Perennial	Present	insects	Early spring insect	3
Sweet fern (<i>Comptonia peregrina</i>)	23	••	UNK	Perennial	Present	wind	Generalist	0
Creeping snowberry (<i>Gaultheria hispida</i>)	16	•	UNK	Perennial	Present	insects	Generalist	3
Shrubs								
Juneberries (<i>Amelanchier</i> spp.)	88	••	Varies	Perennial	Present	insects	Early spring insect	Varies
Bush honeysuckle (<i>Diervilla lonicera</i>)	86	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Beaked hazelnut (<i>Corylus cornuta</i>)	69	•••	Di	Perennial	Present	wind	Generalist	0
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	61	••	SC	Perennial	Present	insects	Generalist	2
Fly honeysuckle (<i>Lonicera canadensis</i>)	40	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Green alder (<i>Alnus viridis</i>)	35	•••	Di	Perennial	Present	wind	Generalist	0
Bebb's willow (<i>Salix bebbiana</i>)	23	••	D	Perennial	Present	insects	Early spring insect	5
Chokecherry (<i>Prunus virginiana</i>)	20	•	SI	Perennial	Present	insects	Early spring insect	5
Mountain maple (<i>Acer spicatum</i>)	18	••	SI	Perennial	Absent	insects	Early spring insect	6
Prairie willow (<i>Salix humilis</i>)	11	•	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Jack pine	55	••••	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	53	•••	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	35	•••	D	Perennial	Present	wind	Generalist	0
Paper birch	34	••	Di	Perennial	Present	wind	Generalist	0
Red pine	28	••••	UNK	Perennial	Absent	wind	Generalist	0
White pine	26	•••	SI	Perennial	Absent	wind	Generalist	0
Balsam fir	26	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	10	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	6	•	D	Perennial	Absent	insects	Early spring insect	6
Mountain ashes	-	-	A	Perennial	Weakly	insects	Generalist	2
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Jack pine	26	•••	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	61	•••	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	41	•••	D	Perennial	Present	wind	Generalist	0
Paper birch	61	••	Di	Perennial	Present	wind	Generalist	0
Red pine	15	••	UNK	Perennial	Absent	wind	Generalist	0
White pine	30	•	SI	Perennial	Absent	wind	Generalist	0

Balsam fir	58	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	26	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	16	••	D	Perennial	Absent	insects	Early spring insect	6
Mountain ashes	13	•	A	Perennial	Weakly	insects	Generalist	2
White cedar	8	••	UNK	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Jack pine	11	••	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	48	••	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	51	••	D	Perennial	Present	wind	Generalist	0
Paper birch	53	••	Di	Perennial	Present	wind	Generalist	0
Red pine	11	•	UNK	Perennial	Absent	wind	Generalist	0
White pine	41	•	SI	Perennial	Absent	wind	Generalist	0
Balsam fir	69	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	29	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	43	•	D	Perennial	Absent	insects	Early spring insect	6
Mountain ashes	56	•	A	Perennial	Weakly	insects	Generalist	2
White cedar	10	••	UNK	Perennial	Absent	wind	Generalist	0

FDn33 Northern Dry-Mesic Mixed Woodland Pollinator Resources

Dry-mesic conifer, conifer-hardwood, or hardwood woodlands dominated by red pine, white pine, jack pine, black spruce, quaking aspen, or paper birch. Most common on sandy soils but also present on shallow, loamy soils over bedrock. Crown and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDn33 include:

Bees:

Andrena melanochroa (Rosaceae)
Andrena frigida (*Salix*)
Andrena persimulata (*Cornus* [*Swida*])

Butterflies:

Satyrium titus (*Prunus*)
Phyciodes tharos (*Eurybia macrophylla*)
Oeneis macounii (*Oryzopsis asperifolia*)
Erynnis icelus (*Populus tremuloides*)

Moths:

Amphipyra pyramidoides (*Corylus cornuta*)
Cerastis tenebrifera (*Anemone quinquefolia*)
Phyllonorycter apparella (*Populus tremuloides*)



Cerastis tenebrifera (reddish speckled dart) uses *Anemone quinquefolia* (wood anemone) as a host plant. Photo: Kyle Johnson

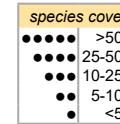


Andrena melanochroa (rose miner bee) uses species in the Rosaceae (rose) family as a host plant.
Photo: Max McCarthy

FDn33 Northern Dry-Mesic Mixed Woodland

Pollinator Resources Table

FDn33 Class Factsheet. Based on 124 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	98	●●●	SI	Perennial	Present	insects	Early spring insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	91	●●	D	Perennial	Present	insects	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	84	●●●	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	84	●●●	A	Perennial	Present	insects	Generalist	2
Common strawberry (<i>Fragaria virginiana</i>)	81	●	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	74	●	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	70	●	UNK	Perennial	Present	insects	Generalist	3
Dwarf raspberry (<i>Rubus pubescens</i>)	68	●●	SC	Perennial	Present	insects	Generalist	2
Bunchberry (<i>Cornus canadensis</i>)	66	●●	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trifolium borealis</i>)	65	●	SI/sc	Perennial	Present	insects	Generalist	3
Bluebead lily (<i>Clintonia borealis</i>)	65	●●	SI	Perennial	Present	insects	Generalist	4
Rose twistedstalk (<i>Streptopus roseus</i>)	63	●	UNK	Perennial	Present	insects	Early spring insect	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	50	●	SI	Perennial	Present	insects	Generalist	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	44	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Lindley's aster (<i>Aster ciliolatus</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Veiny pea (<i>Lathyrus venosus</i>)	42	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Twinflower (<i>Linnaea borealis</i>)	42	●●	SC	Perennial	Present	insects	Generalist	2
One-sided pyrola (<i>Pyrola secunda</i>)	28	●	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Red baneberry (<i>Actaea rubra</i>)	28	●	SC	Perennial	Present	insects	Early spring insect	3
Columbine (<i>Aquilegia canadensis</i>)	28	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Pale bellwort (<i>Uvularia sessilifolia</i>)	27	●	SI	Perennial	Present	insects	Early spring insect	5
Early meadow-rue (<i>Thalictrum dioicum</i>)	27	●	SI	Perennial	Present	wind	Generalist	0
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	24	●	SC	Perennial	Present	wind, water	Generalist	0
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	23	●	UNK	Perennial	Present	insects	Buzz pollination	5
Northern bedstraw (<i>Galium boreale</i>)	23	●●	SI	Perennial	Present	insects	Generalist	4
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	23	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	22	●	UNK	Perennial	Absent	insects	Generalist	4
Cow wheat (<i>Melampyrum lineare</i>)	21	●	SC	Annual	Absent	insects	Somewhat specific insect	5
American vetch (<i>Vicia americana</i>)	18	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	17	●	SI	Perennial	Present	insects	Early spring insect	5
Spinulose shield fern or Glandular wood fern*	17	●	SC	Perennial	Present	wind, water	Generalist	0
Gaywings (<i>Polygala paucifolia</i>)	15	●	CH and CL	Annual or perennial	Absent	insects	Somewhat specific insect	6
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	77	●●●	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	29	●●	SC	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	23	●●	UNK	Perennial	Absent	wind	Generalist	0

Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	81	••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Red raspberry (<i>Rubus idaeus</i>)	52	•	SC	Perennial	Present	insects	Generalist	2
Wintergreen (<i>Gaultheria procumbens</i>)	40	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	24	•	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	95	••••	Di	Perennial	Present	wind	Generalist	0
Juneberries (<i>Amelanchier</i> spp.)	86	••	Varies	Perennial	Present	insects	Early spring insect	Varies
Bush honeysuckle (<i>Diervilla lonicera</i>)	80	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Fly honeysuckle (<i>Lonicera canadensis</i>)	60	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Chokecherry (<i>Prunus virginiana</i>)	58	•	SI	Perennial	Present	insects	Early spring insect	5
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	52	•	SC	Perennial	Present	insects	Generalist	2
Round-leaved dogwood (<i>Cornus rugosa</i>)	34	••	UNK	Perennial	Present	insects	Generalist	3
Mountain maple (<i>Acer spicatum</i>)	31	•••	SI	Perennial	Absent	insects	Early spring insect	6
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	28	•	UNK	Perennial	Present	insects	Generalist	3
Prairie willow (<i>Salix humilis</i>)	22	•	D	Perennial	Present	insects	Early spring insect	5
Hairy honeysuckle (<i>Lonicera hirsuta</i>)	21	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Green alder (<i>Alnus viridis</i>)	18	••	Di	Perennial	Present	wind	Generalist	0
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	13	••	SC	Perennial	Present	insects	Generalist	2
Tree Canopy								
Red pine	49	••••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	47	•••	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	35	•••	D	Perennial	Present	wind	Generalist	0
White pine	31	••••	SI	Perennial	Absent	wind	Generalist	0
Red maple	27	••	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	20	•••	UNK	Perennial	Absent	wind	Generalist	0
Jack Pine	18	•••	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	15	•••	D	Perennial	Present	wind	Generalist	0
White spruce	12	•	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	11	•	SI	Perennial	Present	wind	Generalist	0
Black spruce	6	••••	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Red pine	27	•••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	65	•••	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	30	•••	D	Perennial	Present	wind	Generalist	0
White pine	19	••	SI	Perennial	Absent	wind	Generalist	0
Red maple	51	•••	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	38	•••	UNK	Perennial	Absent	wind	Generalist	0
Jack Pine	8	••	UNK	Perennial	Absent	wind	Generalist	0

Big-toothed aspen	15	•••	D	Perennial	Present	wind	Generalist	0
White spruce	15	••	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	31	••	SI	Perennial	Present	wind	Generalist	0
Black spruce	7	••	UNK	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Red pine	6	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	32	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	50	•	D	Perennial	Present	wind	Generalist	0
White pine	39	•	SI	Perennial	Absent	wind	Generalist	0
Red maple	69	••	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	65	•	UNK	Perennial	Absent	wind	Generalist	0
Jack Pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	9	•	D	Perennial	Present	wind	Generalist	0
White spruce	22	•	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	44	•	SI	Perennial	Present	wind	Generalist	0
Black spruce	3	•	UNK	Perennial	Absent	wind	Generalist	0

*Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*).

FDn43 Northern Mesic Mixed Forest

Pollinator Resources

Mesic pine, aspen, white cedar, or birch forests on loamy soils over bedrock in scoured bedrock uplands and on loamy, rocky, or sandy soils on glacial moraines, till plains, and outwash plains. Crown and severe surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDn43 include:

Bees:

Andrena erythrogaster (*Salix*)
Andrena melanochroa (*Rosaceae*)
Andrena carolina (*Vaccinium*)
Osmia laticeps (*Vaccinium*)



Butterflies:

Chlosyne nycteis (*Eurybia macrophylla*)
Oeneis macounii (*Oryzopsis asperifolia*)
Erynnis icelus (*Populus tremuloides*)

Moths:

Lithophane patefacta (*Acer rubrum*)
Hemaris aethra (*Diervilla lonicera*)
Actias luna (*Betula papyrifera*)

Andrena erythrogaster (red-bellied miner bee) uses *Salix* (willow) species as a host plant. Photo: Max McCarthy

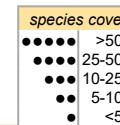


Actias luna (luna moth) uses *Betula papyrifera* (paper birch) as a host plant. Photo: Kyle Johnson

FDn43 Northern Mesic Mixed Forest

Pollinator Resources Table

FDn43 Class Factsheet. Based on 201 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	91	••	D	Perennial	Present	insects	Generalist	5
Large-leaved aster (<i>Aster macrophyllus</i>)	89	••••	A	Perennial	Present	insects	Generalist	4
Bluebead lily (<i>Clintonia borealis</i>)	88	•	SI	Perennial	Present	insects	Generalist	0
Bunchberry (<i>Cornus canadensis</i>)	87	•	SI	Perennial	Present	insects	Generalist	2
Canada mayflower (<i>Maianthemum canadense</i>)	87	•	SI	Perennial	Present	insects	Early spring insect	3
Starflower (<i>Trifentalis borealis</i>)	80	•	SI/sc	Perennial	Present	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	71	•	UNK	Perennial	Present	insects	Generalist	3
Rose twistedstalk (<i>Streptopus roseus</i>)	69	•	UNK	Perennial	Present	insects	Early spring insect	2
Dwarf raspberry (<i>Rubus pubescens</i>)	67	•	SC	Perennial	Present	insects	Generalist	4
Twinflower (<i>Linnaea borealis</i>)	60	•	SC	Perennial	Present	insects	Generalist	3
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	54	•	SC	Perennial	Present	wind, water	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	47	•••	SC	Perennial	Present	wind, water	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	46	•	SC	Perennial	Present	insects	Early spring insect	4
Wood anemone (<i>Anemone quinquefolia</i>)	44	•	UNK	Perennial	Present	insects	Early spring insect	5
Spinulose shield fern or Glandular wood fern*	39	•	SC	Perennial	Present	wind, water	Generalist	3
Red baneberry (<i>Actaea rubra</i>)	34	•	SC	Perennial	Present	insects	Early spring insect	5
One-sided pyrola (<i>Pyrola secunda</i>)	30	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	2
Running clubmoss (<i>Lycopodium clavatum</i>)	29	•	SC	Perennial	Present	wind, water	Generalist	4
Naked miterwort (<i>Mitella nuda</i>)	26	•	UNK	Perennial	Present	insects	Early spring insect	3
Common oak fern (<i>Gymnocarpium dryopteris</i>)	26	•	SC	Perennial	Present	wind, water	Generalist	3
Lady fern (<i>Athyrium filix-femina</i>)	22	•	SC	Perennial	Present	wind, water	Generalist	5
Bristly clubmoss (<i>Lycopodium annotinum</i>)	21	••	SC	Perennial	Present	wind, water	Generalist	0
Goldthread (<i>Coptis trifolia</i>)	20	•	UNK	Perennial	Present	insects	Early spring insect	0
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	17	•	SI	Perennial	Present	insects	Generalist	5
Palmate sweet coltsfoot (<i>Petasites frigidus</i>)	17	•	D	Perennial	Present	insects	Early spring insect	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	17	•	SI	Perennial	Present	insects	Somewhat specific insect	4
Common polypody (<i>Polypodium virginianum</i>)	15	•	SC	Perennial	Present	wind, water	Generalist	4
Kidney-leaved violet (<i>Viola renifolia</i>)	15	•	CL flowers present	Perennial	Present	insects	Early spring insect	5
Shining firmoss (<i>Huperzia lucidula</i>)	14	••	SC	Perennial	Present	wind, water	Generalist	5
Veiny pea (<i>Lathyrus venosus</i>)	14	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Alpine enchanter's nightshade (<i>Circaeaa alpina</i>)	12	•	SC	Perennial	Present	insects	Generalist	0
Cow wheat (<i>Melampyrum lineare</i>)	12	•	SC	Annual	Absent	insects	Somewhat specific insect	6
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	58	•	UNK	Perennial	Absent	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	19	•••	A	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	18	•	SC	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	17	•	UNK	Perennial	Absent	wind	Generalist	0
Drooping wood sedge (<i>Carex arctata</i>)	16	•	SC	Perennial	Present	wind	Generalist	0

Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	38	•	SC	Perennial	Present	insects	Generalist	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	36	•	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	2
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	36	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Thimbleberry (<i>Rubus parviflorus</i>)	30	••	SI	Perennial	Present	insects	Generalist	3
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	93	•••	Di	Perennial	Present	wind	Generalist	0
Fly honeysuckle (<i>Lonicera canadensis</i>)	83	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Mountain maple (<i>Acer spicatum</i>)	77	•••	SI	Perennial	Absent	insects	Early spring insect	6
Bush honeysuckle (<i>Diervilla lonicera</i>)	67	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Juneberries (<i>Amelanchier spp.</i>)	64	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	33	•	SC	Perennial	Present	insects	Generalist	2
Round-leaved dogwood (<i>Cornus rugosa</i>)	25	•	UNK	Perennial	Present	insects	Generalist	3
Chokecherry (<i>Prunus virginiana</i>)	24	•	SI	Perennial	Present	insects	Early spring insect	5
Hairy honeysuckle (<i>Lonicera hirsuta</i>)	22	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	15	•	UNK	Perennial	Present	insects	Generalist	3
Prairie willow (<i>Salix humilis</i>)	7	••	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Paper birch	69	•••	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	46	•••	D	Perennial	Present	wind	Generalist	0
Balsam fir	46	•••	UNK	Perennial	Absent	wind	Generalist	0
White pine	39	••••	SI	Perennial	Absent	wind	Generalist	0
White spruce	36	••	UNK	Perennial	Absent	wind	Generalist	0
Red pine	22	••••	UNK	Perennial	Absent	wind	Generalist	0
White cedar	20	••••	UNK	Perennial	Absent	wind	Generalist	0
Red maple	16	••	D	Perennial	Absent	insects	Early spring insect	6
Black spruce	11	••	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	5	••	UNK	Perennial	Absent	wind	Generalist	0
Mountain ashes	1	•	A	Perennial	Weakly	insects	Generalist	2
Tree Subcanopy								
Paper birch	62	••	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	37	•••	D	Perennial	Present	wind	Generalist	0
Balsam fir	74	•••	UNK	Perennial	Absent	wind	Generalist	0
White pine	18	•	SI	Perennial	Absent	wind	Generalist	0
White spruce	40	••	UNK	Perennial	Absent	wind	Generalist	0
Red pine	2	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	24	•••	UNK	Perennial	Absent	wind	Generalist	0
Red maple	25	••	D	Perennial	Absent	insects	Early spring insect	6
Black spruce	14	••	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	2	••	UNK	Perennial	Absent	wind	Generalist	0

Mountain ashes	10	•	A	Perennial	Weakly	insects	Generalist	2
Tree Shrub Layer								
Paper birch	37	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	50	•	D	Perennial	Present	wind	Generalist	0
Balsam fir	90	••	UNK	Perennial	Absent	wind	Generalist	0
White pine	38	•	SI	Perennial	Absent	wind	Generalist	0
White spruce	46	•	UNK	Perennial	Absent	wind	Generalist	0
Red pine	2	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	18	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	40	••	D	Perennial	Absent	insects	Early spring insect	6
Black spruce	13	•	UNK	Perennial	Absent	wind	Generalist	0
Jack pine	1	•	UNK	Perennial	Absent	wind	Generalist	0
Mountain ashes	58	•	A	Perennial	Weakly	insects	Generalist	2

*Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*).

FDs27 Southern Dry-Mesic Pine-Oak Woodland

Pollinator Resources

Dry-mesic (or dry) hardwood or pine-hardwood woodlands on sand deposits, primarily in the bluffs of southeastern Minnesota.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDs27 include:

Bees:

Andrena wilkella (Fabaceae)
Andrena platyparia (Cornus [Swida])
Perdita octomaculata (Solidago)
Colletes brevicornis (Campanula)
Colletes mandibularis (Amorpha)

Butterflies:

Polygonia progne (Ribes)
Satyrium titus (Prunus)

Moths:

Pygarctia spraguei (Euphorbia corollata)
Phyllonorycter lucetiella (Tilia americana)
Phosphila turbulenta (Smilax tamnoides)



Perdita octomaculata (eight-spotted fairy bee) uses *Solidago* (goldenrod) species as a host plant. Photo: Max McCarthy

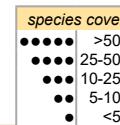


Satyrium titus (coral hairstreak) uses *Prunus* (plum, cherry) species as a host plant. Photo: Bob Dunlap

FDs27 Southern Dry-Mesic Pine-Oak Woodland

Pollinator Resources Table

FDs27 Class Factsheet. Based on 13 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	85	●	D	Perennial	Absent	insects	Generalist	5
Northern bedstraw (<i>Galium boreale</i>)	85	●	SI	Perennial	Present	insects	Generalist	4
Columbine (<i>Aquilegia canadensis</i>)	77	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Hog peanut (<i>Amphicarpa bracteata</i>)	77	●	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Lopseed (<i>Phryma leptostachya</i>)	69	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Bracken (<i>Pteridium aquilinum</i>)	69	●●	SC	Perennial	Present	wind, water	Generalist	0
White snakeroot (<i>Eupatorium rugosum</i>)	69	●	UNK	Perennial	Present	insects	Generalist	3
Flowering spurge (<i>Euphorbia corollata</i>)	62	●	SI	Perennial	Present	insects	Generalist	4
Common false Solomon's seal (<i>Smilacina racemosa</i>)	62	●	UNK	Perennial	Present	insects	Early spring insect	4
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	54	●	UNK	Perennial	Absent	insects	Somewhat specific insect	5
White rattlesnake-root (<i>Prenanthes alba</i>)	46	●	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Heart-leaved aster (<i>Aster cordifolius</i>)	46	●	SI	Perennial	Present	insects	Generalist	4
Elliptic shinleaf (<i>Pyrola elliptica</i>)	46	●	UNK	Perennial	Present	insects	Buzz pollination	5
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	46	●	SC	Perennial	Present	insects	Generalist	2
Canada mayflower (<i>Maianthemum canadense</i>)	46	●	SI	Perennial	Present	insects	Early spring insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	46	●	D	Perennial	Present	insects	Generalist	4
Elm-leaved goldenrod (<i>Solidago ulmifolia</i>)	38	●	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	38	●	SC	Perennial	Present	insects	Early spring insect	3
Harebell (<i>Campanula rotundifolia</i>)	38	●	± SI	Perennial	Present	insects	Generalist	4
Gregarious black snakeroot (<i>Sanicula gregaria</i>)	38	●	UNK	Perennial	Absent	insects	Generalist	4
Pussytoes (<i>Antennaria</i> spp.)	38	●	A	Perennial	Present	wind	Generalist	0
Downy rattlesnake plantain (<i>Goodyera pubescens</i>)	38	●	SC	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	38	●	UNK	Perennial	Present	insects	Generalist	3
White avens (<i>Geum canadense</i>)	38	●	UNK	Perennial	Present	insects	Generalist	3
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	31	●	SI	Perennial	Present	insects	Generalist	4
Round-lobed hepatica (<i>Anemone americana</i>)	31	●	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	31	●	UNK	Perennial	Present	insects	Early spring insect	4
Wild geranium (<i>Geranium maculatum</i>)	31	●	SC	Perennial	Present	insects	Early spring insect	3
Shining bedstraw (<i>Galium concinnum</i>)	31	●	UNK	Perennial	Present	insects	Generalist	3
Yarrow (<i>Achillea millefolium</i>)	31	●	SI	Perennial	Present	insects	Generalist	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	31	●	SC	Perennial	Present	wind, water	Generalist	0
Lady fern (<i>Athyrium filix-femina</i>)	31	●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	100	●●●	SC	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	92	●●	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	77	●	D	Perennial	Present	insects	Generalist	4
Greenbrier (<i>Smilax tamnoides</i>)	31	●	D	Perennial	Present	insects	Somewhat specific insect	5

Low Shrubs								
Black raspberry (<i>Rubus occidentalis</i>)	54	••	SC	Perennial	Present	insects	Generalist	2
Red raspberry (<i>Rubus idaeus</i>)	38	••	SC	Perennial	Present	insects	Generalist	2
Pipsissewa (<i>Chimaphila umbellata</i>)	31	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Leadplant (<i>Amorpha canescens</i>)	31	•	SC	Perennial	Present	insects	Generalist	2
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	15	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
American hazelnut (<i>Corylus americana</i>)	92	•••	Di	Perennial	Present	wind	Generalist	0
Missouri gooseberry (<i>Ribes missouriense</i>)	85	••	SI	Perennial	Present	insects	Generalist	4
Prickly ash (<i>Zanthoxylum americanum</i>)	85	••	D	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	77	•	D	Perennial	Present	insects	Generalist	4
Gray dogwood (<i>Cornus racemosa</i>)	62	••	UNK	Perennial	Present	insects	Generalist	3
Chokecherry (<i>Prunus virginiana</i>)	62	••	SI	Perennial	Present	insects	Early spring insect	5
Pagoda dogwood (<i>Cornus alternifolia</i>)	46	•	UNK	Perennial	Present	insects	Generalist	3
Pin cherry (<i>Prunus pensylvanica</i>)	23	•••	SI	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
White pine	46	••••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	46	••	Di	Perennial	Present	wind	Generalist	0
Bur oak	46	••	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	46	•••••	SI	Perennial	Present	wind	Generalist	0
White oak	38	•••	SI	Perennial	Present	wind	Generalist	0
Black oak	31	••••	SI	Perennial	Present	wind	Generalist	0
Northern red oak	31	•••	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	23	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	23	•	SI	Perennial	Present	insects	Early spring insect	5
Basswood	23	•	SI	Perennial	Absent	insects	Generalist	5
Ironwood	15	•••	UNK	Perennial	Present	wind	Generalist	0
Jack pine	15	•••	UNK	Perennial	Absent	wind	Generalist	0
Eastern red cedar	15	•	D	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
White pine	46	•••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	23	•	Di	Perennial	Present	wind	Generalist	0
Bur oak	15	••	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	31	•••	SI	Perennial	Present	wind	Generalist	0
White oak	46	••	SI	Perennial	Present	wind	Generalist	0
Black oak	31	••••	SI	Perennial	Present	wind	Generalist	0
Northern red oak	23	•••	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	23	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	62	••	SI	Perennial	Present	insects	Early spring insect	5
Basswood	46	•	SI	Perennial	Absent	insects	Generalist	5

Ironwood	38	•••	UNK	Perennial	Present	wind	Generalist	0
Jack pine	8	•	UNK	Perennial	Absent	wind	Generalist	0
Eastern red cedar	46	•	D	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
White pine	54	•	SI	Perennial	Absent	wind	Generalist	0
Paper birch	15	•	Di	Perennial	Present	wind	Generalist	0
Bur oak	23	•	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	23	••	SI	Perennial	Present	wind	Generalist	0
White oak	46	•	SI	Perennial	Present	wind	Generalist	0
Black oak	31	•••	SI	Perennial	Present	wind	Generalist	0
Northern red oak	31	•	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	62	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	77	•	SI	Perennial	Present	insects	Early spring insect	5
Basswood	46	•	SI	Perennial	Absent	insects	Generalist	5
Ironwood	38	•	UNK	Perennial	Present	wind	Generalist	0
Jack pine	8	•	UNK	Perennial	Absent	wind	Generalist	0
Eastern red cedar	38	•	D	Perennial	Absent	wind	Generalist	0

FDs36 Southern Dry-Mesic Oak-Aspen Forest

Pollinator Resources

Dry-mesic hardwood forests dominated by a mix of bur oak and quaking aspen. Present on hummocky stagnation moraines on well-drained, gravelly, loamy, calcareous till in northwestern Minnesota.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDs36 include:

Bees:

Hylaeus sparsus (Apiaceae)

Andrena ziziae (Zizia)

Andrena placata (Solidago, Symphyotrichum)

Butterflies:

Satyrium titus (Prunus)

Satyrium edwardsii (Quercus)

Erynnis juvenalis (Quercus)

Argynnis cybele (Viola)

Moths:

Phylloconistis vitifoliella (Vitis riparia)

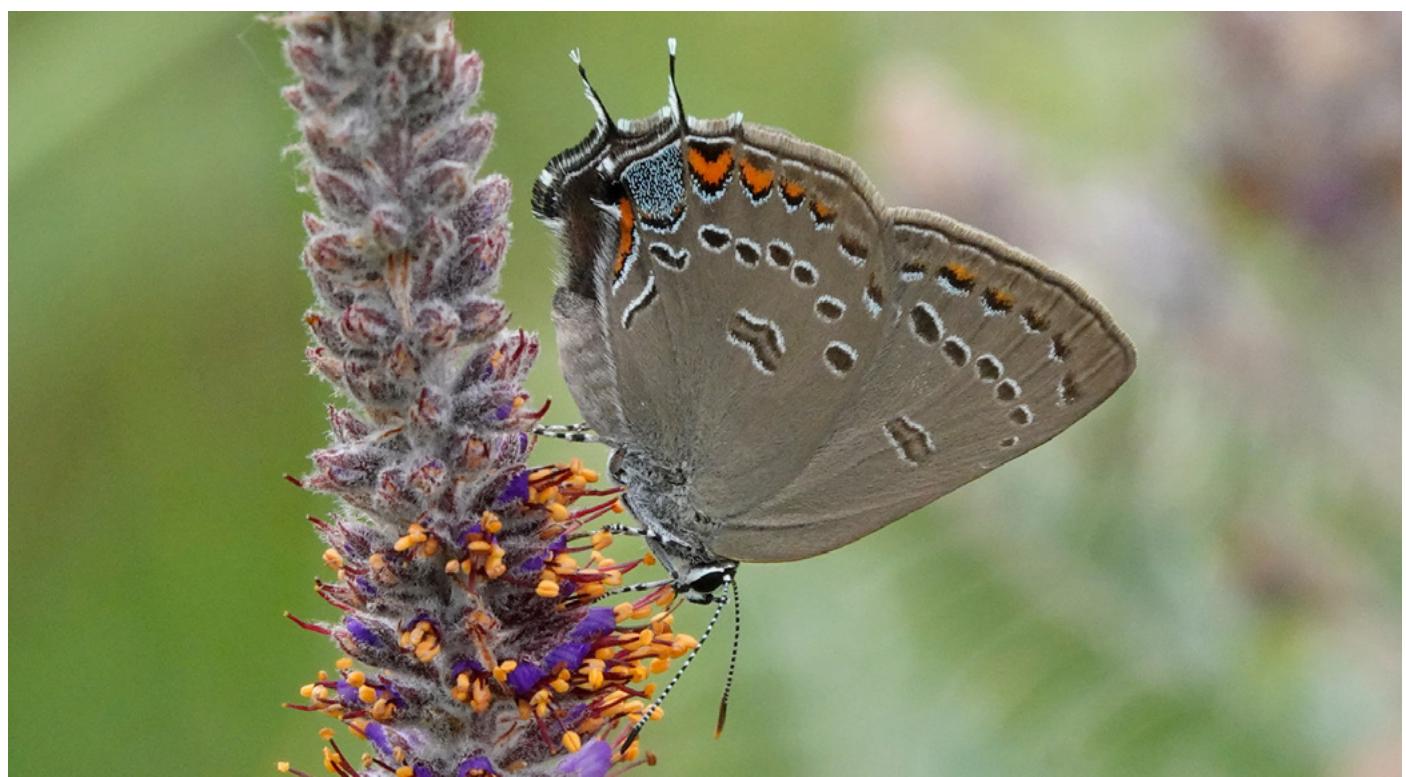
Phigalia strigataria (Corylus americana)

Cycnia tenera (Apocynum androsaemifolium)



Phigalia strigataria (small phigalia moth) uses *Corylus americana* (American hazelnut) as a host plant.

Photo: Bob Dunlap

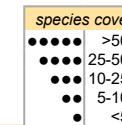


Satyrium edwardsii (Edwards' hairstreak) uses *Quercus* (oak) species as a host plant. Photo: Bob Dunlap

FDs36 Southern Dry-Mesic Oak-Aspen Forest

Pollinator Resources Table

[FDs36 Class Factsheet](#). Based on 25 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	88	•••	SI	Perennial	Present	insects	Early spring insect	5
Early meadow-rue (<i>Thalictrum dioicum</i>)	80	••	SI	Perennial	Present	wind	Generalist	0
Maryland black snakeroot (<i>Sanicula marilandica</i>)	80	•	UNK	Perennial	Absent	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	76	•	D	Perennial	Absent	insects	Generalist	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	72	•••	D	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	72	•	SI	Perennial	Present	insects	Early spring insect	5
Common strawberry (<i>Fragaria virginiana</i>)	68	•	SC	Perennial	Present	insects	Early spring insect	3
Lindley's aster (<i>Aster ciliolatus</i>)	64	•	UNK	Perennial	Present	insects	Generalist	3
Hog peanut (<i>Amphicarpaea bracteata</i>)	64	•	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Lopseed (<i>Phryma leptostachya</i>)	60	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Erect, Smooth, or Illinois Carrion-flower (<i>Smilax spp.</i>)*	52	•	D	Perennial	Present	insects	Somewhat specific insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	44	•	UNK	Perennial	Present	insects	Generalist	3
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	40	••	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Columbine (<i>Aquilegia canadensis</i>)	40	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Starry false Solomon's seal (<i>Smilacina stellata</i>)	36	•	UNK	Perennial	Present	insects	Early spring insect	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	36	•	SI	Perennial	Present	insects	Generalist	4
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	36	•	Varies	Perennial	Present	insects	Varies	Varies
Bloodroot (<i>Sanguinaria canadensis</i>)	32	•	SC	Perennial	Present	insects	Early spring insect	3
Canada goldenrod (<i>Solidago canadensis</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	32	••	SC	Perennial	Present	wind, water	Generalist	0
Common false Solomon's seal (<i>Smilacina racemosa</i>)	32	•	UNK	Perennial	Present	insects	Early spring insect	4
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	32	•	SC	Perennial	Present	insects	Generalist	2
Rattlesnake fern (<i>Botrychium virginianum</i>)	32	•	SC	Perennial	Present	wind, water	Generalist	0
Wood anemone (<i>Anemone quinquefolia</i>)	32	•	UNK	Perennial	Present	insects	Early spring insect	4
Blue cohosh (<i>Caulophyllum thalictroides</i>)	28	•	SC/SI	Perennial	Present	insects	Early spring insect	4
Red baneberry (<i>Actaea rubra</i>)	28	•	SC	Perennial	Present	insects	Early spring insect	3
Tall coneflower (<i>Rudbeckia laciniata</i>)	28	••	SC	Perennial	Present	insects	Generalist	2
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	28	••	D	Perennial	Present	wind	Generalist	0
Golden alexanders (<i>Zizia aurea</i>)	28	•	SC	Perennial	Absent	insects	Generalist	3
Pink shinleaf (<i>Pyrola asarifolia</i>)	24	•	UNK	Perennial	Present	insects	Buzz pollination	5
Yellow lady's slipper (<i>Cypripedium calceolus</i>)	16	•	SC	Perennial	Weakly	insects	Very specialized insect	4
Wild ginger (<i>Asarum canadense</i>)	12	•••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	12	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	84	•••	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	44	•	UNK	Perennial	Absent	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	28	•	UNK	Perennial	Absent	wind	Generalist	0

Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	48	••	SC	Perennial	Present	insects	Generalist	2
Wild honeysuckle (<i>Lonicera</i> <i>dioica</i>)	28	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Climbing bittersweet (<i>Celastrus scandens</i>)	28	•	D or PD	Perennial	Present	insects	Generalist	4
Wild grape (<i>Vitis riparia</i>)	24	•	D	Perennial	Present	insects	Generalist	4
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	32	•	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	88	••	UNK	Perennial	Present	insects	Generalist	3
Poison ivy (<i>Toxicodendron rydbergii</i>)	84	•••	D	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	76	•	SI	Perennial	Present	insects	Early spring insect	5
Juneberries (<i>Amelanchier</i> spp.)	76	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Gray dogwood (<i>Cornus racemosa</i>)	68	•••	UNK	Perennial	Present	insects	Generalist	3
American hazelnut (<i>Corylus americana</i>)	68	•••	Di	Perennial	Present	wind	Generalist	0
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	68	•	SC	Perennial	Present	insects	Generalist	2
Prickly ash (<i>Zanthoxylum americanum</i>)	44	•	D	Perennial	Present	insects	Generalist	4
Beaked hazelnut (<i>Corylus cornuta</i>)	40	•••	Di	Perennial	Present	wind	Generalist	0
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	32	•	SC	Perennial	Present	insects	Generalist	2
Wild plum (<i>Prunus americana</i>)	24	•	SI	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Bur oak	76	••••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	72	•••	D	Perennial	Present	wind	Generalist	0
Basswood	40	•••	SI	Perennial	Absent	insects	Generalist	5
American elm	36	•	Di	Perennial	Absent	wind	Generalist	0
Green ash	20	•	D	Perennial	UNK	wind	Generalist	0
Paper birch	20	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	8	••••	SI	Perennial	Present	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Tree Subcanopy								
Bur oak	24	•••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	60	••	D	Perennial	Present	wind	Generalist	0
Basswood	16	••	SI	Perennial	Absent	insects	Generalist	5
American elm	28	••	Di	Perennial	Absent	wind	Generalist	0
Green ash	36	•	D	Perennial	UNK	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Northern red oak	8	•	SI	Perennial	Present	wind	Generalist	0
Box elder	24	•	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	20	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	12	•	SI	Perennial	Present	insects	Early spring insect	5

Tree Shrub Layer								
Bur oak	28	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	44	•	D	Perennial	Present	wind	Generalist	0
Basswood	24	•	SI	Perennial	Absent	insects	Generalist	5
American elm	32	•	Di	Perennial	Absent	wind	Generalist	0
Green ash	64	•	D	Perennial	UNK	wind	Generalist	0
Paper birch	8	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	20	•	SI	Perennial	Present	wind	Generalist	0
Box elder	24	•	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	24	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	12	•	SI	Perennial	Present	insects	Early spring insect	5

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

FDs37 Southern Dry-Mesic Oak (Maple) Woodland Pollinator Resources

Dry-mesic hardwood forests on undulating sand flats, hummocky moraines, and river bluffs. Present mostly on fine sand or sand-gravel soils. Often on south- or west-facing slopes but common also on flat to undulating sandy lake plains. Historically, fires were common in this community, and many stands are on sites occupied by brushlands 100–150 years ago.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDs37 include:

Bees:

- Andrena uvulariae* (*Uvularia*)
- Andrena distans* (*Geranium maculatum*)
- Andrena fragilis* (*Cornus [Swida]*)
- Andrena platyparia* (*Cornus [Swida]*)

Butterflies:

- Satyrium titus* (*Prunus*)
- Polygonia progne* (*Ribes*)
- Erynnis juvenalis* (*Quercus*)

Moths:

- Macrosaccus morrisella* (*Amphicarpaea bracteata*)
- Brenthia pavonacella* (*Desmodium glutinosum*)
- Phyllocnistis vitifoliella* (*Vitis riparia*)



Andrena distans uses *Geranium maculatum* (wild geranium) as a host plant. Photo: Heather Holm

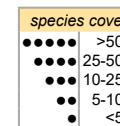


Erynnis juvenalis (Juvenal's duskywing) uses *Quercus* (oak) species as a host plant. Photo: Kyle Johnson

FDs37 Southern Dry-Mesic Oak (Maple) Forest

Pollinator Resources Table

FDs37 Class Factsheet. Based on 45 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	78	••	D	Perennial	Absent	insects	Generalist	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	78	••	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Hog peanut (<i>Amphicarpaea bracteata</i>)	76	••	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Canada mayflower (<i>Maianthemum canadense</i>)	73	•	SI	Perennial	Present	insects	Early spring insect	5
Wild geranium (<i>Geranium maculatum</i>)	69	••	SC	Perennial	Present	insects	Early spring insect	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	60	•	SC	Perennial	Present	insects	Generalist	2
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	60	•	D	Perennial	Present	insects	Generalist	4
Lopseed (<i>Phryma leptostachya</i>)	60	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Common false Solomon's seal (<i>Smilacina racemosa</i>)	60	•	UNK	Perennial	Present	insects	Early spring insect	4
Pale bellwort (<i>Uvularia sessilifolia</i>)	60	••	SI	Perennial	Present	insects	Early spring insect	5
Lady fern (<i>Athyrium filix-femina</i>)	51	•	SC	Perennial	Present	wind, water	Generalist	0
Bracken (<i>Pteridium aquilinum</i>)	51	••	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	51	•	UNK	Perennial	Present	insects	Generalist	3
Large-leaved aster (<i>Aster macrophyllus</i>)	49	••	A	Perennial	Present	insects	Generalist	2
Columbine (<i>Aquilegia canadensis</i>)	40	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Northern bedstraw (<i>Galium boreale</i>)	40	•	SI	Perennial	Present	insects	Generalist	4
Wood anemone (<i>Anemone quinquefolia</i>)	40	•	UNK	Perennial	Present	insects	Early spring insect	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	36	•	UNK	Perennial	Absent	insects	Generalist	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	31	•	SI	Perennial	Present	wind	Generalist	0
Giant Solomon's seal (<i>Polygonatum biflorum</i>)	27	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Starry false Solomon's seal (<i>Smilacina stellata</i>)	22	•	UNK	Perennial	Present	insects	Early spring insect	4
Starflower (<i>Trifoliate borealis</i>)	20	•	SI/sc	Perennial	Present	insects	Generalist	3
Interrupted fern (<i>Osmunda claytoniana</i>)	20	••	SC	Perennial	Present	wind, water	Generalist	0
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	20	••	SI	Perennial	Present	insects	Early spring insect	5
Elliptic shinleaf (<i>Pyrola elliptica</i>)	20	•	UNK	Perennial	Present	insects	Buzz pollination	5
Tail-leaved aster (<i>Aster sagittifolius</i>)	18	•	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	84	•••	SC	Perennial	Present	wind	Generalist	0
Moutain rice grass (<i>Oryzopsis asperifolia</i>)	40	•	UNK	Perennial	Absent	wind	Generalist	0
Nodding fescue (<i>Festuca subverticillata</i>)	11	•	UNK	Perennial	Absent	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	11	•	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	91	••	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	62	•	D	Perennial	Present	insects	Generalist	4
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	64	•	SC	Perennial	Present	insects	Generalist	2
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	47	•	Varies	Perennial	Present	insects	Generalist	Varies

Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	82	••	SI	Perennial	Present	insects	Early spring insect	5
American hazelnut (<i>Corylus americana</i>)	80	•••	Di	Perennial	Present	wind	Generalist	0
Gray dogwood (<i>Cornus racemosa</i>)	67	•••	UNK	Perennial	Present	insects	Generalist	3
Prickly ash (<i>Zanthoxylum americanum</i>)	67	••	D	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	64	•	D	Perennial	Present	insects	Generalist	4
Prickly gooseberry (<i>Ribes cynosbati</i>)	49	•	SI	Perennial	Present	insects	Generalist	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	49	••	UNK	Perennial	Present	insects	Generalist	3
Juneberries (<i>Amelanchier</i> spp.)	47	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Nannyberry (<i>Viburnum lentago</i>)	42	•	SI	Perennial	Present	insects	Generalist	4
Bush honeysuckle (<i>Diervilla lonicera</i>)	33	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Missouri gooseberry (<i>Ribes missouriense</i>)	24	•	SI	Perennial	Present	insects	Generalist	4
Beaked hazelnut (<i>Corylus cornuta</i>)	22	•••	Di	Perennial	Present	wind	Generalist	0
Snowberry or Wolfberry (<i>Symphoricarpos albus</i> or <i>S. occidentalis</i>)	20	•	SC	Perennial	Present	insects	Generalist	2
Red-berried elder (<i>Sambucus racemosa</i>)	20	•	UNK	Perennial	Present	insects	Generalist	3
Round-leaved dogwood (<i>Cornus rugosa</i>)	16	•	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Bur oak	67	•••	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	60	••••	SI	Perennial	Present	wind	Generalist	0
Northern red oak	33	••••	SI	Perennial	Present	wind	Generalist	0
White oak	29	•••	SI	Perennial	Present	wind	Generalist	0
Black cherry	29	•	SI	Perennial	Present	insects	Early spring insect	5
Quaking aspen	27	••	D	Perennial	Present	wind	Generalist	0
Red maple	27	••	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	20	••	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	11	•••	D	Perennial	Present	wind	Generalist	0
Green ash	9	•••	D	Perennial	UNK	wind	Generalist	0
American elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Bur oak	58	••	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	33	•••	SI	Perennial	Present	wind	Generalist	0
Northern red oak	13	•••	SI	Perennial	Present	wind	Generalist	0
White oak	9	••	SI	Perennial	Present	wind	Generalist	0
Black cherry	58	••	SI	Perennial	Present	insects	Early spring insect	5
Quaking aspen	18	••	D	Perennial	Present	wind	Generalist	0
Red maple	56	•••	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Green ash	31	••	D	Perennial	UNK	wind	Generalist	0

American elm	31	••	Di	Perennial	Absent	wind	Generalist	0
Ironwood	29	•••	UNK	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Bur oak	33	•	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	38	•	SI	Perennial	Present	wind	Generalist	0
Northern red oak	22	•	SI	Perennial	Present	wind	Generalist	0
White oak	18	•	SI	Perennial	Present	wind	Generalist	0
Black cherry	69	•	SI	Perennial	Present	insects	Early spring insect	5
Quaking aspen	18	•	D	Perennial	Present	wind	Generalist	0
Red maple	53	•	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Green ash	36	•	D	Perennial	UNK	wind	Generalist	0
American elm	33	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	18	••	UNK	Perennial	Present	wind	Generalist	0

FDs38 Southern Dry-Mesic Oak-Hickory Woodland

Pollinator Resources

Dry-mesic (or dry) deciduous woodlands on steep, exposed, south- to west-facing bluffs in southeastern Minnesota, often adjacent to bedrock bluff prairies.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDs38 include:

Bees:

- Andrena integra* (*Cornus* [*Swida*])
- Andrena distans* (*Geranium maculatum*)
- Andrena simplex* (*Solidago*)
- Andrena brevipalpis* (*Rhus*)

Butterflies:

- Satyrium titus* (*Prunus*)
- Polygonia progne* (*Ribes*)

Moths:

- Phyllonorycter lucetiella* (*Tilia americana*)
- Platynota idaeusalis* (*Sanicula canadensis*)
- Protoboarmia porcelaria* (*Rubus allegheniensis*)
- Brenthia pavonacella* (*Desmodium glutinosum*)



Andrena integra (short-haired dogwood mining bee) uses *Cornus* (dogwood) species as a host plant.
Photo: Heather Holm

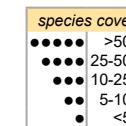


Polygonia progne (gray comma) uses *Ribes* (currant, gooseberry) species as a host plant. Photo: Bob Dunlap

FDs38 Southern Dry-Mesic Oak-Hickory Woodland

Pollinator Resources Table

FDs38 Class Factsheet. Based on 17 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	100	••	D	Perennial	Absent	insects	Generalist	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	100	•••	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Lopseed (<i>Phryma leptostachya</i>)	88	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Honewort (<i>Cryptotaenia canadensis</i>)	82	•	SC	Perennial	Present	insects	Generalist	2
Hog peanut (<i>Amphicarpa bracteata</i>)	82	••	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
White snakeroot (<i>Eupatorium rugosum</i>)	76	••	UNK	Perennial	Present	insects	Generalist	3
Sweet-scented bedstraw (<i>Galium triflorum</i>)	71	•	UNK	Perennial	Present	insects	Generalist	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	65	•	SC	Perennial	Present	insects	Generalist	2
Rattlesnake fern (<i>Botrychium virginianum</i>)	65	•	SC	Perennial	Present	wind, water	Generalist	0
Woodland sunflower (<i>Helianthus strumosus</i>)	59	•	SI	Perennial	Present	insects	Generalist	4
Gregarious black snakeroot (<i>Sanicula gregaria</i>)	59	•	UNK	Perennial	Absent	insects	Generalist	4
Elm-leaved goldenrod (<i>Solidago ulmifolia</i>)	53	•	SI	Perennial	Present	insects	Generalist	4
Common false Solomon's seal (<i>Smilacina racemosa</i>)	47	•	UNK	Perennial	Present	insects	Early spring insect	4
White avens (<i>Geum canadense</i>)	47	•	UNK	Perennial	Present	insects	Generalist	3
Wild geranium (<i>Geranium maculatum</i>)	47	•	SC	Perennial	Present	insects	Early spring insect	3
Agrimony (<i>Agrimonia</i> spp.)	47	•	SC	Perennial	Present	insects	Generalist	2
Shining bedstraw (<i>Galium concinnum</i>)	41	•	UNK	Perennial	Present	insects	Generalist	3
Northern bedstraw (<i>Galium boreale</i>)	41	•	SI	Perennial	Present	insects	Generalist	4
Virginia thimbleweed (<i>Anemone virginiana</i>)	35	•	UNK	Perennial	Present	insects	Generalist	3
Canada goldenrod (<i>Solidago canadensis</i>)	35	•	SI	Perennial	Present	insects	Generalist	4
Horse gentian (<i>Triosteum perfoliatum</i>)	35	•	UNK	Perennial	Absent	insects	Early spring insect, Somewhat specific insect	5
Erect, Smooth, or Illinois carrion-flower (<i>Smilax</i> spp.)*	35	•	D	Perennial	Present	insects	Somewhat specific insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	29	••	D	Perennial	Present	insects	Generalist	4
Canadian black snakeroot (<i>Sanicula canadensis</i>)	29	••	UNK	Biennial	Absent	insects	Generalist	5
Lady fern (<i>Athyrium filix-femina</i>)	24	•	SC	Perennial	Present	wind, water	Generalist	0
Heart-leaved alexanders (<i>Zizia aptera</i>)	24	•	SC	Perennial	Absent	insects	Generalist	3
Side-flowering aster (<i>Aster lateriflorus</i>)	24	••	SI	Perennial	Present	insects	Generalist	4
Wild bergamot (<i>Monarda fistulosa</i>)	24	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	71	••	SC	Perennial	Present	wind	Generalist	0
Thin-leaved sedge (<i>Carex sparganioides</i>)	29	•	UNK	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i> and <i>C. radiata</i>)	24	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Wild grape (<i>Vitis riparia</i>)	100	••	D	Perennial	Present	insects	Generalist	4
Virginia creeper (<i>Parthenocissus</i> spp.)	94	•••	SC	Perennial	Present	insects	Generalist	2
Greenbrier (<i>Smilax tamnoides</i>)	59	•	D	Perennial	Present	insects	Somewhat specific insect	5
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	53	•••	SC	Perennial	Present	insects	Generalist	2

Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	41	•••	Varies	Perennial	Present	insects	Generalist	Varies
Black raspberry (<i>Rubus occidentalis</i>)	41	••	SC	Perennial	Present	insects	Generalist	2
Shrubs								
American hazelnut (<i>Corylus americana</i>)	94	•••	Di	Perennial	Present	wind	Generalist	0
Gray dogwood (<i>Cornus racemosa</i>)	88	•	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	71	••	SI	Perennial	Present	insects	Generalist	4
Prickly ash (<i>Zanthoxylum americanum</i>)	71	•••	D	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	71	•	D	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	59	••	SI	Perennial	Present	insects	Early spring insect	5
Pagoda dogwood (<i>Cornus alternifolia</i>)	35	•	UNK	Perennial	Present	insects	Generalist	3
Missouri gooseberry (<i>Ribes missouriense</i>)	29	••	SI	Perennial	Present	insects	Generalist	4
Nannyberry (<i>Viburnum lentago</i>)	29	••	SI	Perennial	Present	insects	Generalist	4
Smooth sumac (<i>Rhus glabra</i>)	24	•	PD	Perennial	Present	insects	Generalist	4
Tree Canopy								
Bur oak	94	••••	SI	Perennial	Present	wind	Generalist	0
Shagbark hickory	76	•••	SC/si	Perennial	Present	wind	Generalist	0
Northern pin oak	59	•••••	SI	Perennial	Present	wind	Generalist	0
American elm	59	•••	Di	Perennial	Absent	wind	Generalist	0
Black cherry	41	•••	SI	Perennial	Present	insects	Early spring insect	5
Black walnut	35	••	SI/sc	Perennial	UNK	wind	Generalist	0
Northern red oak	29	•••	SI	Perennial	Present	wind	Generalist	0
Box elder	24	••	D	Perennial	Absent	insects	Early spring insect	6
White oak	24	•••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	24	••	D	Perennial	Present	wind	Generalist	0
Paper birch	24	•	Di	Perennial	Present	wind	Generalist	0
Red elm	18	•	Di	Perennial	Absent	wind	Generalist	0
Hackberry	12	••	SC	Perennial	Absent	wind	Generalist	0
Bitternut hickory	12	•••	UNK	Perennial	Present	wind	Generalist	0
Basswood	12	•	SI	Perennial	Absent	insects	Generalist	5
Tree Subcanopy								
Bur oak	47	•••	SI	Perennial	Present	wind	Generalist	0
Shagbark hickory	82	•••	SC/si	Perennial	Present	wind	Generalist	0
Northern red oak	35	•	SI	Perennial	Present	wind	Generalist	0
Box elder	47	•••	D	Perennial	Absent	insects	Early spring insect	6
White oak	-	-	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	18	•	D	Perennial	Present	wind	Generalist	0
Paper birch	29	•	Di	Perennial	Present	wind	Generalist	0
Red elm	35	••	Di	Perennial	Absent	wind	Generalist	0
Hackberry	35	••	SC	Perennial	Absent	wind	Generalist	0
Bitternut hickory	24	•	UNK	Perennial	Present	wind	Generalist	0
Basswood	29	•	SI	Perennial	Absent	insects	Generalist	5

Tree Shrub Layer								
Bur oak	59	•	SI	Perennial	Present	wind	Generalist	0
Shagbark hickory	82	•	SC/si	Perennial	Present	wind	Generalist	0
Northern pin oak	41	•	SI	Perennial	Present	wind	Generalist	0
American elm	71	•	Di	Perennial	Absent	wind	Generalist	0
Black cherry	76	••	SI	Perennial	Present	insects	Early spring insect	5
Black walnut	-	-	SI/sc	Perennial	UNK	wind	Generalist	0
Northern red oak	24	•	SI	Perennial	Present	wind	Generalist	0
Box elder	53	•	D	Perennial	Absent	insects	Early spring insect	6
White oak	18	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	24	•	D	Perennial	Present	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Red elm	18	•	Di	Perennial	Absent	wind	Generalist	0
Hackberry	47	•	SC	Perennial	Absent	wind	Generalist	0
Bitternut hickory	47	•	UNK	Perennial	Present	wind	Generalist	0
Basswood	24	•	SI	Perennial	Absent	insects	Generalist	5

* Erect, Smooth, or Illinois carriion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

FDc12 Central Poor Dry Pine Woodland

Pollinator Resources

Dry jack pine woodlands on level, sandy lacustrine and outwash deposits in northcentral Minnesota. Crown fires and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDc12 include:

Bees:

Andrena melanochroa (Rosaceae)

Protandrena aestivalis (Asteraceae)

Andrena hirticincta (*Solidago*)

Butterflies:

Callophrys polios (*Arctostaphylos uva-ursi*)

Satyrium titus (*Prunus*)

Boloria eunomia (*Viola adunca*)

Moths:

Hemileuca nevadensis (*Populus tremuloides*)

Eulithis explanata (*Vaccinium angustifolium*)

Hemaris aethra (*Diervilla lonicera*)



Andrena hirticincta uses *Solidago* (goldenrod) species as a host plant. Photo: Heather Holm

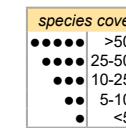


Callophrys polios (Hoary Elfin) uses *Arctostaphylos uva-ursi* (bearberry) as a host plant. Photo: Bob Dunlap

FDc12 Central Poor Dry Pine Woodland

Pollinator Resources Table

[FDc12 Class Factsheet](#). Based on 25 Plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Northern bedstraw (<i>Galium boreale</i>)	100	••	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	88	•	SC	Perennial	Present	insects	Early spring insect	3
Canada mayflower (<i>Maianthemum canadense</i>)	88	•	SI	Perennial	Present	insects	Early spring insect	5
Field or Variable pussytoes (<i>Antennaria neglecta</i> or <i>A. neodica</i>)	81	•	A	Perennial	Present	wind	Generalist	0
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	77	•	SI	Perennial	Present	insects	Generalist	4
Balsam or Prairie ragwort (<i>Senecio pauperulus</i> or <i>S. plattensis</i>)	77	•	UNK	Varies	Present	insects	Generalist	Varies
Smooth blue aster (<i>Aster laevis</i>)	73	•	SI	Perennial	Present	insects	Generalist	4
Harebell (<i>Campanula rotundifolia</i>)	69	•	± SI	Perennial	Present	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	65	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Veiny pea (<i>Lathyrus venosus</i>)	62	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Lindley's aster (<i>Aster ciliolatus</i>)	54	•	UNK	Perennial	Present	insects	Generalist	3
Cow wheat (<i>Melampyrum lineare</i>)	50	•	SC	Annual	Absent	insects	Somewhat specific insect	5
Wood betony (<i>Pedicularis canadensis</i>)	38	•	UNK	Perennial	Present	insects	Buzz pollination	5
Wood anemone (<i>Anemone quinquefolia</i>)	38	•	UNK	Perennial	Present	insects	Early spring insect	4
Hairy goldenrod (<i>Solidago hispida</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Gray goldenrod (<i>Solidago nemoralis</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
White rattlesnakeroot (<i>Prenanthes alba</i>)	38	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Heart-leaved alexanders (<i>Zizia aptera</i>)	35	•	SC	Perennial	Absent	insects	Generalist	3
One-sided pyrola (<i>Pyrola secunda</i>)	31	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Two-flowered Cynthia (<i>Krigia biflora</i>)	31	•	UNK	Perennial	Present	insects	Generalist	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	31	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Sand or Dog violet (<i>Viola adunca</i> or <i>V. conspersa</i>)	31	•	Varies	Perennial	Present	insects	Varies	Varies
American vetch (<i>Vicia americana</i>)	31	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Bracken (<i>Pteridium aquilinum</i>)	27	•••	SC	Perennial	Present	wind, water	Generalist	0
Gaywings (<i>Polygala paucifolia</i>)	27	•	CH and CL	Annual or perennial	Absent	insects	Somewhat specific insect	6
Kalm's hawkweed (<i>Hieracium kalmii</i>)	27	•	UNK	Perennial	Absent	insects	Generalist	4
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	23	•	UNK	Perennial	Present	insects	Buzz pollination	5
Fireweed (<i>Epilobium angustifolium</i>)	23	•	SC	Perennial	Present	insects	Generalist	2
Wood lily (<i>Lilium philadelphicum</i>)	23	•	SI	Perennial	Present	insects	Generalist	4
Large-leaved aster (<i>Aster macrophyllus</i>)	19	•	A	Perennial	Present	insects	Generalist	2
Upright birdweed (<i>Calystegia spithamea</i>)	19	•	UNK	Perennial	Present	insects	Generalist	3
Early goldenrod (<i>Solidago juncea</i>)	19	•	SI	Perennial	Present	insects	Generalist	4
Sticky hawkweed (<i>Hieracium scabrum</i>)	19	•	UNK	Perennial	Absent	insects	Generalist	4
Grasses and Sedges								
Sharp-pointed rice grass (<i>Oryzopsis pungens</i>)	77	•	UNK	Perennial	Absent	wind	Generalist	0

False melic grass (<i>Schizachne purpurascens</i>)	46	●	UNK	Perennial	Absent	wind	Generalist	0
Fringed or Kalm's brome (<i>Bromus ciliatus</i> or <i>B. Kalmii</i>)	46	●	SC	Perennial	Absent	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	38	●●	SI	Perennial	Present	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	35	●	SC/si	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	27	●	SC	Perennial	Present	wind	Generalist	0
Yellow panic grass (<i>Panicum xanthophysum</i>)	23	●	UNK	Perennial	Present	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	23	●	UNK	Perennial	Weakly	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	15	●●	UNK	Perennial	Absent	wind	Generalist	0
Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	96	●●●●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Wintergreen (<i>Gaultheria procumbens</i>)	92	●●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Bearberry (<i>Arctostaphylos uva-ursi</i>)	88	●●●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Pipsissewa (<i>Chimaphila umbellata</i>)	38	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Red raspberry (<i>Rubus idaeus</i>)	23	●	SC	Perennial	Present	insects	Generalist	2
Trailing arbutus (<i>Epigaea repens</i>)	19	●	GD	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Shrubs								
Sand cherry (<i>Prunus pumila</i>)	65	●	SI	Perennial	Present	insects	Generalist	4
Juneberries (<i>Amelanchier</i> spp.)	62	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	42	●	SC	Perennial	Present	insects	Generalist	2
Prairie willow (<i>Salix humilis</i>)	38	●	D	Perennial	Present	insects	Early spring insect	5
American hazelnut (<i>Corylus americana</i>)	31	●●	Di	Perennial	Present	wind	Generalist	0
Beaked hazelnut (<i>Corylus cornuta</i>)	31	●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	31	●	SI	Perennial	Present	insects	Early spring insect	5
Bush honeysuckle (<i>Diervilla lonicera</i>)	27	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	27	●●	SC	Perennial	Present	insects	Generalist	2
Bush juniper (<i>Juniperus communis</i>)	15	●	D	Perennial	Absent	wind	Generalist	0
Tree Canopy								
Jack pine	77	●●●●●	UNK	Perennial	Absent	wind	Generalist	0
Red pine	31	●●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	4	●	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	-	-	D	Perennial	Present	wind	Generalist	0
White spruce	-	-	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Jack pine	42	●●●●	UNK	Perennial	Absent	wind	Generalist	0
Red pine	35	●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	4	●	D	Perennial	Present	wind	Generalist	0
White spruce	4	●	UNK	Perennial	Absent	wind	Generalist	0

Tree Shrub Layer								
Jack pine	42	••	UNK	Perennial	Absent	wind	Generalist	0
Red pine	23	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	8	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	15	•	D	Perennial	Present	wind	Generalist	0
White spruce	19	•	UNK	Perennial	Absent	wind	Generalist	0

FDc23 Central Poor Dry Pine Woodland

Pollinator Resources

Dry-mesic pine woodlands on sandy, level to gently undulating outwash deposits. Crown fires and surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDc23 include:

Bees:

Andrena melanochroa (Rosaceae)
Megachile campanulae (*Campanula*)
Colletes willistoni (*Physalis*)

Butterflies:

Satyrium titus (*Prunus*)
Callophrys polios (*Arctostaphylos uva-ursi*)
Callophrys niphon (*Pinus banksiana*)

Moths:

Chlorochlamys chloroleucaria (*Achillea millefolium*)
Cycnia tenera (*Apocynum androsaemifolium*)
Pseudothyatira cymatophoroides (*Rubus idaeus* var.
strigosus)



Megachile campanulae (bellflower resin bee)
uses *Campanula* (harebell) species as a host plant.
Photo: Heather Holm

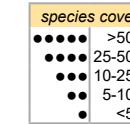


Callophrys niphon (eastern pine elfin) uses *Pinus banksiana* (Jack pine) as a host plant. Photo: Bob Dunlap

FDc23 Central Dry Pine Woodland

Pollinator Resources Table

FDc23 Class Factsheet. Based on 43 plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	100	●	SI	Perennial	Present	insects	Early spring insect	5
Northern bedstraw (<i>Galium boreale</i>)	95	●	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	91	●	SC	Perennial	Present	insects	Early spring insect	3
Yarrow (<i>Achillea millefolium</i>)	84	●	SI	Perennial	Present	insects	Generalist	4
Lindley's aster (<i>Aster ciliolatus</i>)	79	●	UNK	Perennial	Present	insects	Generalist	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	72	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	72	●	SI	Perennial	Present	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	72	●	H	Perennial	Absent	insects	Somewhat specific insect	6
Veiny pea (<i>Lathyrus venosus</i>)	67	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	67	●	UNK	Perennial	Present	insects	Early spring insect	4
Field or Variable pussytoes (<i>Antennaria neglecta</i> or <i>A. neodica</i>)	65	●	A	Perennial	Present	wind	Generalist	0
Harebell (<i>Campanula rotundifolia</i>)	65	●	± SI	Perennial	Present	insects	Generalist	4
Hairy goldenrod (<i>Solidago hispida</i>)	65	●	SI	Perennial	Present	insects	Generalist	4
One-sided pyrola (<i>Pyrola secunda</i>)	63	●	UNK	Perennial	Present	insects	Somewhat specific insect, facultative buzz pollination	4
American vetch (<i>Vicia americana</i>)	60	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Skyblue aster (<i>Aster oolentangiensis</i>)	51	●	SI	Perennial	Present	insects	Generalist	4
Smooth blue aster (<i>Aster laevis</i>)	49	●	SI	Perennial	Present	insects	Generalist	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	47	●	SI	Perennial	Present	wind	Generalist	0
Bracken (<i>Pteridium aquilinum</i>)	44	●●●	SC	Perennial	Present	wind, water	Generalist	0
Virginia ground cherry (<i>Physalis virginiana</i>)	44	●	SI	Perennial	Present	insects	Buzz pollination	6
Oval-leaved milkweed (<i>Asclepias ovalifolia</i>)	44	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Balsam or Prairie ragwort (<i>Senecio pauperculus</i> or <i>S. plattensis</i>)	42	●	UNK	Varies	Present	insects	Generalist	Varies
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	37	●	D	Perennial	Present	insects	Generalist	4
Alumroot (<i>Heuchera richardsonii</i>)	37	●	SI	Perennial	Present	insects	Generalist	4
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	35	●	UNK	Perennial	Present	insects	Buzz pollination	5
Starry false Solomon's seal (<i>Smilacina stellata</i>)	33	●	UNK	Perennial	Present	insects	Early spring insect	4
Kalm's hawkweed (<i>Hieracium kalmii</i>)	33	●	UNK	Perennial	Absent	insects	Generalist	4
Erect, Smooth, or Illinois carrion-flower*	33	●	D	Perennial	Present	insects	Somewhat specific insect	5
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	93	●●●●	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	81	●●	UNK	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	72	●	SC/si	Perennial	Absent	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	70	●●	SI	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	70	●	UNK	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	56	●	UNK	Perennial	Weakly	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	49	●	UNK	Perennial	Present	wind	Generalist	0
Sharp-pointed rice grass (<i>Oryzopsis pungens</i>)	44	●	UNK	Perennial	Absent	wind	Generalist	0
Fringed or Kalm's brome (<i>Bromus ciliatus</i> or <i>B. Kalmii</i>)	38	●	SC	Perennial	Absent	wind	Generalist	0

Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	93	••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Pipsissewa (<i>Chimaphila umbellata</i>)	65	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Red raspberry (<i>Rubus idaeus</i>)	63	••	SC	Perennial	Present	insects	Generalist	2
Wintergreen (<i>Gaultheria procumbens</i>)	58	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Bearberry (<i>Arctostaphylos uva-ursi</i>)	53	••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	42	•	Varies	Perennial	Present	insects	Generalist	Varies
Shrubs								
American hazelnut (<i>Corylus americana</i>)	98	•••	Di	Perennial	Present	wind	Generalist	0
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	98	•	SC	Perennial	Present	insects	Generalist	2
Prairie willow (<i>Salix humilis</i>)	91	•	D	Perennial	Present	insects	Early spring insect	5
Juneberries (<i>Amelanchier</i> spp.)	91	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Chokecherry (<i>Prunus virginiana</i>)	88	•	SI	Perennial	Present	insects	Early spring insect	5
Snowberry or Wolfberry (<i>Symphoricarpos albus</i> or <i>S. occidentalis</i>)	63	••	SC	Perennial	Present	insects	Generalist	2
Poison ivy (<i>Toxicodendron rydbergii</i>)	56	•	D	Perennial	Present	insects	Generalist	4
Pin cherry (<i>Prunus pensylvanica</i>)	49	•	SI	Perennial	Present	insects	Early spring insect	5
Beaked hazelnut (<i>Corylus cornuta</i>)	37	••	Di	Perennial	Present	wind	Generalist	0
Bush honeysuckle (<i>Diervilla lonicera</i>)	35	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Tree Canopy								
Jack pine	98	•••••	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak**	23	••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	21	••	D	Perennial	Present	wind	Generalist	0
Red pine	16	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	12	•••	SI	Perennial	Present	wind	Generalist	0
Paper birch	9	••	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	7	•	D	Perennial	Present	wind	Generalist	0
Red maple	-	-	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Balsam fir	-	-	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Jack pine	19	•	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak**	51	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	35	•	D	Perennial	Present	wind	Generalist	0
Red pine	12	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	60	••	SI	Perennial	Present	wind	Generalist	0
Paper birch	23	•	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	12	•	D	Perennial	Present	wind	Generalist	0
Red maple	14	•	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	9	•	SI	Perennial	Present	insects	Early spring insect	5
Balsam fir	7	•	UNK	Perennial	Absent	wind	Generalist	0

Tree Shrub Layer								
Jack pine	47	•	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak**	79	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	51	•	D	Perennial	Present	wind	Generalist	0
Red pine	12	•	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	77	•	SI	Perennial	Present	wind	Generalist	0
Paper birch	26	•	Di	Perennial	Present	wind	Generalist	0
Big-toothed aspen	14	•	D	Perennial	Present	wind	Generalist	0
Red maple	30	•	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	16	•	SI	Perennial	Present	insects	Early spring insect	5
Balsam fir	21	•	UNK	Perennial	Absent	wind	Generalist	0

*Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea* or *S. illinoensis*). **Includes northern pin oak and hybrids between northern red oak and northern pin oak

FDc24 Central Rich Dry Pine Woodland

Pollinator Resources

Dry-mesic pine or hardwood woodlands on sandy, level to gently undulating outwash deposits or occasionally on sandy inclusions in rolling to hummocky stagnation moraines. Crown fires and mild surface fires were common historically.

Examples of insect pollinators (and their associated host plants) that use FDc24 include:

Bees:

Osmia virga (*Vaccinium*)

Andrena frigida (*Salix*)

Andrena persimulata (*Cornus* [*Swida*])

Butterflies:

Oeneis macounii (*Oryzopsis asperifolia*)

Callophrys eryphon (*Pinus* *baskiana*)

Erynnis juvenalis (*Quercus*)

Moths:

Eulithis explanata (*Vaccinium angustifolium*)

Mesoleuca ruficillata (*Rubus idaeus* var. *strigosus*)

Paonias excaecata (*Corylus americana*)



Andrena frigida uses *Salix* (willow) species as a host plant. Photo: Michael Veit

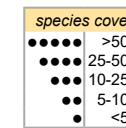


Erynnis juvenalis (Juvenal's duskywing) uses *Quercus* (oak) species as a host plant. Photo: Bob Dunlap

FDc24 Central Rich Dry Pine Woodland

Pollinator Resources Table

FDc24 Class Factsheet. Based on 45 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	96	••	SI	Perennial	Present	insects	Early spring insect	5
Common strawberry (<i>Fragaria virginiana</i>)	87	•	SC	Perennial	Present	insects	Early spring insect	3
Northern bedstraw (<i>Galium boreale</i>)	87	•	SI	Perennial	Present	insects	Generalist	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	73	•	SI	Perennial	Present	wind	Generalist	0
Wood anemone (<i>Anemone quinquefolia</i>)	69	•	UNK	Perennial	Present	insects	Early spring insect	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	69	••	D	Perennial	Present	insects	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	64	•••	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	62	••	A	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	56	•	UNK	Perennial	Present	insects	Generalist	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	56	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	56	•	SI	Perennial	Present	insects	Generalist	4
One-sided pyrola (<i>Pyrola secunda</i>)	53	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Lindley's aster (<i>Aster ciliolatus</i>)	51	•	UNK	Perennial	Present	insects	Generalist	3
Blue giant hyssop (<i>Agastache foeniculum</i>)	42	•	SC	Perennial	Present	insects	Somewhat specific insect	3
American vetch (<i>Vicia americana</i>)	40	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Dwarf raspberry (<i>Rubus pubescens</i>)	40	•	SC	Perennial	Present	insects	Generalist	2
Maryland black snakeroot (<i>Sanicula marilandica</i>)	40	•	UNK	Perennial	Absent	insects	Generalist	4
Pale bellwort (<i>Uvularia sessilifolia</i>)	36	•	SI	Perennial	Present	insects	Early spring insect	5
Twinflower (<i>Linnaea borealis</i>)	31	••	SC	Perennial	Present	insects	Generalist	2
Veiny pea (<i>Lathyrus venosus</i>)	31	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Starflower (<i>Trientalis borealis</i>)	27	•	SI/sc	Perennial	Present	insects	Generalist	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	27	•	D	Perennial	Absent	insects	Generalist	5
Columbine (<i>Aquilegia canadensis</i>)	24	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Spinulose shield fern or Glandular wood fern (<i>Dryopteris</i> spp.)*	20	•	SC	Perennial	Present	wind, water	Generalist	0
Round-lobed hepatica (<i>Anemone americana</i>)	18	•	SC	Perennial	Present	insects	Early spring insect	3
Erect, Smooth, or Illinois carriion-flower (<i>Smilax</i> spp.)**	18	•	D	Perennial	Present	insects	Somewhat specific insect	5
Pussytoes (<i>Antennaria</i> spp.)	18	•	A	Perennial	Present	wind	Generalist	0
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	18	•	UNK	Perennial	Present	insects	Buzz pollination	5
Cow wheat (<i>Melampyrum lineare</i>)	16	•	SC	Annual	Absent	insects	Somewhat specific insect	5
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	84	•••	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	71	•••	SC	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	36	••	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	33	•	SC	Perennial	Present	insects	Generalist	2
Wild honeysuckle (<i>Lonicera dioica</i>)	20	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3

Low Shrubs									
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	80	••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative		3
Red raspberry (<i>Rubus idaeus</i>)	69	••	SC	Perennial	Present	insects	Generalist		2
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	29	••	Varies	Perennial	Present	insects	Generalist		Varies
Wintergreen (<i>Gaultheria procumbens</i>)	24	•	SC	Perennial	Present	insects	Somewhat specific insect		3
Pipsissewa (<i>Chimaphila umbellata</i>)	20	•	SC	Perennial	Present	insects	Somewhat specific insect		3
Shrubs									
Juneberry (<i>Amelanchier</i> spp.)	87	••	Varies	Perennial	Present	insects	Early spring insect		Varies
Poison ivy (<i>Toxicodendron rydbergii</i>)	84	••	D	Perennial	Present	insects	Generalist		4
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	82	•	SC	Perennial	Present	insects	Generalist		2
Beaked hazelnut (<i>Corylus cornuta</i>)	78	••••	Di	Perennial	Present	wind	Generalist		0
American hazelnut (<i>Corylus americana</i>)	76	•••	Di	Perennial	Present	wind	Generalist		0
Chokecherry (<i>Prunus virginiana</i>)	76	••	SI	Perennial	Present	insects	Early spring insect		5
Bush honeysuckle (<i>Diervilla lonicera</i>)	71	•••	SC	Perennial	Present	insects	Somewhat specific insect		3
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	71	•	SC	Perennial	Present	insects	Generalist		2
Prairie willow (<i>Salix humilis</i>)	62	•	D	Perennial	Present	insects	Early spring insect		5
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	44	••	UNK	Perennial	Present	insects	Generalist		3
Pin cherry (<i>Prunus pensylvanica</i>)	33	•	SI	Perennial	Present	insects	Early spring insect		5
Gray dogwood (<i>Cornus racemosa</i>)	24	••	UNK	Perennial	Present	insects	Generalist		3
Hawthorn (<i>Crataegus</i> spp.)	18	•	Varies	Perennial	Absent	insects	Early spring insect		Varies
Tree Canopy									
Jack pine	84	••••	UNK	Perennial	Absent	wind	Generalist		0
Quaking aspen	31	•••	D	Perennial	Present	wind	Generalist		0
Red pine	29	•••	UNK	Perennial	Absent	wind	Generalist		0
Paper birch	27	•••	Di	Perennial	Present	wind	Generalist		0
Bur oak	24	•••	SI	Perennial	Present	wind	Generalist		0
Northern red oak	18	•••	SI	Perennial	Present	wind	Generalist		0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect		5
Red maple	-	-	D	Perennial	Absent	insects	Early spring insect		6
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist		0
White pine	-	-	SI	Perennial	Absent	wind	Generalist		0
Tree Subcanopy									
Jack pine	11	•••	UNK	Perennial	Absent	wind	Generalist		0
Quaking aspen	33	••	D	Perennial	Present	wind	Generalist		0
Red pine	11	•	UNK	Perennial	Absent	wind	Generalist		0
Paper birch	20	•	Di	Perennial	Present	wind	Generalist		0
Bur oak	56	••	SI	Perennial	Present	wind	Generalist		0
Northern red oak	49	••	SI	Perennial	Present	wind	Generalist		0
Black cherry	29	•	SI	Perennial	Present	insects	Early spring insect		5
Red maple	20	•	D	Perennial	Absent	insects	Early spring insect		6
Big-toothed aspen	13	•	D	Perennial	Present	wind	Generalist		0

White pine	9	••	SI	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	42	•	D	Perennial	Present	wind	Generalist	0
Red pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	16	•	Di	Perennial	Present	wind	Generalist	0
Bur oak	64	•	SI	Perennial	Present	wind	Generalist	0
Northern red oak	71	•	SI	Perennial	Present	wind	Generalist	0
Black cherry	27	•	SI	Perennial	Present	insects	Early spring insect	5
Red maple	29	•	D	Perennial	Absent	insects	Early spring insect	6
Big-toothed aspen	11	•	D	Perennial	Present	wind	Generalist	0
White pine	18	•	SI	Perennial	Absent	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris* spp.), **Erect, Smooth, or Illinois carion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

FDc25 Central Dry Oak-Aspen (Pine) Woodland Pollinator Resources

Dry-mesic pine or hardwood woodlands on sandy, level to gently undulating outwash deposits or occasionally on sandy inclusions in rolling to hummocky stagnation moraines. Crown fires and mild surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDc25 include:

Bees:

Andrena melanochroa (Rosaceae)

Andrena wilkella (Fabaceae)

Hylaeus sparsus (Apiaceae)

Osmia virga (Vaccinium)

Butterflies:

Erynnis brizo (Quercus)

Tharsalea epixanthe (Vaccinium)

Atrytonopsis hianna (Schizachyrium scoparium)

Moths:

Lithophane patefacta (Acer rubrum)

Hypercompe scribonia (Rubus allegheniensis)

Phigalia strigataria (Corylus americana)



Hylaeus sparsus uses species in the Apiaceae (carrot) family as a host plant. Photo: Michael Veit



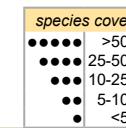
Atrytonopsis hianna (dusted skipper) uses *Schizachyrium scoparium* (little bluestem) as a host plant.

Photo: Bob Dunlap

FDc25 Central Dry Oak-Aspen (Pine) Woodland

Pollinator Resources Table

FDc25 Class Factsheet. Based on 30 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Bracken (<i>Pteridium aquilinum</i>)	93	•••	SC	Perennial	Present	wind, water	Generalist	0
Northern bedstraw (<i>Galium boreale</i>)	83	•	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	70	•	SC	Perennial	Present	insects	Early spring insect	3
Canada mayflower (<i>Maianthemum canadense</i>)	67	•	SI	Perennial	Present	insects	Early spring insect	5
Large-leaved aster (<i>Aster macrophyllus</i>)	63	•••	A	Perennial	Present	insects	Generalist	2
Pale bellwort (<i>Uvularia sessilifolia</i>)	57	•	SI	Perennial	Present	insects	Early spring insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	53	•	SI	Perennial	Present	insects	Generalist	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	53	•	D	Perennial	Present	insects	Generalist	4
Hog peanut (<i>Amphicarpaea bracteata</i>)	50	••	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Veiny pea (<i>Lathyrus venosus</i>)	47	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Woodland sunflower (<i>Helianthus strumosus</i>)	43	•	SI	Perennial	Present	insects	Generalist	4
Yarrow (<i>Achillea millefolium</i>)	43	•	SI	Perennial	Present	insects	Generalist	4
Lindley's aster (<i>Aster ciliolatus</i>)	43	•	UNK	Perennial	Present	insects	Generalist	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	37	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Wild bergamot (<i>Monarda fistulosa</i>)	37	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Columbine (<i>Aquilegia canadensis</i>)	37	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	33	•	UNK	Perennial	Present	insects	Early spring insect	4
Wood anemone (<i>Anemone quinquefolia</i>)	33	•	UNK	Perennial	Present	insects	Early spring insect	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	33	•	SI	Perennial	Present	wind	Generalist	0
One-sided pyrola (<i>Pyrola secunda</i>)	30	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	30	•	UNK	Perennial	Absent	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	30	•	D	Perennial	Absent	insects	Generalist	5
Starflower (<i>Trifolium borealis</i>)	27	•	SI/sc	Perennial	Present	insects	Generalist	3
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	23	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	83	•••	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	47	••	UNK	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	27	•	UNK	Perennial	Absent	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	20	•	SC	Perennial	Absent	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	20	•••	SI	Perennial	Present	wind	Generalist	0
Little bluestem (<i>Schizachyrium scoparium</i>)	17	••	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	37	•	SC	Perennial	Present	insects	Generalist	2
Greenbrier (<i>Smilax tamnoides</i>)	20	•	D	Perennial	Present	insects	Somewhat specific insect	5
Wild honeysuckle (<i>Lonicera dioica</i>)	13	•••	SC	Perennial	Weakly	insects	Somewhat specific insect	3

Low Shrubs									
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	93	••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative		3
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	73	•••	Varies	Perennial	Present	insects	Generalist		Varies
Wintergreen (<i>Gaultheria procumbens</i>)	47	•	SC	Perennial	Present	insects	Somewhat specific insect		3
Red raspberry (<i>Rubus idaeus</i>)	20	•••	SC	Perennial	Present	insects	Generalist		2
Sweet fern (<i>Comptonia peregrina</i>)	13	•	UNK	Perennial	Present	wind	Generalist		0
Shrubs									
Bush honeysuckle (<i>Diervilla lonicera</i>)	80	•	SC	Perennial	Present	insects	Somewhat specific insect		3
American hazelnut (<i>Corylus americana</i>)	80	••••	Di	Perennial	Present	wind	Generalist		0
Juneberry (shrub) (<i>Amelanchier</i> spp.)	70	•	Varies	Perennial	Present	insects	Early spring insect		Varies
Gray dogwood (<i>Cornus racemosa</i>)	67	•	UNK	Perennial	Present	insects	Generalist		3
Chokecherry (<i>Prunus virginiana</i>)	57	•	SI	Perennial	Present	insects	Early spring insect		5
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	53	•	UNK	Perennial	Present	insects	Generalist		3
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	53	•	SC	Perennial	Present	insects	Generalist		2
Poison ivy (<i>Toxicodendron rydbergii</i>)	50	•	D	Perennial	Present	insects	Generalist		4
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	43	•	SC	Perennial	Present	insects	Generalist		2
Winterberry (<i>Ilex verticillata</i>)	33	•	PD	Perennial	Present	insects	Generalist		4
Prairie willow (<i>Salix humilis</i>)	30	•	D	Perennial	Present	insects	Early spring insect		5
Beaked hazelnut (<i>Corylus cornuta</i>)	27	•••	Di	Perennial	Present	wind	Generalist		0
Hawthorn (<i>Crataegus</i> spp.)	23	•	Varies	Perennial	Absent	insects	Early spring insect		Varies
Tree Canopy									
Northern pin oak	63	••••	SI	Perennial	Present	wind	Generalist		0
Quaking aspen	47	•••	D	Perennial	Present	wind	Generalist		0
Paper birch	33	•••	Di	Perennial	Present	wind	Generalist		0
Jack pine	30	••••	UNK	Perennial	Absent	wind	Generalist		0
Big-toothed aspen	27	•••	D	Perennial	Present	wind	Generalist		0
Bur oak	27	••	SI	Perennial	Present	wind	Generalist		0
Northern red oak	17	•••	SI	Perennial	Present	wind	Generalist		0
Red maple	17	••	D	Perennial	Absent	insects	Early spring insect		6
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist		0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect		5
Green ash	-	-	D	Perennial	UNK	wind	Generalist		0
Tree Subcanopy									
Northern pin oak	47	••	SI	Perennial	Present	wind	Generalist		0
Quaking aspen	50	•••	D	Perennial	Present	wind	Generalist		0
Paper birch	30	•	Di	Perennial	Present	wind	Generalist		0
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist		0
Big-toothed aspen	33	••	D	Perennial	Present	wind	Generalist		0
Bur oak	50	••	SI	Perennial	Present	wind	Generalist		0
Northern red oak	23	•••	SI	Perennial	Present	wind	Generalist		0

Red maple	53	••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	40	•••	UNK	Perennial	Present	wind	Generalist	0
Black cherry	23	•	SI	Perennial	Present	insects	Early spring insect	5
Green ash	13	•	D	Perennial	UNK	wind	Generalist	0
Tree Shrub Layer								
Northern pin oak	57	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	43	•	D	Perennial	Present	wind	Generalist	0
Paper birch	10	•	Di	Perennial	Present	wind	Generalist	0
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	20	•	D	Perennial	Present	wind	Generalist	0
Bur oak	60	•	SI	Perennial	Present	wind	Generalist	0
Northern red oak	20	•	SI	Perennial	Present	wind	Generalist	0
Red maple	73	•	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	33	••	UNK	Perennial	Present	wind	Generalist	0
Black cherry	40	•	SI	Perennial	Present	insects	Early spring insect	5
Green ash	27	•	D	Perennial	UNK	wind	Generalist	0

FDc34 Central Dry-Mesic Pine-Hardwood Forest

Pollinator Resources

Dry-mesic pine, hardwood, or pine-hardwood forests on hummocky glacial moraines, often adjacent to outwash plains. Crown fires and mild surface fires were common historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDc34 include:

Bees:

Andrena melanochroa (Rosaceae)

Hylaeus sparsus (Apiaceae)

Heriades variolosus (Asteraceae)

Butterflies:

Chlosyne nycteis (*Eurybia macrophylla*)

Euphyes dion (*Carex*)

Satyrium titus (*Prunus*)

Colias interior (*Vaccinium*)

Moths:

Phyllonorycter apparella (*Populus grandidentata*),

Papaipema furcata (*Fraxinus pennsylvanica*)

Archiearis infans (*Betula papyrifera*)



Andrena melanochroa (rose miner bee) uses species in the Rosaceae (rose) family as a host plant.

Photo: Michael Veit

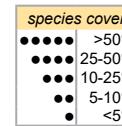


Papaipema furcata (ash tip borer) uses *Fraxinus pennsylvanica* (green ash) as a host plant. Photo: Kyle Johnson

FDc34 Central Dry-Mesic Pine-Hardwood Forest

Pollinator Resources Table

[FDc34 Class Factsheet](#). Based on 59 plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	97	●	SI	Perennial	Present	insects	Early spring insect	5
Large-leaved aster (<i>Aster macrophyllus</i>)	92	●●●	A	Perennial	Present	insects	Generalist	2
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	92	●●	D	Perennial	Present	insects	Generalist	4
Bracken (<i>Pteridium aquilinum</i>)	92	●●●	SC	Perennial	Present	wind, water	Generalist	0
Early meadow-rue (<i>Thalictrum dioicum</i>)	76	●	SI	Perennial	Present	wind	Generalist	0
Common strawberry (<i>Fragaria virginiana</i>)	76	●	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	71	●	UNK	Perennial	Present	insects	Early spring insect	4
Rose twistedstalk (<i>Streptopus roseus</i>)	68	●	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	64	●	UNK	Perennial	Present	insects	Generalist	3
Maryland black snakeroot (<i>Sanicula marilandica</i>)	54	●	UNK	Perennial	Absent	insects	Generalist	4
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	51	●	SI	Perennial	Present	insects	Early spring insect	5
Pale bellwort (<i>Uvularia sessilifolia</i>)	51	●	SI	Perennial	Present	insects	Early spring insect	5
Pale vetchling (<i>Lathyrus ochroleucus</i>)	47	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Bluebead lily (<i>Clintonia borealis</i>)	46	●	SI	Perennial	Present	insects	Generalist	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	44	●	SI	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	42	●	SC	Perennial	Present	insects	Generalist	2
Round-lobed hepatica (<i>Anemone americana</i>)	39	●	SC	Perennial	Present	insects	Early spring insect	3
Bunchberry (<i>Cornus canadensis</i>)	39	●	SI	Perennial	Present	insects	Generalist	4
Veiny pea (<i>Lathyrus venosus</i>)	36	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Hog peanut (<i>Amphicarpaea bracteata</i>)	36	●●	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Lindley's aster (<i>Aster ciliolatus</i>)	34	●	UNK	Perennial	Present	insects	Generalist	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	32	●	D	Perennial	Absent	insects	Generalist	5
Northern bedstraw (<i>Galium boreale</i>)	32	●	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trientalis borealis</i>)	27	●	SI/sc	Perennial	Present	insects	Generalist	3
Columbine (<i>Aquilegia canadensis</i>)	24	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
American vetch (<i>Vicia americana</i>)	24	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Red baneberry (<i>Actaea rubra</i>)	20	●	SC	Perennial	Present	insects	Early spring insect	3
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	68	●●	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	59	●●●	SC	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	29	●	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	17	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Virginia creeper (<i>Parthenocissus</i> spp.)	14	●	SC	Perennial	Present	insects	Generalist	2
Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	61	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Red raspberry (<i>Rubus idaeus</i>)	41	●●	SC	Perennial	Present	insects	Generalist	2

Tall blackberries*	20	•••	Varies	Perennial	Present	insects	Generalist	Varies
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	17	•	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Wintergreen (<i>Gaultheria procumbens</i>)	15	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	97	••••	Di	Perennial	Present	wind	Generalist	0
Bush honeysuckle (<i>Diervilla lonicera</i>)	86	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Chokecherry (<i>Prunus virginiana</i>)	81	•	SI	Perennial	Present	insects	Early spring insect	5
Juneberries (<i>Amelanchier</i> spp.)	68	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Poison ivy (<i>Toxicodendron rydbergii</i>)	68	••	D	Perennial	Present	insects	Generalist	4
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>blanda</i>)	66	•	SC	Perennial	Present	insects	Generalist	2
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	59	••	UNK	Perennial	Present	insects	Generalist	3
Round-leaved dogwood (<i>Cornus rugosa</i>)	44	••	UNK	Perennial	Present	insects	Generalist	3
Snowberry or Wolfberry**	36	•	SC	Perennial	Present	insects	Generalist	2
American hazelnut (<i>Corylus americana</i>)	29	•••	Di	Perennial	Present	wind	Generalist	0
Fly honeysuckle (<i>Lonicera canadensis</i>)	27	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Hairy honeysuckle (<i>Lonicera hirsuta</i>)	22	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Tree Canopy								
Red pine	51	••••	UNK	Perennial	Absent	wind	Generalist	0
White pine	46	••••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	42	•••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	37	•••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	36	•••	D	Perennial	Present	wind	Generalist	0
Red maple	34	•••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	25	•••	SI	Perennial	Present	wind	Generalist	0
Jack pine	17	••	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	14	•••	D	Perennial	Present	wind	Generalist	0
Basswood	8	••	SI	Perennial	Absent	insects	Generalist	5
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Green ash	-	-	D	Perennial	UNK	wind	Generalist	0
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Red pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
White pine	17	••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	44	••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	41	••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	27	•	D	Perennial	Present	wind	Generalist	0
Red maple	59	•••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	36	•	SI	Perennial	Present	wind	Generalist	0
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	12	•	D	Perennial	Present	wind	Generalist	0

Basswood	17	••	SI	Perennial	Absent	insects	Generalist	5
Black cherry	20	•	SI	Perennial	Present	insects	Early spring insect	5
Green ash	15	•	D	Perennial	UNK	wind	Generalist	0
Ironwood	10	••	UNK	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Red pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
White pine	34	•	SI	Perennial	Absent	wind	Generalist	0
Paper birch	17	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	54	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	44	•	D	Perennial	Present	wind	Generalist	0
Red maple	78	•	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	46	•	SI	Perennial	Present	wind	Generalist	0
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Basswood	15	•	SI	Perennial	Absent	insects	Generalist	5
Black cherry	17	•	SI	Perennial	Present	insects	Early spring insect	5
Green ash	24	•	D	Perennial	UNK	wind	Generalist	0
Ironwood	8	•	UNK	Perennial	Present	wind	Generalist	0

*(*Rubus allegheniensis* and similar *Rubus* spp.); ** (*Symporicarpos albus* or *S. occidentalis*)

FDw24 Northwestern Dry-Mesic Oak Woodland Pollinator Resources

Dry-mesic bur oak-dominated woodlands on gently sloping, sandy and gravelly beach ridges. Surface fires were common historically, with catastrophic crown fires occasional.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDw24 include:

Bees:

Hylaeus sparsus (Apiaceae)
Ashmeadiella buconis (Asteraceae)
Perdita swenki (*Solidago*)
Andrena lupinorum (Fabaceae)



Butterflies:

Satyrium edwardsii (*Quercus*)
Erynnis juvenalis (*Quercus*)
Oeneis macounii (*Oryzopsis asperifolia*)

Moths:

Paonias excaecata (*Corylus americana*)
Caloptilia negundella (*Acer negundo*)
Cycnia tenera (*Apocynum androsaemifolium*)

Perdita swenki uses *Solidago* (goldenrod) species as a host plant. Photo: Heather Holm

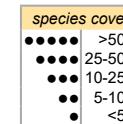


Oeneis macounii (Canada Arctic) uses *Oryzopsis asperifolia* (roughleaf ricegrass) as a host plant. Photo: Kyle Johnson

FDw24 Northwestern Dry-Mesic Oak Woodland

Pollinator Resources Table

FDw24 Class Factsheet. Based on 19 plots. November, 2024.



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	84	●	SI	Perennial	Present	insects	Early spring insect	5
Northern bedstraw (<i>Galium boreale</i>)	79	●●	SI	Perennial	Present	insects	Generalist	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	74	●●●	D	Perennial	Present	insects	Generalist	4
Lindley's aster (<i>Aster ciliolatus</i>)	74	●	UNK	Perennial	Present	insects	Generalist	3
Erect, Smooth, or Illinois carion-flower*	68	●	D	Perennial	Present	insects	Somewhat specific insect	5
Veiny pea (<i>Lathyrus venosus</i>)	68	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	63	●●	SI	Perennial	Present	insects	Generalist	4
Canada goldenrod (<i>Solidago canadensis</i>)	63	●	SI	Perennial	Present	insects	Generalist	4
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	58	●●	D	Perennial	Present	wind	Generalist	0
Maryland black snakeroot (<i>Sanicula marilandica</i>)	53	●	UNK	Perennial	Absent	insects	Generalist	4
American vetch (<i>Vicia americana</i>)	53	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Blue giant hyssop (<i>Agastache foeniculum</i>)	47	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Starry false Solomon's seal (<i>Smilacina stellata</i>)	47	●	UNK	Perennial	Present	insects	Early spring insect	4
Common strawberry (<i>Fragaria virginiana</i>)	37	●●	SC	Perennial	Present	insects	Early spring insect	3
Bastard toadflax (<i>Comandra umbellata</i>)	32	●	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	26	●	UNK	Perennial	Present	insects	Early spring insect	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	26	●	SI	Perennial	Present	wind	Generalist	0
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	26	●	D	Perennial	Present	wind	Generalist	0
Columbine (<i>Aquilegia canadensis</i>)	26	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Lopseed (<i>Phryma leptostachya</i>)	26	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	26	●	SC	Perennial	Present	insects	Generalist	2
Giant goldenrod (<i>Solidago gigantea</i>)	21	●	GM	Perennial	Present	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	21	●	UNK	Perennial	Present	insects	Generalist	3
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	16	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	16	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Gray goldenrod (<i>Solidago nemoralis</i>)	16	●	SI	Perennial	Present	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	16	●	D	Perennial	Absent	insects	Generalist	5
Red baneberry (<i>Actaea rubra</i>)	16	●	SC	Perennial	Present	insects	Early spring insect	3
Bracken (<i>Pteridium aquilinum</i>)	16	●●●	SC	Perennial	Present	wind, water	Generalist	0
Wild bergamot (<i>Monarda fistulosa</i>)	16	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	74	●●●	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	47	●●	UNK	Perennial	Absent	wind	Generalist	0
Nodding wild rye (<i>Elymus canadensis</i>)	42	●	SC	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	42	●	UNK	Perennial	Absent	wind	Generalist	0
Kalm's brome (<i>Bromus kalmii</i>)	32	●	SC	Perennial	Absent	wind	Generalist	0
Marsh muhly grass (<i>Muhlenbergia racemosa</i>)	21	●	UNK	Perennial	Present	wind	Generalist	0

Interrupted wild rye (<i>Elymus diversiglumis</i>)	21	●	UNK	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	16	●●●	SC/si	Perennial	Absent	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	16	●	SI	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	16	●	SC	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	37	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Climbing bittersweet (<i>Celastrus scandens</i>)	32	●	D or PD	Perennial	Present	insects	Generalist	4
Virginia creeper (<i>Parthenocissus spp.</i>)	11	●●	SC	Perennial	Present	insects	Generalist	2
Low Shrubs								
Poison ivy (<i>Toxicodendron rydbergii</i>)	100	●●●	D	Perennial	Present	insects	Generalist	4
Red raspberry (<i>Rubus idaeus</i>)	26	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Juneberries (<i>Amelanchier spp.</i>)	100	●●●	SC	Perennial	Present	insects	Generalist	Varies
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	95	●●●	SC	Perennial	Present	insects	Generalist	2
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	84	●●	UNK	Perennial	Present	insects	Generalist	3
American hazelnut (<i>Corylus americana</i>)	74	●●●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	68	●●	SI	Perennial	Present	insects	Early spring insect	5
Nannyberry (<i>Viburnum lentago</i>)	58	●	SI	Perennial	Present	insects	Generalist	4
Gray dogwood (<i>Cornus racemosa</i>)	42	●●●	UNK	Perennial	Present	insects	Generalist	3
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	42	●	SC	Perennial	Present	insects	Generalist	2
Hawthorn (<i>Crataegus spp.</i>)	37	●	Varies	Perennial	Absent	insects	Early spring insect	Varies
Wild plum (<i>Prunus americana</i>)	16	●	SI	Perennial	Present	insects	Early spring insect	5
Beaked hazelnut (<i>Corylus cornuta</i>)	11	●●●●	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Bur oak	95	●●●●	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	16	●	D	Perennial	Present	wind	Generalist	0
Balsam poplar	11	●	D	Perennial	Present	wind	Generalist	0
Canada plum	5	●	SI	Perennial	Present	insects	Early spring insect	5
Green ash	5	●	D	Perennial	UNK	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Tree Subcanopy								
Bur oak	42	●●	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	21	●	D	Perennial	Present	wind	Generalist	0
Balsam poplar	-	-	D	Perennial	Present	wind	Generalist	0
Canada plum	11	●	SI	Perennial	Present	insects	Early spring insect	5
Green ash	5	●	D	Perennial	UNK	wind	Generalist	0
Box elder	11	●	D	Perennial	Absent	insects	Early spring insect	6
Tree Shrub Layer								
Bur oak	68	●●	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	21	●	D	Perennial	Present	wind	Generalist	0

Balsam poplar	5	•	D	Perennial	Present	wind	Generalist	0
Canada plum	-	-	SI	Perennial	Present	insects	Early spring insect	5
Green ash	21	•	D	Perennial	UNK	wind	Generalist	0
Box elder	16	••	D	Perennial	Absent	insects	Early spring insect	6

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

FDw34 Northwestern Mesic Aspen-Oak Woodland

Pollinator Resources

Mesic woodlands dominated by quaking aspen and bur oak with occasional jack pine. Present on level, sandy soils, occasionally capped with loamy sediment, on the Glacial Lake Agassiz plain. Moderate surface fires were common historically, and catastrophic fires occasional.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDw34 include:

Bees:

Andrena ziziae (*Zizia*)

Macropis nuda (*Lysimachia*)

Andrena sigmundi (*Salix*)

Butterflies:

Erynnis icelus (*Populus tremuloides*)

Polygonia progne (*Ribes*)

Boloria chariclea (*Salix*)

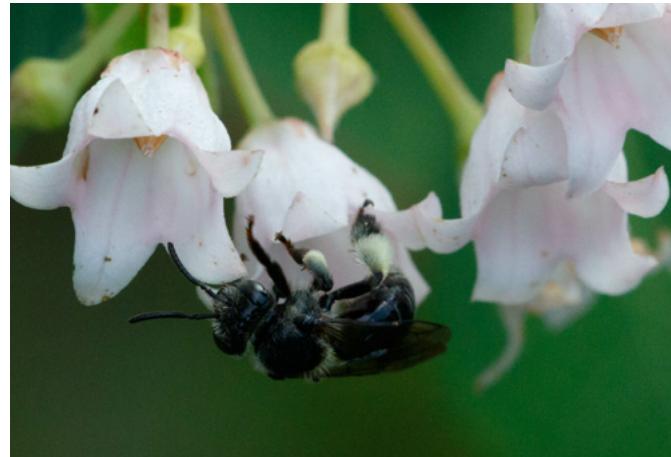
Moths:

Hemileuca nevadensis (*Populus tremuloides*)

Phyllonorycter apparella (*Populus tremuloides*)

Chlorochlamys chloroleucaria (*Achillea millefolium*)

Eugonobapta nivosaria (*Thalictrum dasycarpum*)



Macropis nuda uses native *Lysimachia* (loosestrife) species as a host plant. Photo: Max McCarthy

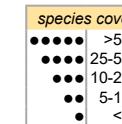


Chlorochlamys chloroleucaria (blackberry looper) uses *Achillea millefolium* (yarrow) as a host plant.
Photo: Bob Dunlap

FDw34 Northwestern Mesic Aspen-Oak Woodland

Pollinator Resources Table

FDw34 Class Factsheet. Based on 18plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
American vetch (<i>Vicia americana</i>)	100	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Canada mayflower (<i>Maianthemum canadense</i>)	94	•••	SI	Perennial	Present	insects	Early spring insect	5
Lindley's aster (<i>Aster ciliolatus</i>)	94	••	UNK	Perennial	Present	insects	Generalist	3
Northern bedstraw (<i>Galium boreale</i>)	89	•	SI	Perennial	Present	insects	Generalist	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	89	•	UNK	Perennial	Absent	insects	Generalist	4
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	89	••	D	Perennial	Present	wind	Generalist	0
Common strawberry (<i>Fragaria virginiana</i>)	89	••	SC	Perennial	Present	insects	Early spring insect	3
Veiny pea (<i>Lathyrus venosus</i>)	83	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Golden alexanders (<i>Zizia aurea</i>)	72	•	SC	Perennial	Absent	insects	Generalist	3
Bastard toadflax (<i>Comandra umbellata</i>)	72	•	SC	Perennial	Present	insects	Early spring insect	3
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	72	•	SI	Perennial	Present	insects	Generalist	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	67	•	D	Perennial	Present	wind	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	61	••	D	Perennial	Present	insects	Generalist	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	56	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Canada goldenrod (<i>Solidago canadensis</i>)	56	•	SI	Perennial	Present	insects	Generalist	4
Starry false Solomon's seal (<i>Smilacina stellata</i>)	56	•	UNK	Perennial	Present	insects	Early spring insect	4
Erect, Smooth, or Illinois carrion-flower*	50	•	D	Perennial	Present	insects	Somewhat specific insect	5
Flat-topped aster (<i>Aster umbellatus</i>)	39	•	UNK	Perennial	Present	insects	Generalist	3
Virginia thimbleweed (<i>Anemone virginiana</i>)	39	•	UNK	Perennial	Present	insects	Generalist	3
White rattlesnakeroot (<i>Prenanthes alba</i>)	33	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
White sage (<i>Artemisia ludoviciana</i>)	28	•	SC	Perennial	Present	wind	Generalist	0
Fringed loosestrife (<i>Lysimachia ciliata</i>)	28	•	SI	Perennial	Present	insects	Generalist	4
Wood anemone (<i>Anemone quinquefolia</i>)	28	•	UNK	Perennial	Present	insects	Early spring insect	4
Yarrow (<i>Achillea millefolium</i>)	28	•	SI	Perennial	Present	insects	Generalist	4
Wood betony (<i>Pedicularis canadensis</i>)	28	•	UNK	Perennial	Present	insects	Buzz pollination	5
Seneca snakeroot (<i>Polygala senega</i>)	28	•	CH	Perennial	Absent	insects	Generalist	5
Side-flowering sandwort (<i>Arenaria lateriflora</i>)	22	•	SC	Perennial	Present	insects	Generalist	2
Harebell (<i>Campanula rotundifolia</i>)	22	•	± SI	Perennial	Present	insects	Generalist	4
Alumroot (<i>Heuchera richardsonii</i>)	22	•	SI	Perennial	Present	insects	Generalist	4
Canada milk vetch (<i>Astragalus canadensis</i>)	22	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	89	•••	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	83	•••	SC	Perennial	Present	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	61	••	UNK	Perennial	Absent	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	50	••	A	Perennial	Present	wind	Generalist	0
Interrupted wild rye (<i>Elymus diversiglumis</i>)	39	•	UNK	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	33	•	UNK	Perennial	Weakly	wind	Generalist	0

Fringed brome (<i>Bromus ciliatus</i>)	33	●	SC	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	33	●	SC/si	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	44	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Low Shrubs								
Poison ivy (<i>Toxicodendron rydbergii</i>)	94	●●●	D	Perennial	Present	insects	Generalist	4
Dwarf bilberry (<i>Vaccinium cespitosum</i>)	28	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	28	●●●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
Juneberries (<i>Amelanchier</i> spp.)	100	●●●	Varies	Perennial	Present	insects	Early spring insect	Varies
Chokecherry (<i>Prunus virginiana</i>)	94	●●	SI	Perennial	Present	insects	Early spring insect	5
American hazelnut (<i>Corylus americana</i>)	83	●●●●	Di	Perennial	Present	wind	Generalist	0
Bebb's willow (<i>Salix bebbiana</i>)	72	●	D	Perennial	Present	insects	Early spring insect	5
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	67	●	UNK	Perennial	Present	insects	Generalist	3
Snowberry or Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	67	●●	SC	Perennial	Present	insects	Generalist	2
Gray dogwood (<i>Cornus racemosa</i>)	61	●●	UNK	Perennial	Present	insects	Generalist	3
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	50	●●	SC	Perennial	Present	insects	Generalist	2
Wood's rose (<i>Rosa woodsii</i>)	39	●	SI	Perennial	Present	insects	Generalist	4
Beaked hazelnut (<i>Corylus cornuta</i>)	33	●●●●	Di	Perennial	Present	wind	Generalist	0
Meadowsweet (<i>Spiraea alba</i>)	33	●	SC	Perennial	Present	insects	Generalist	2
Swamp gooseberry (<i>Ribes hirtellum</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Pin cherry (<i>Prunus pensylvanica</i>)	28	●	SI	Perennial	Present	insects	Early spring insect	5
Prairie willow (<i>Salix humilis</i>)	22	●	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Quaking aspen	89	●●●●	D	Perennial	Present	wind	Generalist	0
Bur oak	61	●●●	SI	Perennial	Present	wind	Generalist	0
Jack pine	11	●●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	6	●	Di	Perennial	Present	wind	Generalist	0
White spruce	6	●●●	UNK	Perennial	Absent	wind	Generalist	0
Canada plum	6	●	SI	Perennial	Present	insects	Early spring insect	5
Tree Subcanopy								
Quaking aspen	78	●●●	D	Perennial	Present	wind	Generalist	0
Bur oak	61	●●	SI	Perennial	Present	wind	Generalist	0
Jack pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
White spruce	6	●	UNK	Perennial	Absent	wind	Generalist	0
Canada plum	6	●	SI	Perennial	Present	insects	Early spring insect	5

Tree Shrub Layer

Quaking aspen	44	••	D	Perennial	Present	wind	Generalist	0
Bur oak	94	••	SI	Perennial	Present	wind	Generalist	0
Jack pine	6	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
White spruce	6	•	UNK	Perennial	Absent	wind	Generalist	0
Canada plum	17	•	SI	Perennial	Present	insects	Early spring insect	5

FDw44 Northwestern Dry-Mesic Aspen Woodland

Pollinator Resources

Wet-mesic woodlands dominated by quaking aspen. Present on poorly drained, flat, sandy soils, occasionally capped with loamy sediment, on the Glacial Lake Agassiz plain and rarely on the Anoka Sand Plain. Surface fires were common historically, and catastrophic crown fires were occasional.

Examples of insect pollinators (and their associated host plants in parentheses) that use FDw44 include:

Bees:

- Melissodes rivalis* (*Cirsium*)
- Andrena ziziae* (*Zizia*)
- Perdita maculigera* (*Salix*)
- Heriades variolosa* (*Asteraceae*)

Butterflies:

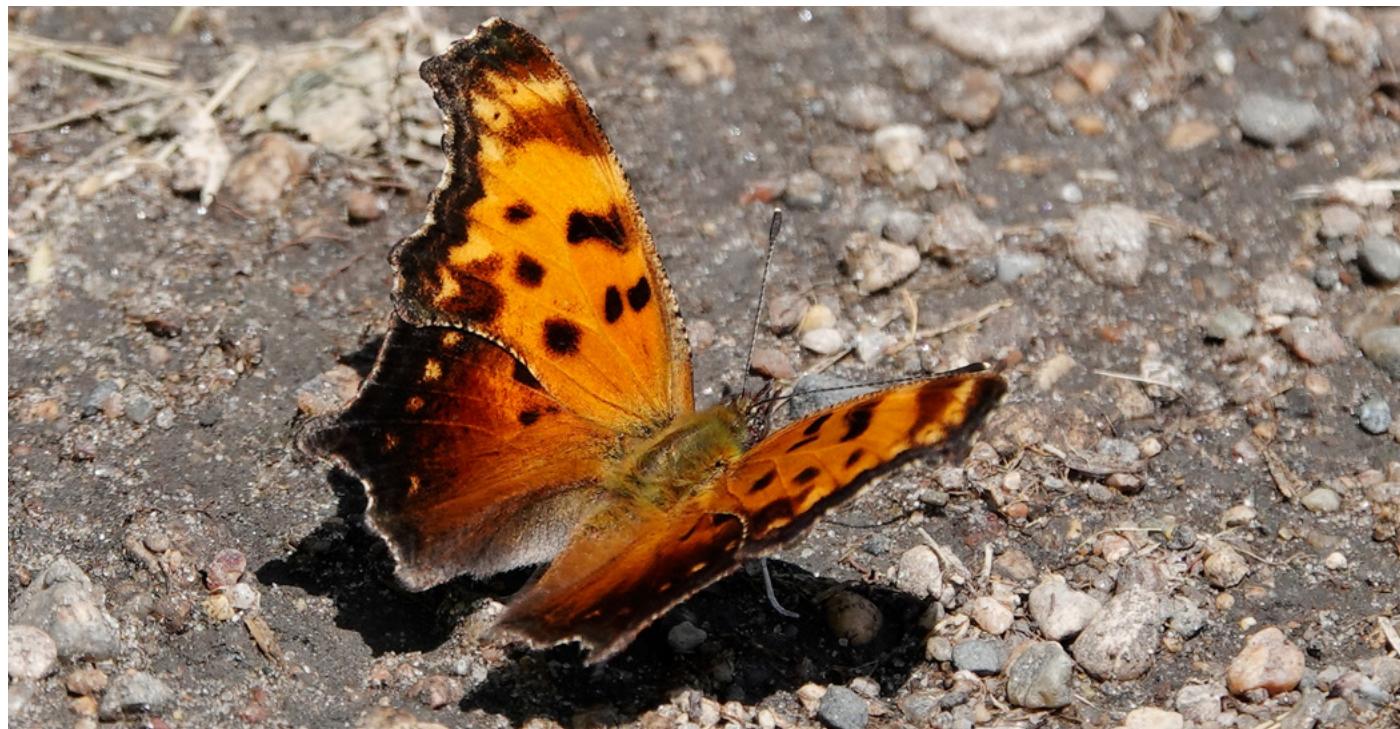
- Satyrium titus* (*Prunus*)
- Polygonia progne* (*Ribes*)
- Callophrys niphon* (*Picea, Pinus*)

Moths:

- Hemileuca nevadensis* (*Populus tremuloides*)
- Eugonobapta nivosaria* (*Thalictrum dasycarpum*)
- Tricholita signata* (*Cirsium muticum*)



Tricholita signata (signate Quaker) uses *Cirsium muticum* (swamp thistle) as a host plant.
Photo: Bob Dunlap

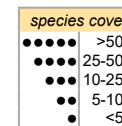


Polygonia progne (gray comma) uses *Ribes* (currant, gooseberry) species as a host plant. Photo: Bob Dunlap

FDw44 Northwestern Wet-Mesic Aspen Woodland

Pollinator Resources Table

FDw44 Class Factsheet. Based on 44 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Starry false Solomon's seal (<i>Smilacina stellata</i>)	93	●	UNK	Perennial	Present	insects	Early spring insect	4
Common strawberry (<i>Fragaria virginiana</i>)	89	•••	SC	Perennial	Present	insects	Early spring insect	3
Northern bedstraw (<i>Galium boreale</i>)	89	••	SI	Perennial	Present	insects	Generalist	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	84	●	UNK	Perennial	Absent	insects	Generalist	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	82	••	D	Perennial	Present	wind	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	82	••	SC	Perennial	Present	insects	Generalist	2
Canada goldenrod (<i>Solidago canadensis</i>)	82	••	SI	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	73	••	SI	Perennial	Present	insects	Early spring insect	5
American vetch (<i>Vicia americana</i>)	73	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Lindley's aster (<i>Aster ciliolatus</i>)	68	••	UNK	Perennial	Present	insects	Generalist	3
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	61	••	D	Perennial	Present	wind	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	61	•••	D	Perennial	Present	insects	Generalist	4
Flat-topped aster (<i>Aster umbellatus</i>)	59	●	UNK	Perennial	Present	insects	Generalist	3
Golden alexanders (<i>Zizia aurea</i>)	57	••	SC	Perennial	Absent	insects	Generalist	3
Side-flowering aster (<i>Aster lateriflorus</i>)	57	●	SI	Perennial	Present	insects	Generalist	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	50	●	SI	Perennial	Present	insects	Generalist	4
Fringed loosestrife (<i>Lysimachia ciliata</i>)	48	••	SI	Perennial	Present	insects	Generalist	4
Swamp thistle (<i>Cirsium muticum</i>)	43	●	GD	Biennial	Absent	insects	Generalist	6
Red-stemmed aster (<i>Aster puniceus</i>)	41	●	SI	Perennial	Present	insects	Generalist	4
Yarrow (<i>Achillea millefolium</i>)	41	●	SI	Perennial	Present	insects	Generalist	4
Bastard toadflax (<i>Comandra umbellata</i>)	41	●	SC	Perennial	Present	insects	Early spring insect	3
Field horsetail (<i>Equisetum arvense</i>)	39	●	SC	Perennial	Present	wind, water	Generalist	0
White rattlesnakeroot (<i>Prenanthes alba</i>)	36	●	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	36	●	UNK	Perennial	Present	insects	Early spring insect	4
Marsh vetchling (<i>Lathyrus palustris</i>)	34	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Pale vetchling (<i>Lathyrus ochroleucus</i>)	34	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Kalm's hawkweed (<i>Hieracium kalmii</i>)	32	●	UNK	Perennial	Absent	insects	Generalist	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	30	●	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	30	●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Bluejoint (<i>Calamagrostis canadensis</i>)	66	••	A	Perennial	Present	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	59	•••	SC	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	57	●	SC	Perennial	Absent	wind	Generalist	0
Kentucky bluegrass (<i>Poa pratensis</i>)	45	••	SC	Perennial	Absent	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	45	••	UNK	Perennial	Absent	wind	Generalist	0
False melic grass (<i>Schizachne purpurascens</i>)	45	●	UNK	Perennial	Absent	wind	Generalist	0
Fowl bluegrass (<i>Poa palustris</i>)	32	●	SC	Perennial	Present	wind	Generalist	0

Slender wheatgrass (<i>Elymus trachycaulus</i>)	32	•	UNK	Perennial	Weakly	wind	Generalist	0
Marsh straw sedge (<i>Carex tenera</i>)	30	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	43	•	SC	Perennial	Weakly	insects	Somewhat specific insect	2
Low Shrubs								
Poison ivy (<i>Toxicodendron rydbergii</i>)	84	•••	D	Perennial	Present	insects	Generalist	4
Red raspberry (<i>Rubus idaeus</i>)	36	••	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	77	•	SC	Perennial	Present	insects	Generalist	2
Juneberries (<i>Amelanchier</i> spp.)	73	••	Varies	Perennial	Present	insects	Early spring insect	Varies
American hazelnut (<i>Corylus americana</i>)	70	•••	Di	Perennial	Present	wind	Generalist	0
Gray dogwood (<i>Cornus racemosa</i>)	66	••	UNK	Perennial	Present	insects	Generalist	3
Swamp gooseberry (<i>Ribes hirtellum</i>)	64	•	SI	Perennial	Present	insects	Generalist	4
Bebb's willow (<i>Salix bebbiana</i>)	64	•	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	64	•••	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	59	•	SI	Perennial	Present	insects	Early spring insect	5
Highbush cranberry (<i>Viburnum trilobum</i>)	59	•	UNK	Perennial	Present	insects	Generalist	3
Dwarf alder (<i>Rhamnus alnifolia</i>)	57	•	UNK	Perennial	Absent	insects	Generalist	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	39	•	UNK	Perennial	Present	insects	Generalist	3
Nannyberry (<i>Viburnum lentago</i>)	36	•	SI	Perennial	Present	insects	Generalist	4
Pussy willow (<i>Salix discolor</i>)	34	•	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	30	••	Di	Perennial	Present	wind	Generalist	0
Beaked hazelnut (<i>Corylus cornuta</i>)	30	•••	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Quaking aspen	91	••••	D	Perennial	Present	wind	Generalist	0
Bur oak	34	•	SI	Perennial	Present	wind	Generalist	0
Balsam poplar	20	•••	D	Perennial	Present	wind	Generalist	0
Green ash	16	•••	D	Perennial	UNK	wind	Generalist	0
American elm	14	••	Di	Perennial	Absent	wind	Generalist	0
White spruce	14	•••	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Quaking aspen	77	•••	D	Perennial	Present	wind	Generalist	0
Bur oak	43	•	SI	Perennial	Present	wind	Generalist	0
Balsam poplar	16	•	D	Perennial	Present	wind	Generalist	0
Green ash	14	•	D	Perennial	UNK	wind	Generalist	0
American elm	14	•	Di	Perennial	Absent	wind	Generalist	0
White spruce	2	•	UNK	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Quaking aspen	73	••	D	Perennial	Present	wind	Generalist	0
Bur oak	80	•	SI	Perennial	Present	wind	Generalist	0

Balsam poplar	11	•	D	Perennial	Present	wind	Generalist	0
Green ash	16	•••	D	Perennial	UNK	wind	Generalist	0
American elm	27	•	Di	Perennial	Absent	wind	Generalist	0
White spruce	9	•	UNK	Perennial	Absent	wind	Generalist	0

MHn35 Northern Mesic Hardwood Forest

Pollinator Resources

Mesic to dry-mesic hardwood forests on well-drained to moderately well-drained loamy soils, most often on stagnation moraines and till plains and less frequently on bedrock hills.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHn35 include:

Bees:

Andrena melanochroa (Rosaceae)

Osmia laticeps (Vaccinium)

Andrena persimulata (Cornus [Swida])

Butterflies:

Satyrium titus (Prunus)

Oeneis macounii (Oryzopsis asperifolia)

Polygonia gracilis (Ribes)

Moths:

Amphipyra pyramidoides (Corylus cornuta)

Cerastis tenebrifera (Anemone quinquefolia)

Archiearis infans (Betula papyrifera)

Hemaris aethra (Diervilla lonicera)



Satyrium titus (coral hairstreak) uses *Prunus* (plum, cherry) species as a host plant. Photo: Bob Dunlap

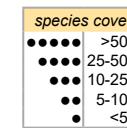


Cerastis tenebrifera (reddish speckled dart) uses *Anemone quinquefolia* (wood anemone) as a host plant. Photo: Kyle Johnson

MHn35 Northern Mesic Hardwood Forest

Pollinator Resources Table

MHn35 Class Factsheet. Based on 321 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	94	•••	D	Perennial	Present	insects	Generalist	4
Large-leaved aster (<i>Aster macrophyllus</i>)	93	••	A	Perennial	Present	insects	Generalist	2
Rose twistedstalk (<i>Streptopus roseus</i>)	87	•	UNK	Perennial	Present	insects	Early spring insect	4
Canada mayflower (<i>Maianthemum canadense</i>)	86	••	SI	Perennial	Present	insects	Early spring insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	74	•	UNK	Perennial	Present	insects	Early spring insect	4
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	73	••	SI	Perennial	Present	insects	Early spring insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	73	•	UNK	Perennial	Present	insects	Generalist	3
Bluebead lily (<i>Clintonia borealis</i>)	71	•	SI	Perennial	Present	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	67	•	D	Perennial	Absent	insects	Generalist	5
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	61	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Starflower (<i>Trientalis borealis</i>)	61	•	SI/sc	Perennial	Present	insects	Generalist	3
Round-lobed hepatica (<i>Anemone americana</i>)	60	•	SC	Perennial	Present	insects	Early spring insect	3
Lady fern (<i>Athyrium filix-femina</i>)	59	••	SC	Perennial	Present	wind, water	Generalist	0
Pale bellwort (<i>Uvularia sessilifolia</i>)	54	•	SI	Perennial	Present	insects	Early spring insect	5
Bracken (<i>Pteridium aquilinum</i>)	51	••	SC	Perennial	Present	wind, water	Generalist	0
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	50	•	Varies	Perennial	Present	insects	Varies	Varies
Dwarf raspberry (<i>Rubus pubescens</i>)	48	•	SC	Perennial	Present	insects	Generalist	2
Early meadow-rue (<i>Thalictrum dioicum</i>)	47	•	SI	Perennial	Present	wind	Generalist	0
Rattlesnake fern (<i>Botrychium virginianum</i>)	46	•	SC	Perennial	Present	wind, water	Generalist	0
Pale vetchling (<i>Lathyrus ochroleucus</i>)	40	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Maryland black snakeroot (<i>Sanicula marilandica</i>)	39	•	UNK	Perennial	Absent	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	39	•	SC	Perennial	Present	insects	Early spring insect	3
Red baneberry (<i>Actaea rubra</i>)	39	•	SC	Perennial	Present	insects	Early spring insect	3
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	36	•	SC	Perennial	Present	wind, water	Generalist	0
American spikenard (<i>Aralia racemosa</i>)	35	•	UNK	Perennial	Present	insects	Generalist	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	32	•	UNK	Perennial	Present	insects	Early spring insect	4
Wild ginger (<i>Asarum canadense</i>)	23	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Veiny pea (<i>Lathyrus venosus</i>)	22	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Elliptic shinleaf (<i>Pyrola elliptica</i>)	22	•	UNK	Perennial	Present	insects	Buzz pollination	5
Lindley's aster (<i>Aster ciliolatus</i>)	21	•	UNK	Perennial	Present	insects	Generalist	3
Interrupted fern (<i>Osmunda claytoniana</i>)	16	••	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	91	••	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	85	•••	SC	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	38	•	SC	Perennial	Present	wind	Generalist	0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	35	•	UNK	Perennial	Present	wind	Generalist	0
Drooping wood sedge (<i>Carex arctata</i>)	17	•	SC	Perennial	Present	wind	Generalist	0

Low Shrubs								
Trailing blackberries (<i>Rubus flagellaris</i> and similar <i>Rubus</i>)	14	••	Varies	Perennial	Present	insects	Generalist	Varies
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	12	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	86	•••	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	72	•	SI	Perennial	Present	insects	Early spring insect	5
Fly honeysuckle (<i>Lonicera canadensis</i>)	62	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	62	•	UNK	Perennial	Present	insects	Generalist	3
Juneberries (<i>Amelanchier</i> spp.)	52	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Mountain maple (<i>Acer spicatum</i>)	49	••	SI	Perennial	Absent	insects	Early spring insect	6
Bush honeysuckle (<i>Diervilla lonicera</i>)	45	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Leatherwood (<i>Dirca palustris</i>)	42	••	SC	Perennial	Absent	insects	Somewhat specific insect	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	41	•	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	34	•	SI	Perennial	Present	insects	Generalist	4
Hairy honeysuckle (<i>Lonicera hirsuta</i>)	24	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Round-leaved dogwood (<i>Cornus rugosa</i>)	18	•	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Sugar maple	82	••••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	65	•••	SI	Perennial	Absent	insects	Generalist	5
Paper birch	61	•••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	49	•••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	31	•••	D	Perennial	Present	wind	Generalist	0
Red maple	31	•••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	24	••	UNK	Perennial	Present	wind	Generalist	0
Big-toothed aspen	13	•••	D	Perennial	Present	wind	Generalist	0
Bur oak	11	••	SI	Perennial	Present	wind	Generalist	0
Yellow birch	10	••	Di	Perennial	Present	wind	Generalist	0
Balsam fir	8	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	-	-	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Sugar maple	88	••••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	52	•••	SI	Perennial	Absent	insects	Generalist	5
Paper birch	31	•••	Di	Perennial	Present	wind	Generalist	0
Northern red oak	25	••	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	13	••	D	Perennial	Present	wind	Generalist	0
Red maple	37	••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	68	•••	UNK	Perennial	Present	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Bur oak	9	••	SI	Perennial	Present	wind	Generalist	0
Yellow birch	8	••	Di	Perennial	Present	wind	Generalist	0

Balsam fir	18	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	8	•	UNK	Perennial	Absent	wind	Generalist	0
<i>Tree Shrublayer</i>								
Sugar maple	93	••••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	67	•	SI	Perennial	Absent	insects	Generalist	5
Paper birch	12	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	77	•	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	44	•	D	Perennial	Present	wind	Generalist	0
Red maple	60	•	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	72	••	UNK	Perennial	Present	wind	Generalist	0
Big-toothed aspen	9	•	D	Perennial	Present	wind	Generalist	0
Bur oak	12	•	SI	Perennial	Present	wind	Generalist	0
Yellow birch	-	-	Di	Perennial	Present	wind	Generalist	0
Balsam fir	48	•	UNK	Perennial	Absent	wind	Generalist	0
White spruce	14	•	UNK	Perennial	Absent	wind	Generalist	0

MHn44 Northern Wet-Mesic Boreal Hardwood-Conifer Forest Pollinator Resources

Wet-mesic or mesic hardwood and hardwood-conifer forests, most commonly on level, clayey sites with high local water tables on glacial lake deposits, stagnation moraines, and till plains.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHn44 include:

Bees:

Hylaeus sparsus (Apiaceae)

Osmia inermis (Vaccinium)

Andrena persimulata (Cornus [Swida])

Butterflies:

Satyrium titus (Prunus)

Chlosyne nycteis (Eurybia macrophylla)

Oeneis macounii (Oryzopsis asperifolia)

Euphyes dion (Carex)

Moths:

Amphipyra pyramidoides (Corylus cornuta)

Lithophane innominata (Acer saccharum)

Choristoneura fumiferana (Abies balsamea)



Hylaeus sparsus uses species in the Apiaceae (carrot) family as a host plant. Photo: Michael Veit

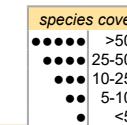


Oeneis macounii (Canada Arctic) uses *Oryzopsis asperifolia* (roughleaf ricegrass) as a host plant. Photo: Kyle Johnson

MHn44 Northern Wet-Mesic Boreal Hardwood Conifer Forest

Pollinator Resources Table

MHn44 Class Factsheet. Based on 153 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements		Pollination Index
							insects	Generalist	
Canada mayflower (<i>Maianthemum canadense</i>)	95	●	SI	Perennial	Present	insects	Early spring insect		5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	93	●●●	D	Perennial	Present	insects	Generalist		4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	85	●	UNK	Perennial	Present	insects	Generalist		3
Dwarf raspberry (<i>Rubus pubescens</i>)	85	●●	SC	Perennial	Present	insects	Generalist		2
Large-leaved aster (<i>Aster macrophyllus</i>)	84	●●●	A	Perennial	Present	insects	Generalist		2
Rose twistedstalk (<i>Streptopus roseus</i>)	79	●	UNK	Perennial	Present	insects	Early spring insect		4
Common strawberry (<i>Fragaria virginiana</i>)	75	●	SC	Perennial	Present	insects	Early spring insect		3
Red baneberry (<i>Actaea rubra</i>)	74	●	SC	Perennial	Present	insects	Early spring insect		3
Wood anemone (<i>Anemone quinquefolia</i>)	73	●	UNK	Perennial	Present	insects	Early spring insect		4
Lady fern (<i>Athyrium filix-femina</i>)	71	●●	SC	Perennial	Present	wind, water	Generalist		0
Bluebead lily (<i>Clintonia borealis</i>)	69	●	SI	Perennial	Present	insects	Generalist		4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	68	●	D	Perennial	Absent	insects	Generalist		5
Bunchberry (<i>Cornus canadensis</i>)	66	●	SI	Perennial	Present	insects	Generalist		4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	64	●	UNK	Perennial	Absent	insects	Generalist		4
Starflower (<i>Trientalis borealis</i>)	64	●	SI/sc	Perennial	Present	insects	Generalist		3
Wild ginger (<i>Asarum canadense</i>)	62	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect		3
Bracken (<i>Pteridium aquilinum</i>)	61	●●	SC	Perennial	Present	wind, water	Generalist		0
Early meadow-rue (<i>Thalictrum dioicum</i>)	59	●	SI	Perennial	Present	wind	Generalist		0
Naked miterwort (<i>Mitella nuda</i>)	55	●	UNK	Perennial	Present	insects	Early spring insect		4
Palmate sweet coltsfoot (<i>Petasites frigidus</i>)	49	●	D	Perennial	Present	insects	Early spring insect		5
Round-lobed hepatica (<i>Anemone americana</i>)	42	●	SC	Perennial	Present	insects	Early spring insect		3
Spinulose shield fern or Glandular wood fern (<i>Dryopteris spp.</i>)*	41	●	SC	Perennial	Present	wind, water	Generalist		0
Lindley's aster (<i>Aster ciliolatus</i>)	40	●	UNK	Perennial	Present	insects	Generalist		3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	37	●	SI	Perennial	Present	insects	Somewhat specific insect		5
Rattlesnake fern (<i>Botrychium virginianum</i>)	37	●	SC	Perennial	Present	wind, water	Generalist		0
Pale bellwort (<i>Uvularia sessilifolia</i>)	34	●	SI	Perennial	Present	insects	Early spring insect		5
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	31	●●	SI	Perennial	Present	insects	Early spring insect		5
Nodding trillium (<i>Trillium cernuum</i>)	31	●	A	Perennial	Present	insects	Early spring insect		3
Woodland horsetail (<i>Equisetum sylvaticum</i>)	29	●	SC	Perennial	Present	wind, water	Generalist		0
Side-flowering aster (<i>Aster lateriflorus</i>)	29	●	SI	Perennial	Present	insects	Generalist		4
Grasses and Sedges									
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	73	●●	UNK	Perennial	Absent	wind	Generalist		0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	72	●●●	SC	Perennial	Present	wind	Generalist		0
Long-stalked sedge (<i>Carex pedunculata</i>)	63	●●	SC	Perennial	Present	wind	Generalist		0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	41	●	UNK	Perennial	Present	wind	Generalist		0
Pointed woodrush (<i>Luzula acuminata</i>)	33	●	UNK	Perennial	Present	wind	Generalist		0
Drooping wood sedge (<i>Carex arctata</i>)	27	●	SC	Perennial	Present	wind	Generalist		0

Graceful sedge (<i>Carex gracillima</i>)	26	●	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	20	●	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	29	●	SC	Perennial	Present	insects	Generalist	2
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	18	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	86	●●●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	67	●	SI	Perennial	Present	insects	Early spring insect	5
Bush honeysuckle (<i>Diervilla lonicera</i>)	62	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Juneberries (<i>Amelanchier</i> spp.)	58	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Mountain maple (<i>Acer spicatum</i>)	58	●●●	SI	Perennial	Absent	insects	Early spring insect	6
Fly honeysuckle (<i>Lonicera canadensis</i>)	56	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	52	●	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	44	●	SI	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	37	●	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Quaking aspen	70	●●●●	D	Perennial	Present	wind	Generalist	0
Paper birch	65	●●	Di	Perennial	Present	wind	Generalist	0
Balsam fir	41	●●●	UNK	Perennial	Absent	wind	Generalist	0
White spruce	31	●●●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	27	●●●	D	Perennial	Absent	insects	Early spring insect	6
Black ash	22	●●	D	Perennial	Absent	wind	Generalist	0
Basswood	20	●●●	SI	Perennial	Absent	insects	Generalist	5
Bur oak	16	●●	SI	Perennial	Present	wind	Generalist	0
White pine	15	●●●	SI	Perennial	Absent	wind	Generalist	0
Balsam poplar	12	●●●	D	Perennial	Present	wind	Generalist	0
Sugar maple	10	●●●	D	Perennial	Absent	insects	Early spring insect	6
Green ash	10	●	D	Perennial	UNK	wind	Generalist	0
White cedar	9	●●●●	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	8	●●●	SI	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Quaking aspen	40	●●	D	Perennial	Present	wind	Generalist	0
Paper birch	36	●	Di	Perennial	Present	wind	Generalist	0
Balsam fir	49	●●●	UNK	Perennial	Absent	wind	Generalist	0
White spruce	23	●●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	28	●●●	D	Perennial	Absent	insects	Early spring insect	6
Black ash	48	●●	D	Perennial	Absent	wind	Generalist	0
Basswood	19	●●	SI	Perennial	Absent	insects	Generalist	5
Bur oak	18	●●	SI	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0

Balsam poplar	9	••	D	Perennial	Present	wind	Generalist	0
Sugar maple	18	•••	D	Perennial	Absent	insects	Early spring insect	6
Green ash	16	••	D	Perennial	UNK	wind	Generalist	0
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Quaking aspen	59	•	D	Perennial	Present	wind	Generalist	0
Paper birch	22	•	Di	Perennial	Present	wind	Generalist	0
Balsam fir	60	•	UNK	Perennial	Absent	wind	Generalist	0
White spruce	25	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	48	•	D	Perennial	Absent	insects	Early spring insect	6
Black ash	60	••	D	Perennial	Absent	wind	Generalist	0
Basswood	28	•	SI	Perennial	Absent	insects	Generalist	5
Bur oak	25	•	SI	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Balsam poplar	18	•	D	Perennial	Present	wind	Generalist	0
Sugar maple	28	••	D	Perennial	Absent	insects	Early spring insect	6
Green ash	33	••	D	Perennial	UNK	wind	Generalist	0
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	27	•	SI	Perennial	Present	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

MHn45 Northern Mesic Hardwood (Cedar) Forest

Pollinator Resources

Mesic hardwood and hardwood-conifer forests on sandy-loam soils in fireprotected sites on rugged, scoured bedrock terrain.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHn45 include:

Bees:

Andrena melanochroa (Rosaceae)

Hylaeus sparsus (Apiaceae)

Andrena persimulata (*Cornus* [*Swida*])

Butterflies:

Erynnis icelus (*Populus*)

Phyciodes tharos (*Eurybia macrophylla*)

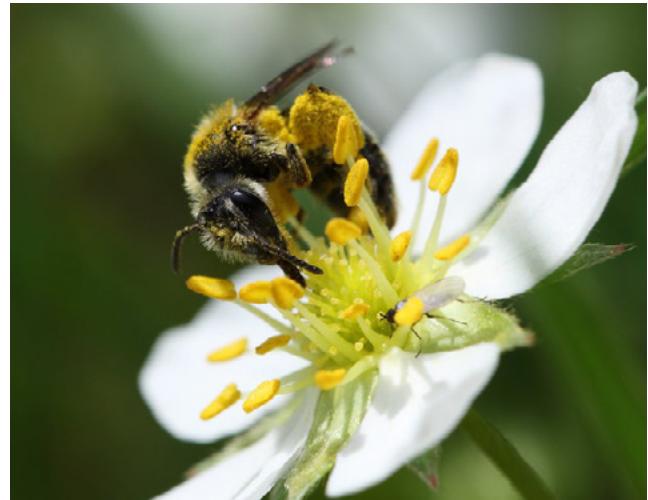
Argynnис atlantis (*Viola*)

Moths:

Lithophane innominata (*Acer saccharum*)

Eosphoropteryx thyatyroides (*Eosphoropteryx thyatyroides*)

Phyllonorycter apparella (*Populus tremuloides*)



Andrena melanochroa (rose miner bee) uses species in the Rosaceae (rose) family as a host plant.
Photo: Michael Veit

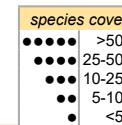


Phyciodes tharos (pearl crescent) uses *Eurybia macrophylla* (large-leaved aster) as a host plant. Photo: Bob Dunlap

MHn45 Northern Mesic Hardwood (Cedar) Forest

Pollinator Resources Table

MHn45 Class Factsheet. Based on 116 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Bluebead lily (<i>Clintonia borealis</i>)	93	●	SI	Perennial	Present	insects	Generalist	4
Rose twistedstalk (<i>Streptopus roseus</i>)	92	●	UNK	Perennial	Present	insects	Early spring insect	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	90	●	D	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	85	●	SI	Perennial	Present	insects	Early spring insect	5
Starflower (<i>Trifolialis borealis</i>)	83	●	SI/sc	Perennial	Present	insects	Generalist	3
Spinulose shield fern or Glandular wood fern*	78	●	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	71	●●	A	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	70	●	UNK	Perennial	Present	insects	Generalist	3
Lady fern (<i>Athyrium filix-femina</i>)	60	●	SC	Perennial	Present	wind, water	Generalist	0
Red or White baneberry (<i>Actaea rubra</i> or <i>A. pachypoda</i>)	58	●	SC	Perennial	Present	insects	Early spring insect	3
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	54	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	53	●	SC	Perennial	Present	wind, water	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	53	●	SC	Perennial	Present	insects	Generalist	2
Nodding trillium (<i>Trillium cernuum</i>)	49	●	A	Perennial	Present	insects	Early spring insect	3
Shining firmoss (<i>Huperzia lucidula</i>)	47	●	SC	Perennial	Present	wind, water	Generalist	0
Common oak fern (<i>Gymnocarpium dryopteris</i>)	47	●	SC	Perennial	Present	wind, water	Generalist	0
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	41	●●	Varies	Perennial	Present	insects	Varies	Varies
Wood anemone (<i>Anemone quinquefolia</i>)	38	●	UNK	Perennial	Present	insects	Early spring insect	4
Long beech fern (<i>Phegopteris connectilis</i>)	37	●●	SC	Perennial	Present	wind, water	Generalist	0
Alpine enchanter's nightshade (<i>Circaeа alpina</i>)	31	●	SC	Perennial	Present	insects	Generalist	2
Carolina spring beauty (<i>Claytonia caroliniana</i>)	30	●●	SC	Perennial	Present	insects	Early spring insect	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	30	●	D	Perennial	Absent	insects	Generalist	5
Panicked bluebells (<i>Mertensia paniculata</i>)	27	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Rattlesnake fern (<i>Botrychium virginianum</i>)	26	●	SC	Perennial	Present	wind, water	Generalist	0
Big-leaf white violet or Northern white violet**	24	●	Varies	Perennial	Present	insects	Varies	Varies
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	22	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Dutchman's breeches (<i>Dicentra cucullaria</i>)	17	●●	SI/sc	Perennial	Present	insects	Early spring insect, Somewhat specific insect	4
Bristly clubmoss (<i>Lycopodium annotinum</i>)	17	●●	SC	Perennial	Present	wind, water	Generalist	0
Wild ginger (<i>Asarum canadense</i>)	17	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Stemless blue violets (<i>Viola spp.</i>)***	17	●	Varies	Perennial	Present	insects	Varies	Varies
Bunchberry (<i>Cornus canadensis</i>)	16	●	SI	Perennial	Present	insects	Generalist	4
Touch-me-not (<i>Impatiens spp.</i>)	16	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Common false Solomon's seal (<i>Smilacina racemosa</i>)	15	●	UNK	Perennial	Present	insects	Early spring insect	4
Grasses and Sedges								
Long-stalked sedge (<i>Carex pedunculata</i>)	61	●●	SC	Perennial	Present	wind	Generalist	0

Mountain rice grass (<i>Oryzopsis asperifolia</i>)	55	●	UNK	Perennial	Absent	wind	Generalist	0
Drooping wood sedge (<i>Carex arctata</i>)	34	●	SC	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0
Dewey's sedge (<i>Carex deweyana</i>)	32	●	UNK	Perennial	Present	wind	Generalist	0
Fine-nerved sedge (<i>Carex leptonervia</i>)	20	●	UNK	Perennial	Present	wind	Generalist	0
Drooping woodreed (<i>Cinna latifolia</i>)	19	●	UNK	Perennial	Weakly	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	16	●	SC	Perennial	Present	wind	Generalist	0
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	29	●	SC	Perennial	Present	insects	Generalist	4
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	18	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	2
Shrubs								
Mountain maple (<i>Acer spicatum</i>)	88	●●●	SI	Perennial	Absent	insects	Early spring insect	6
Beaked hazelnut (<i>Corylus cornuta</i>)	75	●●●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	59	●	SI	Perennial	Present	insects	Early spring insect	5
Fly honeysuckle (<i>Lonicera canadensis</i>)	56	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	36	●	UNK	Perennial	Present	insects	Generalist	3
Swamp red currant (<i>Ribes triste</i>)	35	●	SI	Perennial	Present	insects	Generalist	4
Juneberries (<i>Amelanchier</i> spp.)	31	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Red-berried elder (<i>Sambucus racemosa</i>)	30	●	UNK	Perennial	Present	insects	Generalist	3
Canada yew (<i>Taxus canadensis</i>)	11	●	UNK	Perennial	Absent	wind	Generalist	0
Tree Canopy								
Sugar maple	79	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Yellow birch	46	●●●	Di	Perennial	Present	wind	Generalist	0
White spruce	41	●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	38	●●●	Di	Perennial	Present	wind	Generalist	0
White cedar	35	●●●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	19	●●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	16	●●	D	Perennial	Absent	insects	Early spring insect	6
Basswood	11	●●●	SI	Perennial	Absent	insects	Generalist	5
White pine	8	●●●	SI	Perennial	Absent	wind	Generalist	0
Quaking aspen	7	●●●	D	Perennial	Present	wind	Generalist	0
Mountain ashes	1	●	A	Perennial	Weakly	insects	Generalist	2
Tree Subcanopy								
Sugar maple	83	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Yellow birch	31	●●	Di	Perennial	Present	wind	Generalist	0
White spruce	31	●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	19	●●●	Di	Perennial	Present	wind	Generalist	0
White cedar	28	●●●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	34	●●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	16	●●	D	Perennial	Absent	insects	Early spring insect	6

Basswood	7	••	SI	Perennial	Absent	insects	Generalist	5
White pine	2	•	SI	Perennial	Absent	wind	Generalist	0
Quaking aspen	4	•	D	Perennial	Present	wind	Generalist	0
Mountain ashes	8	•	A	Perennial	Weakly	insects	Generalist	2
Tree Shrub Layer								
Sugar maple	86	••••	D	Perennial	Absent	insects	Early spring insect	6
Yellow birch	28	•	Di	Perennial	Present	wind	Generalist	0
White spruce	43	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	7	•	Di	Perennial	Present	wind	Generalist	0
White cedar	12	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	68	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	25	••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	9	•	SI	Perennial	Absent	insects	Generalist	5
White pine	6	•	SI	Perennial	Absent	wind	Generalist	0
Quaking aspen	6	•	D	Perennial	Present	wind	Generalist	0
Mountain ashes	50	•	A	Perennial	Weakly	insects	Generalist	2

*Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*); ** Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*); ***Stemless blue violets (*Viola sororia*, *V. nephrophylla*, and similar *Viola* spp.).

MHn46 Northern Wet-Mesic Hardwood Forest

Pollinator Resources

Wet-mesic lowland hardwood forests on level sites with clayey subsoils or high local water tables.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHn46 include:

Bees:

Hylaeus sparsus (Apiaceae)
Heriades variolosus (Asteraceae)
Colletes americanus (*Symphyotrichum*)



Butterflies:

Chlosyne nycteis (*Eurybia macrophylla*)
Polygonia progne (*Ribes*)
Erynnis juvenalis (*Quercus*)

Moths:

Amphipyra pyramidoides (*Corylus cornuta*)
Cucullia asteroides (*Eurybia macrophylla*)
Plagodis kuetzingi (*Fraxinus nigra*)
Cerastis tenebrifera (*Anemone quinquefolia*)

Colletes americanus (American Cellophane Bee) uses *Sympphyotrichum* (American aster) species as a host plant. Photo: Michael Veit

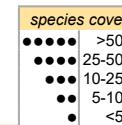


Cerastis tenebrifera (reddish speckled dart) uses *Anemone quinquefolia* (wood anemone) as a host plant.
Photo: Kyle Johnson

MHn46 Northern Wet-Mesic Hardwood Forest

Pollinator Resources Table

MHn46 Class Factsheet. Based on 72 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	86	••	D	Perennial	Present	insects	Generalist	4
Lady fern (<i>Athyrium filix-femina</i>)	85	•••	SC	Perennial	Present	wind, water	Generalist	0
Canada mayflower (<i>Maianthemum canadense</i>)	83	•	SI	Perennial	Present	insects	Early spring insect	5
Dwarf raspberry (<i>Rubus pubescens</i>)	83	••	SC	Perennial	Present	insects	Generalist	2
Large-leaved aster (<i>Aster macrophyllus</i>)	81	••	A	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	79	•	UNK	Perennial	Present	insects	Generalist	3
Wild ginger (<i>Asarum canadense</i>)	71	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Common strawberry (<i>Fragaria virginiana</i>)	69	•	SC	Perennial	Present	insects	Early spring insect	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	65	•	D	Perennial	Absent	insects	Generalist	5
Wood anemone (<i>Anemone quinquefolia</i>)	65	•	UNK	Perennial	Present	insects	Early spring insect	4
Rose twistedstalk (<i>Streptopus roseus</i>)	64	•	UNK	Perennial	Present	insects	Early spring insect	4
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	64	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Maryland black snakeroot (<i>Sanicula marilandica</i>)	64	•	UNK	Perennial	Absent	insects	Generalist	4
Red baneberry (<i>Actaea rubra</i>)	63	•	SC	Perennial	Present	insects	Early spring insect	3
Early meadow-rue (<i>Thalictrum dioicum</i>)	57	•	SI	Perennial	Present	wind	Generalist	0
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	54	•	Varies	Perennial	Present	insects	Varies	Varies
Rattlesnake fern (<i>Botrychium virginianum</i>)	53	•	SC	Perennial	Present	wind, water	Generalist	0
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	50	•	SI	Perennial	Present	insects	Early spring insect	5
Bluebead lily (<i>Clintonia borealis</i>)	49	•	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trientalis borealis</i>)	49	•	SI/sc	Perennial	Present	insects	Generalist	3
Spinulose shield fern or Glandular wood fern (<i>Dryopteris</i> spp.)*	49	•	SC	Perennial	Present	wind, water	Generalist	0
Nodding trillium (<i>Trillium cernuum</i>)	43	•	A	Perennial	Present	insects	Early spring insect	3
Naked miterwort (<i>Mitella nuda</i>)	42	•	UNK	Perennial	Present	insects	Early spring insect	4
Side-flowering aster (<i>Aster lateriflorus</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Woodland horsetail (<i>Equisetum sylvaticum</i>)	35	••	SC	Perennial	Present	wind, water	Generalist	0
Ostrich fern (<i>Matteuccia struthiopteris</i>)	33	•••	SC	Perennial	Present	wind, water	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	29	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Sensitive fern (<i>Onoclea sensibilis</i>)	28	•	SC	Perennial	Present	wind, water	Generalist	0
Palmette sweet coltsfoot (<i>Petasites frigidus</i>)	26	•	D	Perennial	Present	insects	Early spring insect	5
Hooked crowfoot (<i>Ranunculus recurvatus</i>)	24	•	SI	Perennial	Present	insects	Early spring insect	5
Wood nettle (<i>Laportea canadensis</i>)	17	•••	UNK	Perennial	Present	wind	Generalist	0
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	67	•••	SC	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	56	••	SC	Perennial	Present	wind	Generalist	0
Bearded shorthusk (<i>Brachelytrum erectum</i>)	50	•	UNK	Perennial	Present	wind	Generalist	0
Graceful sedge (<i>Carex gracillima</i>)	49	•	UNK	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	47	••	UNK	Perennial	Absent	wind	Generalist	0

Dewey's sedge (<i>Carex deweyana</i>)	36	●	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	36	●	UNK	Perennial	Present	wind	Generalist	0
Pointed woodrush (<i>Luzula acuminata</i>)	36	●	UNK	Perennial	Present	wind	Generalist	0
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	92	●●●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	71	●	SI	Perennial	Present	insects	Early spring insect	5
Mountain maple (<i>Acer spicatum</i>)	67	●●●	SI	Perennial	Absent	insects	Early spring insect	6
Juneberries (<i>Amelanchier</i> spp.)	44	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Swamp red currant (<i>Ribes triste</i>)	42	●	SI	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	36	●	UNK	Perennial	Present	insects	Generalist	3
Highbush cranberry (<i>Viburnum trilobum</i>)	25	●	UNK	Perennial	Present	insects	Generalist	3
Nannyberry (<i>Viburnum lentago</i>)	25	●	SI	Perennial	Present	insects	Generalist	4
American hazelnut (<i>Corylus americana</i>)	24	●●●	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Black ash	65	●●●	D	Perennial	Absent	wind	Generalist	0
Basswood	60	●●●	SI	Perennial	Absent	insects	Generalist	5
Quaking aspen	38	●●●	D	Perennial	Present	wind	Generalist	0
Paper birch	36	●●	Di	Perennial	Present	wind	Generalist	0
Bur oak	35	●●●	SI	Perennial	Present	wind	Generalist	0
Red maple	32	●●●	D	Perennial	Absent	insects	Early spring insect	6
Sugar maple	25	●●●	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	15	●●●	SI	Perennial	Present	wind	Generalist	0
Yellow birch	14	●●	Di	Perennial	Present	wind	Generalist	0
American elm	14	●	Di	Perennial	Absent	wind	Generalist	0
Green ash	14	●●●	D	Perennial	UNK	wind	Generalist	0
White spruce	11	●●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	11	●●●	UNK	Perennial	Absent	wind	Generalist	0
White cedar	8	●●●	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Balsam poplar	-	-	D	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Black ash	58	●●●	D	Perennial	Absent	wind	Generalist	0
Basswood	56	●●	SI	Perennial	Absent	insects	Generalist	5
Quaking aspen	17	●●●	D	Perennial	Present	wind	Generalist	0
Paper birch	21	●●	Di	Perennial	Present	wind	Generalist	0
Bur oak	26	●	SI	Perennial	Present	wind	Generalist	0
Sugar maple	46	●●●	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	15	●	SI	Perennial	Present	wind	Generalist	0
Yellow birch	8	●	Di	Perennial	Present	wind	Generalist	0
American elm	40	●●	Di	Perennial	Absent	wind	Generalist	0

Green ash	22	••	D	Perennial	UNK	wind	Generalist	0
White spruce	13	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	17	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	8	••	D	Perennial	Present	wind	Generalist	0
Balsam poplar	-	-	D	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Black ash	71	••	D	Perennial	Absent	wind	Generalist	0
Basswood	63	•	SI	Perennial	Absent	insects	Generalist	5
Quaking aspen	38	•	D	Perennial	Present	wind	Generalist	0
Paper birch	11	•	Di	Perennial	Present	wind	Generalist	0
Bur oak	43	•	SI	Perennial	Present	wind	Generalist	0
Red maple	60	•	D	Perennial	Absent	insects	Early spring insect	6
Sugar maple	53	•••	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	46	•	SI	Perennial	Present	wind	Generalist	0
Yellow birch	-	-	Di	Perennial	Present	wind	Generalist	0
American elm	44	•	Di	Perennial	Absent	wind	Generalist	0
Green ash	31	••	D	Perennial	UNK	wind	Generalist	0
White spruce	14	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	35	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0
Balsam poplar	8	•	D	Perennial	Present	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

MHn47 Northern Rich Mesic Hardwood Forest

Pollinator Resources

Mesic hardwood forests on well-drained to somewhat poorly drained, rich loamy soils on glacial drift and till in areas of undulating to hummocky topography.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHn47 include:

Bees:

Andrena melanochroa (Rosaceae)
Andrena persimulata (Cornus [Swida])
Colletes simulans (Solidago)



Butterflies:

Euphyes dion (Carex)
Oeneis macounii (Oryzopsis asperifolia)
Polygonia progne (Ribes)
Argynnis atlantis (Viola)

Moths:

Lithophane innominata (Acer saccharum)
Dichomeris bilobella (Solidago flexicaulis)
Choristoneura fumiferana (Abies balsamea)

Colletes simulans (spine-shouldered cellophane bee) uses *Solidago* (goldenrod) species as a host plant.
Photo: Heather Holm

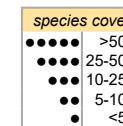


Oeneis macounii (Canada Arctic) uses *Oryzopsis asperifolia* (roughleaf ricegrass) as a host plant. Photo: Kyle Johnson

MHn47 Northern Rich Mesic Hardwood Forest

Pollinator Resources Table

MHn47 Class Factsheet. Based on 112 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Lady fern (<i>Athyrium filix-femina</i>)	91	●	SC	Perennial	Present	wind, water	Generalist	0
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	84	●	D	Perennial	Absent	insects	Generalist	5
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	79	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	78	●●	D	Perennial	Present	insects	Generalist	4
Rose twistedstalk (<i>Streptopus roseus</i>)	78	●	UNK	Perennial	Present	insects	Early spring insect	4
Canada mayflower (<i>Maianthemum canadense</i>)	74	●	SI	Perennial	Present	insects	Early spring insect	5
Rattlesnake fern (<i>Botrychium virginianum</i>)	74	●	SC	Perennial	Present	wind, water	Generalist	0
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	73	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	70	●●	SI	Perennial	Present	insects	Early spring insect	5
Large-leaved aster (<i>Aster macrophyllus</i>)	69	●	A	Perennial	Present	insects	Generalist	2
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	67	●	Varies	Perennial	Present	insects	Varies	Varies
Wood anemone (<i>Anemone quinquefolia</i>)	65	●	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	61	●	UNK	Perennial	Present	insects	Generalist	3
American spikenard (<i>Aralia racemosa</i>)	60	●	UNK	Perennial	Present	insects	Generalist	3
Bluebead lily (<i>Clintonia borealis</i>)	56	●	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trientalis borealis</i>)	54	●	SI/sc	Perennial	Present	insects	Generalist	3
Wild ginger (<i>Asarum canadense</i>)	53	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Spinulose shield fern or Glandular wood fern*	51	●	SC	Perennial	Present	wind, water	Generalist	0
Red baneberry (<i>Actaea rubra</i>)	48	●	SC	Perennial	Present	insects	Early spring insect	3
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	44	●	SI	Perennial	Present	insects	Generalist	4
Blue cohosh (<i>Caulophyllum thalictroides</i>)	44	●	SC/SI	Perennial	Present	insects	Early spring insect	4
Common oak fern (<i>Gymnocarpium dryopteris</i>)	43	●	SC	Perennial	Present	wind, water	Generalist	0
Round-lobed hepatica (<i>Anemone americana</i>)	43	●	SC	Perennial	Present	insects	Early spring insect	3
Dwarf raspberry (<i>Rubus pubescens</i>)	40	●	SC	Perennial	Present	insects	Generalist	2
Nodding trillium (<i>Trillium cernuum</i>)	39	●	A	Perennial	Present	insects	Early spring insect	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	38	●	UNK	Perennial	Present	insects	Early spring insect	4
Groundpine (<i>Lycopodium dendroideum</i> or <i>L. hickeyi</i>)	31	●	SC	Perennial	Present	wind, water	Generalist	0
Pale bellwort (<i>Uvularia sessilifolia</i>)	30	●	SI	Perennial	Present	insects	Early spring insect	5
Bloodroot (<i>Sanguinaria canadensis</i>)	29	●	SC	Perennial	Present	insects	Early spring insect	3
Early meadow-rue (<i>Thalictrum dioicum</i>)	27	●	SI	Perennial	Present	wind	Generalist	0
Alpine enchanter's nightshade (<i>Circaeа alpina</i>)	26	●	SC	Perennial	Present	insects	Generalist	2
Ostrich fern (<i>Matteuccia struthiopteris</i>)	24	●	SC	Perennial	Present	wind, water	Generalist	0
Wild leek (<i>Allium tricoccum</i>)	23	●	SC	Perennial	Present	insects	Generalist	2
Maryland black snakeroot (<i>Sanicula marilandica</i>)	23	●	UNK	Perennial	Absent	insects	Generalist	4
Meadow horsetail (<i>Equisetum pratense</i>)	21	●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	76	●●●	SC	Perennial	Present	wind	Generalist	0

Mountain rice grass (<i>Oryzopsis asperifolia</i>)	74	●	UNK	Perennial	Absent	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	64	●●	SC	Perennial	Present	wind	Generalist	0
Dewey's sedge (<i>Carex deweyana</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0
Drooping wood sedge (<i>Carex arctata</i>)	32	●	SC	Perennial	Present	wind	Generalist	0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	27	●	UNK	Perennial	Present	wind	Generalist	0
Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	69	●●	Di	Perennial	Present	wind	Generalist	0
Fly honeysuckle (<i>Lonicera canadensis</i>)	69	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Chokecherry (<i>Prunus virginiana</i>)	67	●	SI	Perennial	Present	insects	Early spring insect	5
Mountain maple (<i>Acer spicatum</i>)	63	●●	SI	Perennial	Absent	insects	Early spring insect	6
Prickly gooseberry (<i>Ribes cynosbati</i>)	51	●	SI	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	49	●	UNK	Perennial	Present	insects	Generalist	3
Leatherwood (<i>Dirca palustris</i>)	42	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Swamp red currant (<i>Ribes triste</i>)	21	●	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Sugar maple	98	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Basswood	93	●●●	SI	Perennial	Absent	insects	Generalist	5
Yellow birch	43	●●●	Di	Perennial	Present	wind	Generalist	0
Paper birch	24	●●	Di	Perennial	Present	wind	Generalist	0
Northern red oak	19	●●	SI	Perennial	Present	wind	Generalist	0
Black ash	19	●●	D	Perennial	Absent	wind	Generalist	0
Ironwood	18	●●	UNK	Perennial	Present	wind	Generalist	0
White cedar	10	●●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	9	●●	D	Perennial	Absent	insects	Early spring insect	6
Green ash	9	●●	D	Perennial	UNK	wind	Generalist	0
Balsam fir	6	●	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	5	●●	D	Perennial	Present	wind	Generalist	0
White pine	4	●●●	SI	Perennial	Absent	wind	Generalist	0
American elm	4	●	Di	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Sugar maple	96	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Basswood	54	●●	SI	Perennial	Absent	insects	Generalist	5
Yellow birch	15	●●	Di	Perennial	Present	wind	Generalist	0
Paper birch	6	●	Di	Perennial	Present	wind	Generalist	0
Northern red oak	8	●	SI	Perennial	Present	wind	Generalist	0
Black ash	12	●	D	Perennial	Absent	wind	Generalist	0
Ironwood	54	●●●	UNK	Perennial	Present	wind	Generalist	0
White cedar	4	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	11	●	D	Perennial	Absent	insects	Early spring insect	6
Green ash	4	●	D	Perennial	UNK	wind	Generalist	0

Balsam fir	10	•	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	-	-	D	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
American elm	9	••	Di	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Sugar maple	97	••••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	78	•	SI	Perennial	Absent	insects	Generalist	5
Yellow birch	13	•	Di	Perennial	Present	wind	Generalist	0
Paper birch	3	•	Di	Perennial	Present	wind	Generalist	0
Northern red oak	48	•	SI	Perennial	Present	wind	Generalist	0
Black ash	41	•	D	Perennial	Absent	wind	Generalist	0
Ironwood	67	••	UNK	Perennial	Present	wind	Generalist	0
White cedar	-	-	UNK	Perennial	Absent	wind	Generalist	0
Red maple	19	•	D	Perennial	Absent	insects	Early spring insect	6
Green ash	13	•	D	Perennial	UNK	wind	Generalist	0
Balsam fir	47	•	UNK	Perennial	Absent	wind	Generalist	0
Quaking aspen	16	•	D	Perennial	Present	wind	Generalist	0
White pine	4	•	SI	Perennial	Absent	wind	Generalist	0
American elm	38	••	Di	Perennial	Absent	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

MHs37 Southern Dry-Mesic Oak Forest

Pollinator Resources

Dry-mesic hardwood forests occurring most often on thin, wind-deposited silt on crests and upper slopes of bedrock bluffs and less often on hummocky stagnation moraines in calcareous, partially sorted drift.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHs37 include:

Bees:

Andrena uvulariae (*Uvularia*)
Andrena distans (*Geranium maculatum*)
Andrena platyparia (*Cornus (Swida)*)
Andrena wilkella (*Fabaceae*)

Butterflies:

Erynnis juvenalis (*Quercus*)
Satyrium titus (*Prunus*)
Satyrium caryaevorus (*Carya cordiformis*)

Moths:

Parectopa geraniella (*Geranium maculatum*)
Macrosaccus morrisella (*Amphicarpaea bracteata*)
Caloptilia negundella (*Acer negundo*)



Andrena wilkella (Wilke's mining bee) uses species in the Fabaceae (legume) family as a host plant.

Photo: Michael Veit

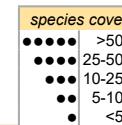


Oeneis macounii (Canada Arctic) uses *Oryzopsis asperifolia* (roughleaf ricegrass) as a host plant. Photo: Kyle Johnson

MHs37 Southern Dry-Mesic Oak Forest

Pollinator Resources Table

[MHs37 Class Factsheet](#). Based on 43 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Lady fern (<i>Athyrium filix-femina</i>)	91	••	SC	Perennial	Present	wind, water	Generalist	0
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	88	••	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	86	•	D	Perennial	Absent	insects	Generalist	5
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	81	•	SC	Perennial	Present	insects	Generalist	2
Wild geranium (<i>Geranium maculatum</i>)	79	•	SC	Perennial	Present	insects	Early spring insect	3
Honewort (<i>Cryptotaenia canadensis</i>)	72	•	SC	Perennial	Present	insects	Generalist	2
White avens (<i>Geum canadense</i>)	72	•	UNK	Perennial	Present	insects	Generalist	3
Lopseed (<i>Phryma leptostachya</i>)	72	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Hog peanut (<i>Amphicarpaea bracteata</i>)	70	••	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
White snakeroot (<i>Eupatorium rugosum</i>)	65	•	UNK	Perennial	Present	insects	Generalist	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	65	•	UNK	Perennial	Present	insects	Early spring insect	4
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	63	•	SI	Perennial	Present	insects	Early spring insect	5
Gregarious black snakeroot (<i>Sanicula gregaria</i>)	58	•	UNK	Perennial	Absent	insects	Generalist	4
Maidenhair fern (<i>Adiantum pedatum</i>)	56	•	SC	Perennial	Present	wind, water	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	56	•	D	Perennial	Present	insects	Generalist	4
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	56	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	53	•	UNK	Perennial	Present	insects	Generalist	3
Rattlesnake fern (<i>Botrychium virginianum</i>)	51	•	SC	Perennial	Present	wind, water	Generalist	0
Spreading Jacob's ladder (<i>Polemonium reptans</i>)	47	•	UNK	Perennial	Present	insects	Early spring insect	4
Blue cohosh (<i>Caulophyllum thalictroides</i>)	47	•	SC/SI	Perennial	Present	insects	Early spring insect	4
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	44	•	D	Perennial	Present	insects	Somewhat specific insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	42	•	UNK	Perennial	Present	insects	Early spring insect	4
Red baneberry (<i>Actaea rubra</i>)	42	•	SC	Perennial	Present	insects	Early spring insect	3
Bracken (<i>Pteridium aquilinum</i>)	40	•	SC	Perennial	Present	wind, water	Generalist	0
Cleavers (<i>Galium aparine</i>)	40	•	SC	Annual	Absent	insects	Early spring insect	5
Bloodroot (<i>Sanguinaria canadensis</i>)	40	•	SC	Perennial	Present	insects	Early spring insect	3
Early meadow-rue (<i>Thalictrum dioicum</i>)	35	•	SI	Perennial	Present	wind	Generalist	0
Maryland black snakeroot (<i>Sanicula marilandica</i>)	35	•	UNK	Perennial	Absent	insects	Generalist	4
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Clearweed (<i>Pilea spp.</i>)	28	•	sometimes D	Annual	Absent	wind	Generalist	0
Grasses and Sedges								
Starry sedge (<i>Carex rosea</i>)	37	•	UNK	Perennial	Present	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	35	•	SC	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	23	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus spp.</i>)	86	••	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	79	•	D	Perennial	Present	insects	Generalist	4

Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	42	•	SC	Perennial	Present	insects	Generalist	2
Black raspberry (<i>Rubus occidentalis</i>)	30	•	SC	Perennial	Present	insects	Generalist	2
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	28	••	Varies	Perennial	Present	insects	Generalist	Varies
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	79	••	SI	Perennial	Present	insects	Early spring insect	5
American hazelnut (<i>Corylus americana</i>)	72	••	Di	Perennial	Present	wind	Generalist	0
Missouri gooseberry (<i>Ribes missouriense</i>)	63	••	SI	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	63	•	D	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	58	••	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	51	•••	SI	Perennial	Present	insects	Generalist	4
Gray dogwood (<i>Cornus racemosa</i>)	42	•	UNK	Perennial	Present	insects	Generalist	3
Round-leaved dogwood (<i>Cornus rugosa</i>)	30	••	UNK	Perennial	Present	insects	Generalist	3
Nannyberry (<i>Viburnum lentago</i>)	26	•	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Northern red oak	91	••••	SI	Perennial	Present	wind	Generalist	0
White oak	67	••••	SI	Perennial	Present	wind	Generalist	0
Basswood	51	••	SI	Perennial	Absent	insects	Generalist	5
American elm	40	•••	Di	Perennial	Absent	wind	Generalist	0
Sugar maple	35	••	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	33	•	SI	Perennial	Present	insects	Early spring insect	5
Ironwood	30	••	UNK	Perennial	Present	wind	Generalist	0
Bur oak	30	•••	SI	Perennial	Present	wind	Generalist	0
Red elm	30	•••	Di	Perennial	Absent	wind	Generalist	0
Shagbark hickory	28	•	SC/si	Perennial	Present	wind	Generalist	0
Northern pin oak	23	••••	SI	Perennial	Present	wind	Generalist	0
Hackberry	23	•	SC	Perennial	Absent	wind	Generalist	0
Paper birch	21	••	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	19	•	UNK	Perennial	Present	wind	Generalist	0
Box elder	14	•	D	Perennial	Absent	insects	Early spring insect	6
Tree Subcanopy								
Northern red oak	35	•	SI	Perennial	Present	wind	Generalist	0
White oak	30	••	SI	Perennial	Present	wind	Generalist	0
Basswood	74	••	SI	Perennial	Absent	insects	Generalist	5
American elm	51	•••	Di	Perennial	Absent	wind	Generalist	0
Sugar maple	49	•	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	67	•	SI	Perennial	Present	insects	Early spring insect	5
Ironwood	56	••	UNK	Perennial	Present	wind	Generalist	0
Bur oak	12	•	SI	Perennial	Present	wind	Generalist	0
Red elm	51	•••	Di	Perennial	Absent	wind	Generalist	0

Shagbark hickory	30	••	SC/si	Perennial	Present	wind	Generalist	0
Northern pin oak	-	-	SI	Perennial	Present	wind	Generalist	0
Hackberry	47	•	SC	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	37	•••	UNK	Perennial	Present	wind	Generalist	0
Box elder	56	••	D	Perennial	Absent	insects	Early spring insect	6
Tree Shrub Layer								
Northern red oak	72	•	SI	Perennial	Present	wind	Generalist	0
White oak	28	•	SI	Perennial	Present	wind	Generalist	0
Basswood	60	•	SI	Perennial	Absent	insects	Generalist	5
American elm	40	•	Di	Perennial	Absent	wind	Generalist	0
Sugar maple	28	•	D	Perennial	Absent	insects	Early spring insect	6
Black cherry	70	•	SI	Perennial	Present	insects	Early spring insect	5
Ironwood	35	•	UNK	Perennial	Present	wind	Generalist	0
Bur oak	12	•	SI	Perennial	Present	wind	Generalist	0
Red elm	51	••	Di	Perennial	Absent	wind	Generalist	0
Shagbark hickory	28	•	SC/si	Perennial	Present	wind	Generalist	0
Northern pin oak	-	-	SI	Perennial	Present	wind	Generalist	0
Hackberry	37	•	SC	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	56	•	UNK	Perennial	Present	wind	Generalist	0
Box elder	67	•	D	Perennial	Absent	insects	Early spring insect	6

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHs38 Southern Mesic Oak-Basswood Forest

Pollinator Resources

Mesic hardwood or, occasionally, hardwood-conifer forests. Present on wind-deposited silt on bedrock bluffs, on calcareous till on rolling till plains, and, rarely, in association with natural fire breaks in prairie landscapes or on weakly calcareous till on stagnation moraines.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHs38 include:

Bees:

- Hylaeus sparsus* (Apiaceae)
- Andrena uvulariae* (*Uvularia*)
- Andrena chromotricha* (*Solidago*)
- Andrena geranii* (*Hydrophyllum virginianum*)

Butterflies:

- Papilio cresphontes* (*Zanthoxylum americanum*)
- Euphyes conspicua* (*Carex*)
- Argynnis cybele* (*Viola*)

Moths:

- Phyllonorycter lucetiella* (*Tilia americana*)
- Gnorimoschema gallaeasterella* (*Solidago flexicaulis*)
- Agonopterix paulae* (*Zanthoxylum americanum*)



Andrena geranii (waterleaf mining bee) uses *Hydrophyllum virginianum* (Virginia waterleaf) as a host plant. Photo: Heather Holm

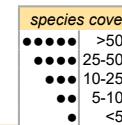


Euphyes conspicua (black dash skipper) uses *Carex* (sedge) species as a host plant. Photo: Bob Dunlap

MHs38 Southern Mesic Oak-Basswood Forest

Pollinator Resources Table

[MHs38 Class Factsheet](#). Based on 128 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	84	••	SI	Perennial	Present	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	81	•	D	Perennial	Absent	insects	Generalist	5
Bloodroot (<i>Sanguinaria canadensis</i>)	77	•	SC	Perennial	Present	insects	Early spring insect	3
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	73	••	SI	Perennial	Present	insects	Early spring insect	5
Lopseed (<i>Phryma leptostachya</i>)	65	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	64	•	SC	Perennial	Present	insects	Generalist	2
Early meadow-rue (<i>Thalictrum dioicum</i>)	63	•	SI	Perennial	Present	wind	Generalist	0
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	63	•••	SC	Perennial	Present	insects	Somewhat specific insect	3
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	56	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	55	•	D	Perennial	Present	insects	Somewhat specific insect	5
Wild geranium (<i>Geranium maculatum</i>)	55	•	SC	Perennial	Present	insects	Early spring insect	3
Honewort (<i>Cryptotaenia canadensis</i>)	54	•	SC	Perennial	Present	insects	Generalist	2
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	54	•	D	Perennial	Present	insects	Generalist	4
Blue cohosh (<i>Caulophyllum thalictroides</i>)	53	•	SC/SI	Perennial	Present	insects	Early spring insect	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	50	•	SC	Perennial	Present	wind, water	Generalist	0
Lady fern (<i>Athyrium filix-femina</i>)	50	•	SC	Perennial	Present	wind, water	Generalist	0
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	50	•	Varies	Perennial	Present	insects	Varies	Varies
Common false Solomon's seal (<i>Smilacina racemosa</i>)	48	•	UNK	Perennial	Present	insects	Early spring insect	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	48	•	UNK	Perennial	Absent	insects	Generalist	4
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	47	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Red baneberry (<i>Actaea rubra</i>)	46	•	SC	Perennial	Present	insects	Early spring insect	3
Maidenhair fern (<i>Adiantum pedatum</i>)	44	•	SC	Perennial	Present	wind, water	Generalist	0
Hog peanut (<i>Amphicarpea bracteata</i>)	44	•	CH and CL	Annual	Present	insects	Somewhat specific insect	6
Wild ginger (<i>Asarum canadense</i>)	43	••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	41	•	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	41	•	UNK	Perennial	Present	insects	Generalist	3
Sharp-lobed hepatica (<i>Anemone acutiloba</i>)	38	•	SC	Perennial	Present	insects	Early spring insect	3
White avens (<i>Geum canadense</i>)	37	•	UNK	Perennial	Present	insects	Generalist	3
Canada mayflower (<i>Maianthemum canadense</i>)	37	•	SI	Perennial	Present	insects	Early spring insect	5
Cleavers (<i>Galium aparine</i>)	34	•	SC	Annual	Absent	insects	Early spring insect	5
Shining bedstraw (<i>Galium concinnum</i>)	31	•	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	57	•••	SC	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i>)	41	•	UNK	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	31	•	UNK	Perennial	Present	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	28	•	UNK	Perennial	Absent	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	27	••	SC	Perennial	Present	wind	Generalist	0

Nodding fescue (<i>Festuca subverticillata</i>)	20	•	UNK	Perennial	Absent	wind	Generalist	0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	19	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus spp.</i>)	80	•	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	39	•	D	Perennial	Present	insects	Generalist	4
Shrubs								
Prickly gooseberry (<i>Ribes cynosbati</i>)	71	•	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	64	•	SI	Perennial	Present	insects	Early spring insect	5
Prickly ash (<i>Zanthoxylum americanum</i>)	57	••	D	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	57	•	D	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	53	•	UNK	Perennial	Present	insects	Generalist	3
Missouri gooseberry (<i>Ribes missouriense</i>)	30	••	SI	Perennial	Present	insects	Generalist	4
Nannyberry (<i>Viburnum lentago</i>)	23	•	SI	Perennial	Present	insects	Generalist	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	22	•	UNK	Perennial	Present	insects	Generalist	3
American hazelnut (<i>Corylus americana</i>)	21	••	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Basswood	82	••	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	60	•	SI	Perennial	Present	wind	Generalist	0
Sugar maple	59	•••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	42	•••	UNK	Perennial	Present	wind	Generalist	0
Green ash	36	•	D	Perennial	UNK	wind	Generalist	0
Bur oak	33	-	SI	Perennial	Present	wind	Generalist	0
White oak	30	-	SI	Perennial	Present	wind	Generalist	0
American elm	27	••	Di	Perennial	Absent	wind	Generalist	0
Paper birch	20	-	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	18	••	UNK	Perennial	Present	wind	Generalist	0
Red elm	16	•	Di	Perennial	Absent	wind	Generalist	0
White pine	12	-	SI	Perennial	Absent	wind	Generalist	0
Black cherry	9	•	SI	Perennial	Present	insects	Early spring insect	5
Blue beech	-	•••	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Basswood	52	••	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	11	•	SI	Perennial	Present	wind	Generalist	0
Sugar maple	60	•••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	84	•••	UNK	Perennial	Present	wind	Generalist	0
Green ash	16	•	D	Perennial	UNK	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
White oak	-	-	SI	Perennial	Present	wind	Generalist	0
American elm	21	••	Di	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0

Bitternut hickory	26	••	UNK	Perennial	Present	wind	Generalist	0
Red elm	19	•	Di	Perennial	Absent	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Black cherry	9	•	SI	Perennial	Present	insects	Early spring insect	5
Blue beech	20	•••	UNK	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Basswood	73	•	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	52	•	SI	Perennial	Present	wind	Generalist	0
Sugar maple	65	•••	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	70	••	UNK	Perennial	Present	wind	Generalist	0
Green ash	38	•	D	Perennial	UNK	wind	Generalist	0
Bur oak	18	•	SI	Perennial	Present	wind	Generalist	0
White oak	9	•	SI	Perennial	Present	wind	Generalist	0
American elm	32	•	Di	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	46	•	UNK	Perennial	Present	wind	Generalist	0
Red elm	34	•	Di	Perennial	Absent	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Black cherry	34	•	SI	Perennial	Present	insects	Early spring insect	5
Blue beech	19	•	UNK	Perennial	Present	wind	Generalist	0

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHs39 Southern Mesic Maple-Basswood Forest

Pollinator Resources

Rich mesic hardwood forests on loamy soils derived from calcareous till or wind-deposited silt over bedrock. Present on sites that have been historically protected from fires on hummocky stagnation moraines, on till plains along rivers, and on middle or lower slopes of bedrock bluffs.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHs39 include:

Bees:

Andrena uvulariae (*Uvularia*)
Andrena geranii (*Hydrophyllum virginianum*)
Lasioglossum lusorium (Onagraceae)



Butterflies:

Satyrium titus (*Prunus*)
Papilio cresphontes (*Zanthoxylum americanum*)
Satyrium caryaevorus (*Carya cordiformis*)

Moths:

Lithophane innominata (*Acer saccharum*)
Phyllonorycter lucetiella (*Tilia americana*)
Cucullia convexipennis (*Solidago flexicaulis*)

Andrena geranii (waterleaf mining bee) uses *Hydrophyllum virginianum* (Virginia waterleaf) as a host plant. Photo: Heather Holm

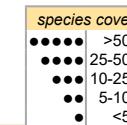


Satyrium caryaevorus (hickory hairstreak) uses *Carya cordiformis* (bitternut hickory) as a host plant.
Photo: Bob Dunlap

MHs39 Southern Mesic Maple-Basswood Forest

Pollinator Resources Table

[MHs39 Class Factsheet](#). Based on 110 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	85	●●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Bloodroot (<i>Sanguinaria canadensis</i>)	85	●	SC	Perennial	Present	insects	Early spring insect	3
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	77	●	Varies	Perennial	Present	insects	Varies	Varies
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	75	●	SI	Perennial	Present	insects	Early spring insect	5
Wild leek (<i>Allium tricoccum</i>)	74	●	SC	Perennial	Present	insects	Generalist	2
Blue cohosh (<i>Caulophyllum thalictroides</i>)	72	●	SC/SI	Perennial	Present	insects	Early spring insect	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	67	●	SI	Perennial	Present	wind	Generalist	0
Cleavers (<i>Galium aparine</i>)	66	●	SC	Annual	Absent	insects	Early spring insect	5
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	66	●	D	Perennial	Absent	insects	Generalist	5
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	60	●	SI	Perennial	Present	insects	Generalist	4
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	60	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Wood nettle (<i>Laportea canadensis</i>)	59	●●●	UNK	Perennial	Present	wind	Generalist	0
Lady fern (<i>Athyrium filix-femina</i>)	55	●	SC	Perennial	Present	wind, water	Generalist	0
Common false Solomon's seal (<i>Smilacina racemosa</i>)	53	●	UNK	Perennial	Present	insects	Early spring insect	4
Wild ginger (<i>Asarum canadense</i>)	52	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Common enchanter's nightshade (<i>Circaeaa lutetiana</i>)	49	●	SC	Perennial	Present	insects	Generalist	2
Sharp-lobed hepatica (<i>Anemone acutiloba</i>)	47	●	SC	Perennial	Present	insects	Early spring insect	3
Maidenhair fern (<i>Adiantum pedatum</i>)	45	●	SC	Perennial	Present	wind, water	Generalist	0
Wood anemone (<i>Anemone quinquefolia</i>)	45	●	UNK	Perennial	Present	insects	Early spring insect	4
Erect, Smooth, or Illinois carion-flower (<i>Smilax</i> spp.)*	44	●	D	Perennial	Present	insects	Somewhat specific insect	5
Dutchman's breeches (<i>Dicentra cucullaria</i>)	44	●	SI/sc	Perennial	Present	insects	Early spring insect, Somewhat specific insect	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	41	●	SC	Perennial	Present	wind, water	Generalist	0
White avens (<i>Geum canadense</i>)	41	●	UNK	Perennial	Present	insects	Generalist	3
Kidney-leaved buttercup (<i>Ranunculus abortivus</i>)	40	●	SI	Perennial	Present	insects	Early spring insect	5
Honewort (<i>Cryptotaenia canadensis</i>)	40	●	SC	Perennial	Present	insects	Generalist	2
Stemless blue violets (<i>Viola</i> spp.)*	38	●	Varies	Perennial	Present	insects	Varies	Varies
Blue phlox (<i>Phlox divaricata</i>)	36	●	SI	Perennial	Weakly	insects	Early spring insect, Somewhat specific insect	5
Cut-leaved toothwort (<i>Cardamine concatenata</i>)	36	●●	UNK	Perennial	Present	insects	Early spring insect	4
Wild geranium (<i>Geranium maculatum</i>)	35	●	SC	Perennial	Present	insects	Early spring insect	3
White trout lily (<i>Erythronium albidum</i>)	30	●●●	SC	Perennial	Present	insects	Early spring insect	3
Red baneberry (<i>Actaea rubra</i>)	30	●	SC	Perennial	Present	insects	Early spring insect	3
Lopseed (<i>Phryma leptostachya</i>)	29	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Touch-me-not (<i>Impatiens</i> spp.)	28	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Drooping trillium (<i>Trillium flexipes</i>)	27	●	A	Perennial	Present	insects	Early spring insect	3
Sweet-scented bedstraw (<i>Galium triflorum</i>)	26	●	UNK	Perennial	Present	insects	Generalist	3
Two-leaved miterwort (<i>Mitella diphylla</i>)	25	●	UNK	Perennial	Present	insects	Early spring insect	4
False rue anemone (<i>Enemion biternatum</i>)	25	●●	SC	Perennial	Weakly	insects	Early spring insect	3

Nodding trillium (<i>Trillium cernuum</i>)	25	●	A	Perennial	Present	insects	Early spring insect	3
Gregarious black snakeroot (<i>Sanicula gregaria</i>)	22	●	UNK	Perennial	Absent	insects	Generalist	4
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	22	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	34	●	SC	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i>)	27	●	UNK	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	27	●	SC	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	26	●	UNK	Perennial	Present	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	25	●	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	50	●	SC	Perennial	Present	insects	Generalist	2
Canada moonseed (<i>Menispermum canadense</i>)	25	●	D	Perennial	Present	insects	Generalist	4
Shrubs								
Prickly gooseberry (<i>Ribes cynosbati</i>)	81	●	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	58	●	SI	Perennial	Present	insects	Early spring insect	5
Pagoda dogwood (<i>Cornus alternifolia</i>)	45	●	UNK	Perennial	Present	insects	Generalist	3
Prickly ash (<i>Zanthoxylum americanum</i>)	31	●	D	Perennial	Present	insects	Generalist	4
Missouri gooseberry (<i>Ribes missouriense</i>)	28	●●	SI	Perennial	Present	insects	Generalist	4
Red-berried elder (<i>Sambucus racemosa</i>)	27	●	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Sugar maple	91	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Basswood	90	●●●	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	55	●●●	SI	Perennial	Present	wind	Generalist	0
Red elm	35	●●●	Di	Perennial	Absent	wind	Generalist	0
American elm	35	●●	Di	Perennial	Absent	wind	Generalist	0
Ironwood	35	●	UNK	Perennial	Present	wind	Generalist	0
Bitternut hickory	25	●●	UNK	Perennial	Present	wind	Generalist	0
Black ash	25	●	D	Perennial	Absent	wind	Generalist	0
Green ash	16	●●	D	Perennial	UNK	wind	Generalist	0
Blue beech	-	-	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Sugar maple	87	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Basswood	46	●	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Red elm	20	●●	Di	Perennial	Absent	wind	Generalist	0
American elm	18	●	Di	Perennial	Absent	wind	Generalist	0
Ironwood	67	●●●	UNK	Perennial	Present	wind	Generalist	0
Bitternut hickory	31	●●	UNK	Perennial	Present	wind	Generalist	0
Black ash	12	●	D	Perennial	Absent	wind	Generalist	0
Green ash	-	-	D	Perennial	UNK	wind	Generalist	0
Blue beech	15	●●●	UNK	Perennial	Present	wind	Generalist	0

Tree Shrub Layer								
Sugar maple	88	•••	D	Perennial	Absent	insects	Early spring insect	6
Basswood	57	•	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	37	•	SI	Perennial	Present	wind	Generalist	0
Red elm	33	••	Di	Perennial	Absent	wind	Generalist	0
American elm	22	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	39	•	UNK	Perennial	Present	wind	Generalist	0
Bitternut hickory	75	•	UNK	Perennial	Present	wind	Generalist	0
Black ash	18	•	D	Perennial	Absent	wind	Generalist	0
Green ash	28	•	D	Perennial	UNK	wind	Generalist	0
Blue beech	15	••	UNK	Perennial	Present	wind	Generalist	0

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*); Stemless blue violets (*Viola sororia*, *V. nephrophylla*, and similar *Viola* spp.)

MHs49 Southern Wet-Mesic Hardwood Forest

Pollinator Resources

Rich, wet-mesic lowland hardwood forests on level silty alluvium in stream valleys and on level glacial till bordering lakes. Sites are protected from fire, and soils remain moist throughout the growing season.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHs49 include:

Bees:

- Andrena melanochroa* (Rosaceae)
- Andrena geranii* (*Hydrophyllum virginianum*)
- Andrena distans* (*Geranium maculatum*)
- Andrena erythronii* (*Erythronium albidum*)

Butterflies:

- Aglais milberti* (*Urtica dioica*)
- Argynnis cybele* (*Viola*)
- Asterocampa celtis* (*Celtis occidentalis*)

Moths:

- Sphinx canadensis* (*Fraxinus nigra*)
- Parectopa geraniella* (*Geranium maculatum*)
- Agonopterix nigrinotella* (*Zanthoxylum americanum*)



Andrena distans uses *Geranium maculatum* (wild geranium) as a host plant. Photo: Heather Holm

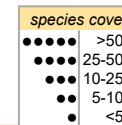


Asterocampa celtis (hackberry emperor) uses *Celtis occidentalis* (hackberry) as a host plant. Photo: Bob Dunlap

MHs49 Southern Wet-Mesic Hardwood Forest

Pollinator Resources Table

[MHs49 Class Factsheet](#). Based on 39 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	90	•••	SC	Perennial	Present	insects	Somewhat specific insect	3
Cleavers (<i>Galium aparine</i>)	85	•••	SC	Annual	Absent	insects	Early spring insect	5
Wood nettle (<i>Laportea canadensis</i>)	82	•••	UNK	Perennial	Present	wind	Generalist	0
Blue phlox (<i>Phlox divaricata</i>)	69	•	SI	Perennial	Weakly	insects	Early spring insect, Somewhat specific insect	5
Blue cohosh (<i>Caulophyllum thalictroides</i>)	64	•	SC/SI	Perennial	Present	insects	Early spring insect	4
White avens (<i>Geum canadense</i>)	64	•	UNK	Perennial	Present	insects	Generalist	3
Wild geranium (<i>Geranium maculatum</i>)	64	••	SC	Perennial	Present	insects	Early spring insect	3
False rue anemone (<i>Enemion biternatum</i>)	59	•••	SC	Perennial	Weakly	insects	Early spring insect	3
Wild ginger (<i>Asarum canadense</i>)	56	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Wild leek (<i>Allium tricoccum</i>)	56	••	SC	Perennial	Present	insects	Generalist	2
Stemless blue violets (<i>Viola spp.</i>)*	56	•	Varies	Perennial	Present	insects	Varies	Varies
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	54	••	D	Perennial	Absent	insects	Generalist	5
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	51	•	Varies	Perennial	Present	insects	Varies	Varies
Honewort (<i>Cryptotaenia canadensis</i>)	49	••	SC	Perennial	Present	insects	Generalist	2
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	49	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Dutchman's breeches (<i>Dicentra cucullaria</i>)	46	•	SI/sc	Perennial	Present	insects	Early spring insect, Somewhat specific insect	4
Bloodroot (<i>Sanguinaria canadensis</i>)	46	•	SC	Perennial	Present	insects	Early spring insect	3
Stinging nettle (<i>Urtica dioica</i>)	46	•	D	Perennial	Present	wind	Generalist	0
Common false Solomon's seal (<i>Smilacina racemosa</i>)	46	•	UNK	Perennial	Present	insects	Early spring insect	4
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	46	•	SI	Perennial	Present	insects	Generalist	4
White trout lily (<i>Erythronium albidum</i>)	44	••	SC	Perennial	Present	insects	Early spring insect	3
Anisroot (<i>Osmorhiza longistylis</i>)	44	••	D	Perennial	Absent	insects	Generalist	5
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	41	•	D	Perennial	Present	insects	Somewhat specific insect	5
Hispid buttercup (<i>Ranunculus hispida</i>)	41	••	SI	Perennial	Present	insects	Early spring insect	5
Tall coneflower (<i>Rudbeckia laciniata</i>)	38	•	SC	Perennial	Present	insects	Generalist	2
Virginia spring beauty (<i>Claytonia virginica</i>)	38	•	SC	Perennial	Present	insects	Early spring insect	3
Sharp-lobed hepatica (<i>Anemone acutiloba</i>)	36	•	SC	Perennial	Present	insects	Early spring insect	3
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	36	•	SI	Perennial	Present	insects	Early spring insect	5
Touch-me-not (<i>Impatiens spp.</i>)	33	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Mayapple (<i>Podophyllum peltatum</i>)	31	•	SI/sc	Perennial	Present	insects	Somewhat specific insect	4
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	31	•	SC	Perennial	Present	insects	Generalist	2
Cut-leaved toothwort (<i>Cardamine concatenata</i>)	26	•	UNK	Perennial	Present	insects	Early spring insect	4
Drooping trillium (<i>Trillium flexipes</i>)	26	•	A	Perennial	Present	insects	Early spring insect	3
Appendaged waterleaf (<i>Hydrophyllum appendiculatum</i>)	21	••	SC	Biennial	Absent	insects	Early spring insect, Somewhat specific insect	5
Grasses and Sedges								
Bottlebrush grass (<i>Elymus hystrix</i>)	38	••	UNK	Perennial	Absent	wind	Generalist	0
Hairy-leaved sedge (<i>Carex hirtifolia</i>)	36	•	SC	Perennial	Present	wind	Generalist	0

Grasses and Sedges								
Sprengel's sedge (<i>Carex sprengelii</i>)	36	••	UNK	Perennial	Present	wind	Generalist	0
White bear sedge (<i>Carex albursina</i>)	36	•	UNK	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	31	•	UNK	Perennial	Present	wind	Generalist	0
Ambiguous sedge (<i>Carex amphibola</i>)	28	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	36	•	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	72	•	SI	Perennial	Present	insects	Early spring insect	5
Missouri gooseberry (<i>Ribes missouriense</i>)	67	••	SI	Perennial	Present	insects	Generalist	4
Prickly ash (<i>Zanthoxylum americanum</i>)	38	••	D	Perennial	Present	insects	Generalist	4
Nannyberry (<i>Viburnum lentago</i>)	36	•	SI	Perennial	Present	insects	Generalist	4
Prickly gooseberry (<i>Ribes cynosbati</i>)	36	••	SI	Perennial	Present	insects	Generalist	4
Hawthorn (<i>Crataegus</i> spp.)	33	•	Varies	Perennial	Absent	insects	Early spring insect	Varies
Pagoda dogwood (<i>Cornus alternifolia</i>)	33	•	UNK	Perennial	Present	insects	Generalist	3
Red-berried elder (<i>Sambucus racemosa</i>)	28	••	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Basswood	87	•••	SI	Perennial	Absent	insects	Generalist	5
Black ash	64	•••	D	Perennial	Absent	wind	Generalist	0
Sugar maple	62	••••	D	Perennial	Absent	insects	Early spring insect	6
American elm	59	•••	Di	Perennial	Absent	wind	Generalist	0
Hackberry	51	••	SC	Perennial	Absent	wind	Generalist	0
Red elm	46	•••	Di	Perennial	Absent	wind	Generalist	0
Green ash	33	•	D	Perennial	UNK	wind	Generalist	0
Box elder	31	•••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	23	••••	SI	Perennial	Present	wind	Generalist	0
Rock elm	21	•••	Di	Perennial	Absent	wind	Generalist	0
Ironwood	21	•	UNK	Perennial	Present	wind	Generalist	0
Butternut	18	••	SI/sc	Perennial	UNK	wind	Generalist	0
Bitternut hickory	18	•••	UNK	Perennial	Present	wind	Generalist	0
Blue beech	15	•	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Basswood	56	••	SI	Perennial	Absent	insects	Generalist	5
Black ash	46	••	D	Perennial	Absent	wind	Generalist	0
Sugar maple	64	•••	D	Perennial	Absent	insects	Early spring insect	6
American elm	54	••	Di	Perennial	Absent	wind	Generalist	0
Hackberry	56	••	SC	Perennial	Absent	wind	Generalist	0
Red elm	41	•••	Di	Perennial	Absent	wind	Generalist	0
Green ash	18	•	D	Perennial	UNK	wind	Generalist	0
Box elder	36	••	D	Perennial	Absent	insects	Early spring insect	6

Bur oak	15	•	SI	Perennial	Present	wind	Generalist	0
Rock elm	23	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	51	••	UNK	Perennial	Present	wind	Generalist	0
Butternut	10	•	SI/sc	Perennial	UNK	wind	Generalist	0
Bitternut hickory	41	•	UNK	Perennial	Present	wind	Generalist	0
Blue beech	26	••	UNK	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Basswood	49	•	SI	Perennial	Absent	insects	Generalist	5
Black ash	38	•	D	Perennial	Absent	wind	Generalist	0
Sugar maple	41	•	D	Perennial	Absent	insects	Early spring insect	6
American elm	23	•	Di	Perennial	Absent	wind	Generalist	0
Hackberry	36	•	SC	Perennial	Absent	wind	Generalist	0
Red elm	26	••	Di	Perennial	Absent	wind	Generalist	0
Green ash	15	•	D	Perennial	UNK	wind	Generalist	0
Box elder	18	•	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	15	•	SI	Perennial	Present	wind	Generalist	0
Rock elm	8	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	23	•	UNK	Perennial	Present	wind	Generalist	0
Butternut	-	-	SI/sc	Perennial	UNK	wind	Generalist	0
Bitternut hickory	36	•	UNK	Perennial	Present	wind	Generalist	0
Blue beech	15	•	UNK	Perennial	Present	wind	Generalist	0

* Stemless blue violets (*Viola sororia*, *V. nephrophylla*, and similar *Viola* spp.); Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHc26 Central Dry-Mesic Oak-Aspen Forest

Pollinator Resources

Dry-mesic hardwood or, rarely, hardwood-conifer forests, usually with northern red oak as a canopy dominant. Present on well-drained loamy or sandy soils, primarily on stagnation moraines and less frequently on till plains or glacial river terraces.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHc26 include:

Bees:

Hylaeus sparsus (Apiaceae)

Osmia virga (*Vaccinium*)

Andrena wilkella (Fabaceae)



Butterflies:

Phyciodes tharos (*Eurybia macrophylla*)

Erynnis juvenalis (*Quercus*)

Satyrium titus (*Prunus*)

Moths:

Cucullia asteroides (*Eurybia macrophylla*)

Amphipyra pyramidoides (*Corylus cornuta*)

Macrosaccus morrisella (*Amphicarpaea bracteata*)

Cerastis tenebrifera (*Anemone quinquefolia*)

Andrena wilkella (Wilke's mining bee) uses species in the Fabaceae (legume) family as a host plant.

Photo: Michael Veit

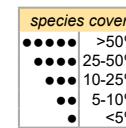


Erynnis juvenalis (Juvenal's duskywing) uses *Quercus* (oak) species as a host plant. Photo: Bob Dunlap

MHc26 Central Dry-Mesic Oak-Aspen Forest

Pollinator Resources Table

MHc26 Class Factsheet. Based on 157 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Large-leaved aster (<i>Aster macrophyllus</i>)	97	•••	A	Perennial	Present	insects	Generalist	2
Bracken (<i>Pteridium aquilinum</i>)	90	••	SC	Perennial	Present	wind, water	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	89	••	D	Perennial	Present	insects	Generalist	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	82	•	SI	Perennial	Present	wind	Generalist	0
Hog peanut (<i>Amphicarpea bracteata</i>)	76	••	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Canada mayflower (<i>Maianthemum canadense</i>)	71	•	SI	Perennial	Present	insects	Early spring insect	5
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	71	•	SI	Perennial	Present	insects	Early spring insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	70	•	UNK	Perennial	Present	insects	Early spring insect	4
Pale bellwort (<i>Uvularia sessilifolia</i>)	69	•	SI	Perennial	Present	insects	Early spring insect	5
Maryland black snakeroot (<i>Sanicula marilandica</i>)	67	•	UNK	Perennial	Absent	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	59	•	D	Perennial	Absent	insects	Generalist	5
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	57	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Common false Solomon's seal (<i>Smilacina racemosa</i>)	55	•	UNK	Perennial	Present	insects	Early spring insect	4
Rose twistedstalk (<i>Streptopus roseus</i>)	54	•	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	52	•	UNK	Perennial	Present	insects	Generalist	3
Common strawberry (<i>Fragaria virginiana</i>)	50	•	SC	Perennial	Present	insects	Early spring insect	3
Pale vetchling (<i>Lathyrus ochroleucus</i>)	49	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	48	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Round-lobed hepatica (<i>Anemone americana</i>)	47	•	SC	Perennial	Present	insects	Early spring insect	3
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	46	•	Varies	Perennial	Present	insects	Varies	Varies
Dwarf raspberry (<i>Rubus pubescens</i>)	38	•	SC	Perennial	Present	insects	Generalist	2
Lady fern (<i>Athyrium filix-femina</i>)	38	•	SC	Perennial	Present	wind, water	Generalist	0
Starflower (<i>Trifolialis borealis</i>)	34	•	SI/sc	Perennial	Present	insects	Generalist	3
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Lindley's aster (<i>Aster ciliolatus</i>)	30	•	UNK	Perennial	Present	insects	Generalist	3
Large-flowered trillium (<i>Trillium grandiflorum</i>)	29	•	SC	Perennial	Present	insects	Early spring insect	3
Veiny pea (<i>Lathyrus venosus</i>)	29	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	91	•••	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	73	••	UNK	Perennial	Absent	wind	Generalist	0
Bearded shorthusk (<i>Brachelytrum erectum</i>)	24	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	26	•	SC	Perennial	Present	insects	Generalist	2
Wild honeysuckle (<i>Lonicera dioica</i>)	24	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Low Shrubs								
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	43	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	24	•	Varies	Perennial	Present	insects	Generalist	Varies

Tall Shrubs								
Beaked hazelnut (<i>Corylus cornuta</i>)	92	••••	Di	Perennial	Present	wind	Generalist	0
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	78	••	UNK	Perennial	Present	insects	Generalist	3
Chokecherry (<i>Prunus virginiana</i>)	78	•	SI	Perennial	Present	insects	Early spring insect	5
Juneberries (<i>Amelanchier</i> spp.)	75	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Bush honeysuckle (<i>Diervilla lonicera</i>)	65	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Pagoda dogwood (<i>Cornus alternifolia</i>)	61	•	UNK	Perennial	Present	insects	Generalist	3
Poison ivy (<i>Toxicodendron rydbergii</i>)	46	•	D	Perennial	Present	insects	Generalist	4
Round-leaved dogwood (<i>Cornus rugosa</i>)	41	•••	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Fly honeysuckle (<i>Lonicera canadensis</i>)	32	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Hairy honeysuckle (<i>Lonicera hirsuta</i>)	24	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Gray dogwood (<i>Cornus racemosa</i>)	21	•	UNK	Perennial	Present	insects	Generalist	3
American hazelnut (<i>Corylus americana</i>)	18	•••	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Northern red oak	82	••••	SI	Perennial	Present	wind	Generalist	0
Paper birch	59	•••	Di	Perennial	Present	wind	Generalist	0
Basswood	45	•••	SI	Perennial	Absent	insects	Generalist	5
Red maple	43	•••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	41	•••	D	Perennial	Present	wind	Generalist	0
Sugar maple	29	•••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	28	•••	SI	Perennial	Present	wind	Generalist	0
Big-toothed aspen	25	•••	D	Perennial	Present	wind	Generalist	0
Green ash	11	••	D	Perennial	UNK	wind	Generalist	0
White pine	10	•••	SI	Perennial	Absent	wind	Generalist	0
Red pine	10	•••	UNK	Perennial	Absent	wind	Generalist	0
Ironwood	10	••	UNK	Perennial	Present	wind	Generalist	0
White oak	9	•••	SI	Perennial	Present	wind	Generalist	0
Blue beech	-	-	UNK	Perennial	Present	wind	Generalist	0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Tree Subcanopy								
Northern red oak	36	••	SI	Perennial	Present	wind	Generalist	0
Paper birch	25	••	Di	Perennial	Present	wind	Generalist	0
Basswood	46	••	SI	Perennial	Absent	insects	Generalist	5
Red maple	59	•••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	20	•	D	Perennial	Present	wind	Generalist	0
Sugar maple	62	•••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	18	•	SI	Perennial	Present	wind	Generalist	0
Big-toothed aspen	8	••	D	Perennial	Present	wind	Generalist	0
Green ash	22	•	D	Perennial	UNK	wind	Generalist	0

White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Red pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Ironwood	62	•••	UNK	Perennial	Present	wind	Generalist	0
White oak	-	-	SI	Perennial	Present	wind	Generalist	0
Blue beech	13	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	12	•	SI	Perennial	Present	insects	Early spring insect	5
Tree Shrub Layer								
Northern red oak	82	•	SI	Perennial	Present	wind	Generalist	0
Paper birch	11	•	DI	Perennial	Present	wind	Generalist	0
Basswood	52	•	SI	Perennial	Absent	insects	Generalist	5
Red maple	78	•	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	46	•	D	Perennial	Present	wind	Generalist	0
Sugar maple	61	••	D	Perennial	Absent	insects	Early spring insect	6
Bur oak	20	•	SI	Perennial	Present	wind	Generalist	0
Big-toothed aspen	18	•	D	Perennial	Present	wind	Generalist	0
Green ash	41	•	D	Perennial	UNK	wind	Generalist	0
White pine	15	•	SI	Perennial	Absent	wind	Generalist	0
Red pine	-	-	UNK	Perennial	Absent	wind	Generalist	0
Ironwood	56	••	UNK	Perennial	Present	wind	Generalist	0
White oak	8	•	SI	Perennial	Present	wind	Generalist	0
Blue beech	15	••	UNK	Perennial	Present	wind	Generalist	0
Black cherry	53	•	SI	Perennial	Present	insects	Early spring insect	5

MHc36 Central Mesic Hardwood Forest (Eastern) Pollinator Resources

Mesic hardwood forests dominated by basswood, northern red oak, and sugar maple. Present on loamy or sandy loam soils on hummocky stagnation moraines and rolling till plains.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHc36 include:

Bees:

Andrena wilkella (Fabaceae)

Hylaeus sparsus (Apiaceae)

Andrena asteris (*Solidago*)

Butterflies:

Satyrium titus (*Prunus*)

Argynnis cybele (*Viola*)

Polygonia progne (*Ribes*)

Moths:

Macrosaccus morrisella (*Amphicarpaea bracteata*)

Lithophane innominata (*Acer saccharum*)

Phyllonorycter lucetiella (*Tilia americana*)

Cucullia convexipennis (*Solidago flexicaulis*)



Andrena asteris (aster miner bee) uses *Solidago* (goldenrod) species as a host plant.

Photo: Heather Holm

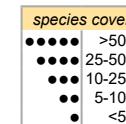


Argynnis cybele (great spangled fritillary) uses *Viola* (violet) species as a host plant. Photo: Bob Dunlap

MHc36 Central Mesic Hardwood Forest (Eastern)

Pollinator Resources Table

MHc36 Class Factsheet. Based on 129 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Early meadow-rue (<i>Thalictrum dioicum</i>)	89	●	SI	Perennial	Present	wind	Generalist	0
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	88	●	D	Perennial	Absent	insects	Generalist	5
Lady fern (<i>Athyrium filix-femina</i>)	88	●●	SC	Perennial	Present	wind, water	Generalist	0
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	86	●	SI	Perennial	Present	insects	Early spring insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	80	●	D	Perennial	Present	insects	Generalist	4
Yellow violet (<i>Viola pubescens</i>)	79	●	SI/SC	Perennial	Present	insects	Early spring insect	4
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	79	●	SI	Perennial	Present	insects	Generalist	4
Large-leaved aster (<i>Aster macrophyllus</i>)	77	●	A	Perennial	Present	insects	Generalist	2
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	67	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Hog peanut (<i>Amphicarpea bracteata</i>)	67	●●	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Common false Solomon's seal (<i>Smilacina racemosa</i>)	66	●	UNK	Perennial	Present	insects	Early spring insect	4
Round-lobed hepatica (<i>Anemone americana</i>)	61	●	SC	Perennial	Present	insects	Early spring insect	3
Rattlesnake fern (<i>Botrychium virginianum</i>)	60	●	SC	Perennial	Present	wind, water	Generalist	0
Wood anemone (<i>Anemone quinquefolia</i>)	60	●	UNK	Perennial	Present	insects	Early spring insect	4
American spikenard (<i>Aralia racemosa</i>)	60	●	UNK	Perennial	Present	insects	Generalist	3
Maryland black snakeroot (<i>Sanicula marilandica</i>)	60	●	UNK	Perennial	Absent	insects	Generalist	4
Bloodroot (<i>Sanguinaria canadensis</i>)	58	●	SC	Perennial	Present	insects	Early spring insect	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	57	●	SC	Perennial	Present	insects	Generalist	2
Rose twistedstalk (<i>Streptopus roseus</i>)	56	●	UNK	Perennial	Present	insects	Early spring insect	4
Pale bellwort (<i>Uvularia sessilifolia</i>)	54	●	SI	Perennial	Present	insects	Early spring insect	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	53	●	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Wild geranium (<i>Geranium maculatum</i>)	52	●	SC	Perennial	Present	insects	Early spring insect	3
Large-flowered trillium (<i>Trillium grandiflorum</i>)	52	●●	SC	Perennial	Present	insects	Early spring insect	3
Canada mayflower (<i>Maianthemum canadense</i>)	51	●	SI	Perennial	Present	insects	Early spring insect	5
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	50	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	50	●	UNK	Perennial	Present	insects	Generalist	3
Lopseed (<i>Phryma leptostachya</i>)	50	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Red baneberry (<i>Actaea rubra</i>)	49	●	SC	Perennial	Present	insects	Early spring insect	3
Interrupted fern (<i>Osmunda claytoniana</i>)	45	●●	SC	Perennial	Present	wind, water	Generalist	0
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	43	●	D	Perennial	Present	insects	Somewhat specific insect	5
Blue cohosh (<i>Caulophyllum thalictroides</i>)	39	●	SC/SI	Perennial	Present	insects	Early spring insect	4
Bracken (<i>Pteridium aquilinum</i>)	39	●	SC	Perennial	Present	wind, water	Generalist	0
Wild ginger (<i>Asarum canadense</i>)	36	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Maidenhair fern (<i>Adiantum pedatum</i>)	26	●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	78	●●●	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	60	●	UNK	Perennial	Absent	wind	Generalist	0

Long-stalked sedge (<i>Carex pedunculata</i>)	53	•	SC	Perennial	Present	wind	Generalist	0
Nodding fescue (<i>Festuca subverticillata</i>)	47	•	UNK	Perennial	Absent	wind	Generalist	0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	41	•	UNK	Perennial	Present	wind	Generalist	0
Dewey's sedge (<i>Carex deweyana</i>)	32	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	43	•	SC	Perennial	Present	insects	Generalist	0
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	91	•	SI	Perennial	Present	insects	Early spring insect	5
Pagoda dogwood (<i>Cornus alternifolia</i>)	76	•	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	74	•	SI	Perennial	Present	insects	Generalist	4
Beaked hazelnut (<i>Corylus cornuta</i>)	62	••	Di	Perennial	Present	wind	Generalist	0
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	43	•	UNK	Perennial	Present	insects	Generalist	3
Leatherwood (<i>Dirca palustris</i>)	38	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Juneberries (<i>Amelanchier</i> spp.)	29	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Poison ivy (<i>Toxicodendron rydbergii</i>)	24	•	D	Perennial	Present	insects	Generalist	4
Fly honeysuckle (<i>Lonicera canadensis</i>)	24	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Tree Canopy								
Basswood	87	•••	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	74	••••	SI	Perennial	Present	wind	Generalist	0
Sugar maple	74	••••	D	Perennial	Absent	insects	Early spring insect	6
Green ash	32	••	D	Perennial	UNK	wind	Generalist	0
Paper birch	31	••	Di	Perennial	Present	wind	Generalist	0
Bur oak	30	•••	SI	Perennial	Present	wind	Generalist	0
Red maple	28	••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	20	•••	D	Perennial	Present	wind	Generalist	0
Big-toothed aspen	17	••	D	Perennial	Present	wind	Generalist	0
Bitternut hickory	12	••	UNK	Perennial	Present	wind	Generalist	0
Ironwood	11	•	UNK	Perennial	Present	wind	Generalist	0
Blue beech	-	-	UNK	Perennial	Present	wind	Generalist	0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Tree Subcanopy								
Basswood	64	••	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	17	•••	SI	Perennial	Present	wind	Generalist	0
Sugar maple	91	••••	D	Perennial	Absent	insects	Early spring insect	6
Green ash	16	•	D	Perennial	UNK	wind	Generalist	0
Paper birch	14	•	Di	Perennial	Present	wind	Generalist	0
Bur oak	13	••	SI	Perennial	Present	wind	Generalist	0
Red maple	28	••	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	8	•	D	Perennial	Present	wind	Generalist	0
Big-toothed aspen	-	-	D	Perennial	Present	wind	Generalist	0

Bitternut hickory	12	••	UNK	Perennial	Present	wind	Generalist	0
Ironwood	77	•••	UNK	Perennial	Present	wind	Generalist	0
Blue beech	28	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	-	-	SI	Perennial	Present	insects	Early spring insect	5
Tree Shrub Layer								
Basswood	73	•	SI	Perennial	Absent	insects	Generalist	5
Northern red oak	67	•	SI	Perennial	Present	wind	Generalist	0
Sugar maple	88	•••	D	Perennial	Absent	insects	Early spring insect	6
Green ash	44	•	D	Perennial	UNK	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Bur oak	15	•	SI	Perennial	Present	wind	Generalist	0
Red maple	47	•	D	Perennial	Absent	insects	Early spring insect	6
Quaking aspen	28	•	D	Perennial	Present	wind	Generalist	0
Big-toothed aspen	13	•	D	Perennial	Present	wind	Generalist	0
Bitternut hickory	33	•	UNK	Perennial	Present	wind	Generalist	0
Ironwood	69	•	UNK	Perennial	Present	wind	Generalist	0
Blue beech	35	•	UNK	Perennial	Present	wind	Generalist	0
Black cherry	30	•	SI	Perennial	Present	insects	Early spring insect	5

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHc37 Central Mesic Hardwood Forest (Western)

Pollinator Resources

Mesic hardwood forests dominated most-commonly by basswood and sugar maple. Present on well-drained loamy soils on rolling to hummocky stagnation moraines.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHc37 include:

Bees:

Andrena lupinorum (Fabaceae)
Hylaeus sparsus (Apiaceae)
Andrena persimulata (*Cornus* [*Swida*])

Butterflies:

Erynnis juvenalis (*Quercus*)
Satyrium titus (*Prunus*)
Erynnis icelus (*Populus*)

Moths:

Lithophane innominata (*Acer saccharum*)
Dichomeris bilobella (*Solidago flexicaulis*)
Caloptilia fraxinella (*Fraxinus pennsylvanica*)
Ceratomia amyntor (*Ulmus americana*)



Hylaeus sparsus uses species in the Apiaceae (carrot) family as a host plant. Photo: Michael Veit

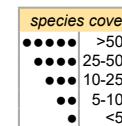


Erynnis juvenalis (Juvenal's duskywing) uses *Quercus* (oak) species as a host plant. Photo: Bob Dunlap

MHc37 Central Mesic Hardwood Forest (Western)

Pollinator Resources Table

[MHc37 Class Factsheet](#). Based on 107 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Early meadow-rue (<i>Thalictrum dioicum</i>)	96	••	SI	Perennial	Present	wind	Generalist	0
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	95	•••	SI	Perennial	Present	insects	Early spring insect	5
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	86	••	SI	Perennial	Present	insects	Generalist	4
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	83	•	D	Perennial	Present	insects	Generalist	4
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	75	•	D	Perennial	Absent	insects	Generalist	5
Yellow violet (<i>Viola pubescens</i>)	70	•	SI/SC	Perennial	Present	insects	Early spring insect	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	68	•	SC	Perennial	Present	wind, water	Generalist	0
Round-lobed hepatica (<i>Anemone americana</i>)	62	•	SC	Perennial	Present	insects	Early spring insect	3
Maryland black snakeroot (<i>Sanicula marilandica</i>)	54	•	UNK	Perennial	Absent	insects	Generalist	4
Wood anemone (<i>Anemone quinquefolia</i>)	51	•	UNK	Perennial	Present	insects	Early spring insect	4
Lopseed (<i>Phryma leptostachya</i>)	50	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Bloodroot (<i>Sanguinaria canadensis</i>)	48	•	SC	Perennial	Present	insects	Early spring insect	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	47	•	UNK	Perennial	Present	insects	Early spring insect	4
Rose twistedstalk (<i>Streptopus roseus</i>)	43	•	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	41	•	UNK	Perennial	Present	insects	Generalist	3
Red baneberry (<i>Actaea rubra</i>)	39	•	SC	Perennial	Present	insects	Early spring insect	3
American spikenard (<i>Aralia racemosa</i>)	38	•	UNK	Perennial	Present	insects	Generalist	3
Hog peanut (<i>Amphicarpa bracteata</i>)	38	•	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Blue cohosh (<i>Caulophyllum thalictroides</i>)	37	•	SC/SI	Perennial	Present	insects	Early spring insect	4
Canada mayflower (<i>Maianthemum canadense</i>)	33	•	SI	Perennial	Present	insects	Early spring insect	5
Wild ginger (<i>Asarum canadense</i>)	33	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Lindley's aster (<i>Aster ciliolatus</i>)	32	•	UNK	Perennial	Present	insects	Generalist	3
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	31	•	D	Perennial	Present	insects	Somewhat specific insect	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	30	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Dwarf raspberry (<i>Rubus pubescens</i>)	29	••	SC	Perennial	Present	insects	Generalist	2
Common strawberry (<i>Fragaria virginiana</i>)	26	•	SC	Perennial	Present	insects	Early spring insect	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	25	•	SC	Perennial	Present	insects	Generalist	2
Yellow lady's slipper (<i>Cypripedium calceolus</i>)	24	•	SC	Perennial	Weakly	insects	Very specialized insect	4
Bracken (<i>Pteridium aquilinum</i>)	24	••	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	23	•	A	Perennial	Present	insects	Generalist	2
Tall coneflower (<i>Rudbeckia laciniata</i>)	22	•	SC	Perennial	Present	insects	Generalist	2
Lady fern (<i>Athyrium filix-femina</i>)	22	•	SC	Perennial	Present	wind, water	Generalist	0
Pale bellwort (<i>Uvularia sessilifolia</i>)	22	•	SI	Perennial	Present	insects	Early spring insect	5
Veiny pea (<i>Lathyrus venosus</i>)	17	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Pale vetchling (<i>Lathyrus ochroleucus</i>)	17	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	16	•	SI	Perennial	Present	insects	Generalist	4
Hairy Solomon's seal (<i>Polygonatum pubescens</i>)	15	•	UNK	Perennial	Present	insects	Somewhat specific insect	4

Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	87	•••	SC	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	77	•	UNK	Perennial	Absent	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	22	•	UNK	Perennial	Absent	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	18	••	SC	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	22	•	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Leatherwood (<i>Dirca palustris</i>)	68	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Chokecherry (<i>Prunus virginiana</i>)	65	•	SI	Perennial	Present	insects	Early spring insect	5
Prickly gooseberry (<i>Ribes cynosbati</i>)	63	•	SI	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	63	•	UNK	Perennial	Present	insects	Generalist	3
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	55	•	UNK	Perennial	Present	insects	Generalist	3
Beaked hazelnut (<i>Corylus cornuta</i>)	49	••	Di	Perennial	Present	wind	Generalist	0
Juneberries (<i>Amelanchier</i> spp.)	45	•	Varies	Perennial	Present	insects	Early spring insect	Varies
American hazelnut (<i>Corylus americana</i>)	37	••	Di	Perennial	Present	wind	Generalist	0
Poison ivy (<i>Toxicodendron rydbergii</i>)	23	•	D	Perennial	Present	insects	Generalist	4
Prickly ash (<i>Zanthoxylum americanum</i>)	19	•	D	Perennial	Present	insects	Generalist	4
Round-leaved dogwood (<i>Cornus rugosa</i>)	17	••	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Basswood	88	•••	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	79	••••	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	65	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	47	••	D	Perennial	Present	wind	Generalist	0
Northern red oak	44	•••	SI	Perennial	Present	wind	Generalist	0
Bur oak	39	••	SI	Perennial	Present	wind	Generalist	0
American elm	30	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	16	•••	UNK	Perennial	Present	wind	Generalist	0
Green ash	12	•	D	Perennial	UNK	wind	Generalist	0
Tree Subcanopy								
Basswood	63	••	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	85	••••	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	22	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	23	•	D	Perennial	Present	wind	Generalist	0
Northern red oak	18	•	SI	Perennial	Present	wind	Generalist	0
Bur oak	17	•	SI	Perennial	Present	wind	Generalist	0
American elm	40	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	71	••	UNK	Perennial	Present	wind	Generalist	0
Green ash	14	•	D	Perennial	UNK	wind	Generalist	0

Tree Shrub Layer								
Basswood	68	•	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	93	••••	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	8	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	37	•	D	Perennial	Present	wind	Generalist	0
Northern red oak	64	•	SI	Perennial	Present	wind	Generalist	0
Bur oak	24	•	SI	Perennial	Present	wind	Generalist	0
American elm	68	•	Di	Perennial	Absent	wind	Generalist	0
Ironwood	72	••	UNK	Perennial	Present	wind	Generalist	0
Green ash	26	•	D	Perennial	UNK	wind	Generalist	0

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHc38 Central Mesic Cold-Slope Hardwood-Conifer Forest Pollinator Resources

Hardwood-conifer forests on steep north-facing bluffs, often associated with algic talus slopes where cold air vents enhance the cool, moist microclimate of the community. Characterized by northern species otherwise absent in southeastern Minnesota.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHc38 include:

Bees:

- Andrena uvulariae* (*Uvularia*)
- Andrena integra* (*Cornus [Swida]*)
- Hylaeus sparsus* (*Apiaceae*)
- Andrena geranii* (*Hydrophyllum virginianum*)

Butterflies:

- Erynnis lucilius* (*Aquilegia canadensis*)
- Polygonia progne* (*Ribes*)
- Erynnis juvenalis* (*Quercus*)

Moths:

- Cucullia convexipennis* (*Solidago flexicaulis*)
- Papaipema leucostigma* (*Aquilegia canadensis*)
- Leucanthiza dircella* (*Dirca palustris*)



Polygonia progne (gray comma) uses *Ribes* (currant, gooseberry) species as a host plant.

Photo: Bob Dunlap



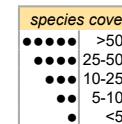
Papaipema leucostigma (columbine borer) uses *Aquilegia canadensis* (eastern red columbine) as a host plant.

Photo: Kyle Johnson

MHc38 Central Mesic Cold-Slope Hardwood-Conifer Forest

Pollinator Resources Table

MHc38 Class Factsheet. Based on 7 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Maidenhair fern (<i>Adiantum pedatum</i>)	100	●	SC	Perennial	Present	wind, water	Generalist	0
Early meadow-rue (<i>Thalictrum dioicum</i>)	100	●	SI	Perennial	Present	wind	Generalist	0
Canada mayflower (<i>Maianthemum canadense</i>)	100	●	SI	Perennial	Present	insects	Early spring insect	5
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	100	●	SI	Perennial	Present	insects	Generalist	4
Wild ginger (<i>Asarum canadense</i>)	100	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Red baneberry (<i>Actaea rubra</i>)	100	●	SC	Perennial	Present	insects	Early spring insect	3
Bulblet fern (<i>Cystopteris bulbifera</i>)	86	●●●	SC	Perennial	Present	wind, water	Generalist	0
Two-leaved miterwort (<i>Mitella diphylla</i>)	86	●	UNK	Perennial	Present	insects	Early spring insect	4
Sharp-lobed hepatica (<i>Anemone acutiloba</i>)	86	●	SC	Perennial	Present	insects	Early spring insect	3
Columbine (<i>Aquilegia canadensis</i>)	86	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	86	●	SI	Perennial	Present	insects	Early spring insect	5
Bloodroot (<i>Sanguinaria canadensis</i>)	86	●	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	71	●	UNK	Perennial	Present	insects	Early spring insect	4
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	71	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	57	●	D	Perennial	Present	insects	Generalist	4
Rose twistedstalk (<i>Streptopus roseus</i>)	57	●	UNK	Perennial	Present	insects	Early spring insect	4
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	57	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Northern bedstraw (<i>Galium boreale</i>)	57	●	SI	Perennial	Present	insects	Generalist	4
Blue cohosh (<i>Caulophyllum thalictroides</i>)	43	●	SC/SI	Perennial	Present	insects	Early spring insect	4
Shining bedstraw (<i>Galium concinnum</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Sweet-scented bedstraw (<i>Galium triflorum</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	43	●	D	Perennial	Absent	insects	Generalist	5
Lady fern (<i>Athyrium filix-femina</i>)	43	●	SC	Perennial	Present	wind, water	Generalist	0
Common false Solomon's seal (<i>Smilacina racemosa</i>)	43	●	UNK	Perennial	Present	insects	Early spring insect	4
Slender cliff brake (<i>Cryptogramma stelleri</i>)	29	●	SC	Perennial	Present	wind, water	Generalist	0
Common polypody (<i>Polypodium virginianum</i>)	29	●	SC	Perennial	Present	wind, water	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	29	●	SC	Perennial	Present	insects	Generalist	2
Touch-me-not (<i>Impatiens</i> spp.)	29	●●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Nodding wild onion (<i>Allium cernuum</i>)	29	●●	SC	Perennial	Present	insects	Generalist	2
Grasses and Sedges								
Long-stalked sedge (<i>Carex pedunculata</i>)	71	●	SC	Perennial	Present	wind	Generalist	0
Bearded shorthusk (<i>Brachelytrum erectum</i>)	57	●	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	86	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	86	●●	SI	Perennial	Present	insects	Early spring insect	5
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	86	●	UNK	Perennial	Present	insects	Generalist	3

Canada yew (<i>Taxus canadensis</i>)	57	•••	UNK	Perennial	Absent	wind	Generalist	0
Highbush cranberry (<i>Viburnum trilobum</i>)	57	•	UNK	Perennial	Present	insects	Generalist	3
Bush honeysuckle (<i>Diervilla lonicera</i>)	57	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Pagoda dogwood (<i>Cornus alternifolia</i>)	57	•••	UNK	Perennial	Present	insects	Generalist	3
Poison ivy (<i>Toxicodendron rydbergii</i>)	57	••	D	Perennial	Present	insects	Generalist	4
Round-leaved dogwood (<i>Cornus rugosa</i>)	57	•	UNK	Perennial	Present	insects	Generalist	3
Prickly gooseberry (<i>Ribes cynosbati</i>)	43	•	SI	Perennial	Present	insects	Generalist	4
Common elder (<i>Sambucus canadensis</i>)	43	•	UNK	Perennial	Present	insects	Generalist	3
Red-berried elder (<i>Sambucus racemosa</i>)	43	•	UNK	Perennial	Present	insects	Generalist	3
American hazelnut (<i>Corylus americana</i>)	43	•	Di	Perennial	Present	wind	Generalist	0
Leatherwood (<i>Dirca palustris</i>)	43	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Beaked hazelnut (<i>Corylus cornuta</i>)	43	••	Di	Perennial	Present	wind	Generalist	0
Missouri gooseberry (<i>Ribes missouriense</i>)	43	•	SI	Perennial	Present	insects	Generalist	4
Bladdernut (<i>Staphylea trifolia</i>)	29	•••	SC	Perennial	Present	insects	Generalist	2
Tree Canopy								
Sugar maple	100	••••	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	86	•••	SI	Perennial	Present	wind	Generalist	0
Ironwood	71	••	UNK	Perennial	Present	wind	Generalist	0
White pine	71	••••	SI	Perennial	Absent	wind	Generalist	0
Basswood	57	••	SI	Perennial	Absent	insects	Generalist	5
White oak	43	••	SI	Perennial	Present	wind	Generalist	0
Paper birch	43	•••	Di	Perennial	Present	wind	Generalist	0
Yellow birch	43	•••	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	29	•	UNK	Perennial	Present	wind	Generalist	0
Balsam fir	29	•••	UNK	Perennial	Absent	wind	Generalist	0
Green ash	29	•	D	Perennial	UNK	wind	Generalist	0
Black ash	14	•	D	Perennial	Absent	wind	Generalist	0
Blue beech	-	-	UNK	Perennial	Present	wind	Generalist	0
American elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Sugar maple	100	•••	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	14	•	SI	Perennial	Present	wind	Generalist	0
Ironwood	86	•••	UNK	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Basswood	57	•	SI	Perennial	Absent	insects	Generalist	5
White oak	14	•	SI	Perennial	Present	wind	Generalist	0
Paper birch	29	•	Di	Perennial	Present	wind	Generalist	0
Yellow birch	43	•	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	-	-	UNK	Perennial	Present	wind	Generalist	0
Balsam fir	43	•••	UNK	Perennial	Absent	wind	Generalist	0

Green ash	29	•	D	Perennial	UNK	wind	Generalist	0
Black ash	14	•	D	Perennial	Absent	wind	Generalist	0
Blue beech	43	•	UNK	Perennial	Present	wind	Generalist	0
American elm	14	•	Di	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Sugar maple	86	•••	D	Perennial	Absent	insects	Early spring insect	6
Northern red oak	43	•	SI	Perennial	Present	wind	Generalist	0
Ironwood	71	•	UNK	Perennial	Present	wind	Generalist	0
White pine	43	•	SI	Perennial	Absent	wind	Generalist	0
Basswood	86	•	SI	Perennial	Absent	insects	Generalist	5
White oak	14	•	SI	Perennial	Present	wind	Generalist	0
Paper birch	29	•	Di	Perennial	Present	wind	Generalist	0
Yellow birch	14	•	Di	Perennial	Present	wind	Generalist	0
Bitternut hickory	43	••	UNK	Perennial	Present	wind	Generalist	0
Balsam fir	43	•	UNK	Perennial	Absent	wind	Generalist	0
Green ash	29	•	D	Perennial	UNK	wind	Generalist	0
Black ash	29	•	D	Perennial	Absent	wind	Generalist	0
Blue beech	43	•••	UNK	Perennial	Present	wind	Generalist	0
American elm	29	•	Di	Perennial	Absent	wind	Generalist	0

MHc47 Central Wet-Mesic Hardwood Forest

Pollinator Resources

Wet-mesic hardwood forests on somewhat poorly drained sandy loam soils on till plains and stream terraces, often on broad flats and gentle slopes adjacent to wetlands and in ecotones between upland forests and wetlands. Soils are saturated for prolonged periods, either because of clayey subsoil horizons that impede drainage or because of high local water tables.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHc47 include:

Bees:

Hylaeus sparsus (Apiaceae)

Andrena distans (*Geranium maculatum*)

Andrena geranii (*Hydrophyllum virginianum*)



Andrena distans uses *Geranium maculatum* (wild geranium) as a host plant. Photo: Heather Holm

Moths:

Macrosaccus morrisella (*Amphicarpa bracteata*)

Cucullia asteroides (*Eurybia macrophylla*)

Sphinx canadensis (*Fraxinus nigra*)

Agonopterix pulvipennella (*Symphytum lateriflorum*)

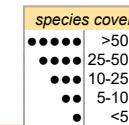


Lethe eurydice (eyed brown) uses *Carex* (sedge) species as a host plant. Photo: Bob Dunlap

MHc47 Central Wet-Mesic Hardwood Forest

Pollinator Resources Table

[MHc47 Class Factsheet](#). Based on 23 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	100	•	D	Perennial	Absent	insects	Generalist	5
Lady fern (<i>Athyrium filix-femina</i>)	91	•••	SC	Perennial	Present	wind, water	Generalist	0
Early meadow-rue (<i>Thalictrum dioicum</i>)	91	•	SI	Perennial	Present	wind	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	83	•	UNK	Perennial	Present	insects	Generalist	3
Large-leaved aster (<i>Aster macrophyllus</i>)	83	•	A	Perennial	Present	insects	Generalist	2
Hog peanut (<i>Amphicarpea bracteata</i>)	83	•••	CH and CL	Annual	Present	insects	Somewhat specific insect	6
Erect, Smooth, or Illinois carrion-flower (<i>Smilax spp.</i>)*	78	•	D	Perennial	Present	insects	Somewhat specific insect	5
Large-flowered bellwort (<i>Uvularia grandiflora</i>)	78	•	SI	Perennial	Present	insects	Early spring insect	5
Pale bellwort (<i>Uvularia sessilifolia</i>)	78	•	SI	Perennial	Present	insects	Early spring insect	5
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	78	•	Varies	Perennial	Present	insects	Varies	Varies
Canada mayflower (<i>Maianthemum canadense</i>)	78	•	SI	Perennial	Present	insects	Early spring insect	5
Two-leaved miterwort (<i>Mitella diphylla</i>)	78	•	UNK	Perennial	Present	insects	Early spring insect	4
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	74	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Pointed-leaved tick trefoil (<i>Desmodium glutinosum</i>)	70	••	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	70	•	D	Perennial	Present	insects	Generalist	4
Side-flowering aster (<i>Aster lateriflorus</i>)	70	•	SI	Perennial	Present	insects	Generalist	4
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	65	•	SC	Perennial	Present	insects	Generalist	2
Maryland black snakeroot (<i>Sanicula marilandica</i>)	65	•	UNK	Perennial	Absent	insects	Generalist	4
Wild ginger (<i>Asarum canadense</i>)	65	••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Dwarf raspberry (<i>Rubus pubescens</i>)	61	•	SC	Perennial	Present	insects	Generalist	2
Large-flowered trillium (<i>Trillium grandiflorum</i>)	61	•	SC	Perennial	Present	insects	Early spring insect	3
Wild geranium (<i>Geranium maculatum</i>)	61	•	SC	Perennial	Present	insects	Early spring insect	3
Rose twistedstalk (<i>Streptopus roseus</i>)	57	•	UNK	Perennial	Present	insects	Early spring insect	4
Bloodroot (<i>Sanguinaria canadensis</i>)	57	•	SC	Perennial	Present	insects	Early spring insect	3
Lopseed (<i>Phryma leptostachya</i>)	52	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Honewort (<i>Cryptotaenia canadensis</i>)	52	•	SC	Perennial	Present	insects	Generalist	2
Red baneberry (<i>Actaea rubra</i>)	52	•	SC	Perennial	Present	insects	Early spring insect	3
Wood anemone (<i>Anemone quinquefolia</i>)	52	•	UNK	Perennial	Present	insects	Early spring insect	4
Common strawberry (<i>Fragaria virginiana</i>)	48	•	SC	Perennial	Present	insects	Early spring insect	3
Sensitive fern (<i>Onoclea sensibilis</i>)	48	•	SC	Perennial	Present	wind, water	Generalist	0
Common false Solomon's seal (<i>Smilacina racemosa</i>)	48	•	UNK	Perennial	Present	insects	Early spring insect	4
Interrupted fern (<i>Osmunda claytoniana</i>)	48	•	SC	Perennial	Present	wind, water	Generalist	0
Round-lobed hepatica (<i>Anemone americana</i>)	48	•	SC	Perennial	Present	insects	Early spring insect	3
Touch-me-not (<i>Impatiens spp.</i>)	43	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Tall coneflower (<i>Rudbeckia laciniata</i>)	43	•	SC	Perennial	Present	insects	Generalist	2
Spotted water hemlock (<i>Cicuta maculata</i>)	43	•	SC	Perennial	Present	insects	Generalist	2
Ostrich fern (<i>Matteuccia struthiopteris</i>)	39	•••	SC	Perennial	Present	wind, water	Generalist	0

Maidenhair fern (<i>Adiantum pedatum</i>)	35	●●●	SC	Perennial	Present	wind, insects	Generalist	0
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	35	●●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Nodding fescue (<i>Festuca subverticillata</i>)	70	●	UNK	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	70	●●●	SC	Perennial	Present	wind	Generalist	0
Bearded shorthusk (<i>Brachyelytrum erectum</i>)	65	●	UNK	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	61	●●	SC	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i>)	61	●	UNK	Perennial	Present	wind	Generalist	0
Graceful sedge (<i>Carex gracillima</i>)	52	●	UNK	Perennial	Present	wind	Generalist	0
Bottlebrush grass (<i>Elymus hystrix</i>)	52	●	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	78	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	74	●	SI	Perennial	Present	insects	Early spring insect	5
Prickly gooseberry (<i>Ribes cynosbati</i>)	61	●	SI	Perennial	Present	insects	Generalist	4
Hawthorn (<i>Crataegus</i> spp.)	57	●	Varies	Perennial	Absent	insects	Early spring insect	Varies
Beaked hazelnut (<i>Corylus cornuta</i>)	57	●●●	Di	Perennial	Present	wind	Generalist	0
Nannyberry (<i>Viburnum lentago</i>)	57	●	SI	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	48	●	D	Perennial	Present	insects	Generalist	4
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	48	●	UNK	Perennial	Present	insects	Generalist	3
Tree Canopy								
Basswood	91	●●●●	SI	Perennial	Absent	insects	Generalist	5
Black ash	74	●●●	D	Perennial	Absent	wind	Generalist	0
Bur oak	65	●●●	SI	Perennial	Present	wind	Generalist	0
Northern red oak	57	●●●	SI	Perennial	Present	wind	Generalist	0
Green ash	43	●●	D	Perennial	UNK	wind	Generalist	0
Sugar maple	43	●●●	D	Perennial	Absent	insects	Early spring insect	6
Red maple	39	●●●	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0
Blue beech	-	-	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Basswood	70	●●●	SI	Perennial	Absent	insects	Generalist	5
Black ash	52	●●●	D	Perennial	Absent	wind	Generalist	0
Bur oak	43	●●●	SI	Perennial	Present	wind	Generalist	0
Northern red oak	13	●●	SI	Perennial	Present	wind	Generalist	0
Green ash	9	●	D	Perennial	UNK	wind	Generalist	0
Sugar maple	52	●●●●	D	Perennial	Absent	insects	Early spring insect	6
Red maple	13	●●	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	74	●●	UNK	Perennial	Present	wind	Generalist	0
Blue beech	61	●●●	UNK	Perennial	Present	wind	Generalist	0

Tree Shrub Layer								
Basswood	70	•	SI	Perennial	Absent	insects	Generalist	5
Black ash	78	•	D	Perennial	Absent	wind	Generalist	0
Bur oak	43	•	SI	Perennial	Present	wind	Generalist	0
Northern red oak	74	•	SI	Perennial	Present	wind	Generalist	0
Green ash	48	•	D	Perennial	UNK	wind	Generalist	0
Sugar maple	57	•••	D	Perennial	Absent	insects	Early spring insect	6
Red maple	57	•	D	Perennial	Absent	insects	Early spring insect	6
Ironwood	43	•	UNK	Perennial	Present	wind	Generalist	0
Blue beech	52	••	UNK	Perennial	Present	wind	Generalist	0

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*)

MHw36 Northwestern Wet-Mesic Hardwood Forest

Pollinator Resources

Wet-mesic hardwood forests on somewhat poorly drained, fire-protected sites on alluvial deposits along rivers draining the Glacial Lake Agassiz plain and on broad flats associated with shoreline features of Glacial Lake Agassiz.

Examples of insect pollinators (and their associated host plants in parentheses) that use MHw36 include:

Bees:

Andrena melanochroa (Rosaceae)
Andrena platyparia (*Cornus* [*Swida*])
Andrena placata (*Solidago*)



Butterflies:

Satyrium edwardsii (*Quercus*)
Polygonia progne (*Ribes*)
Oeneis macounii (*Oryzopsis asperifolia*)

Moths:

Caloptilia negundella (*Acer negundo*)
Cycnia tenera (*Apocynum androsaemifolium*)
Ceratomia amyntor (*Ulmus americana*)
Mesoleuca ruficillata (*Rubus idaeus* var. *strigosus*)

Andrena placata (peaceful miner bee) uses *Solidago* (goldenrod) species as a host plant.

Photo: Michael Veit

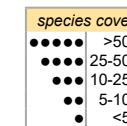


Satyrium edwardsii (Edwards' hairstreak) uses *Quercus* (oak) species as a host plant. Photo: Bob Dunlap

MHw36 Northwestern Wet-Mesic Hardwood Forest

Pollinator Resources Table

[MHw36 Class Factsheet](#). Based on 6 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada mayflower (<i>Maianthemum canadense</i>)	100	●	SI	Perennial	Present	insects	Early spring insect	5
Maryland black snakeroot (<i>Sanicula marilandica</i>)	100	●	UNK	Perennial	Absent	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	83	●	UNK	Perennial	Present	insects	Generalist	3
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	83	●	SI	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	83	●	SC	Perennial	Present	insects	Generalist	2
Red baneberry (<i>Actaea rubra</i>)	83	●	SC	Perennial	Present	insects	Early spring insect	3
Nodding trillium (<i>Trillium cernuum</i>)	83	●	A	Perennial	Present	insects	Early spring insect	3
Rattlesnake fern (<i>Botrychium virginianum</i>)	67	●	SC	Perennial	Present	wind, water	Generalist	0
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	67	●	D	Perennial	Absent	insects	Generalist	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	67	●●●	D	Perennial	Present	insects	Generalist	4
Lopseed (<i>Phryma leptostachya</i>)	67	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Starry false Solomon's seal (<i>Smilacina stellata</i>)	67	●	UNK	Perennial	Present	insects	Early spring insect	4
Early meadow-rue (<i>Thalictrum dioicum</i>)	50	●●	SI	Perennial	Present	wind	Generalist	0
Lindley's aster (<i>Aster ciliolatus</i>)	50	●	UNK	Perennial	Present	insects	Generalist	3
Common strawberry (<i>Fragaria virginiana</i>)	50	●	SC	Perennial	Present	insects	Early spring insect	3
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	50	●●	D	Perennial	Present	wind	Generalist	0
Erect or Smooth carrion-flower (<i>Smilax ecirrata</i> or <i>S. herbacea</i>)	50	●	D	Perennial	Present	insects	Somewhat specific insect	5
Bracken (<i>Pteridium aquilinum</i>)	50	●●●	SC	Perennial	Present	wind, water	Generalist	0
Tall coneflower (<i>Rudbeckia laciniata</i>)	50	●	SC	Perennial	Present	insects	Generalist	2
Veiny pea (<i>Lathyrus venosus</i>)	50	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Flat-topped aster (<i>Aster umbellatus</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	33	●	SC	Perennial	Present	insects	Generalist	2
Northern bedstraw (<i>Galium boreale</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	33	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Virginia thimbleweed (<i>Anemone virginiana</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Columbine (<i>Aquilegia canadensis</i>)	33	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Common false Solomon's seal (<i>Smilacina racemosa</i>)	33	●	UNK	Perennial	Present	insects	Early spring insect	4
Canada goldenrod (<i>Solidago canadensis</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Rugulose or Yellow violet (<i>Viola canadensis</i> or <i>V. pubescens</i>)	33	●	Varies	Perennial	Present	insects	Varies	Varies
Giant goldenrod (<i>Solidago gigantea</i>)	33	●	GM	Perennial	Present	insects	Generalist	4
Giant Solomon's seal (<i>Polygonatum biflorum</i>)	33	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	33	●	D	Perennial	Present	wind	Generalist	0
Hispid buttercup (<i>Ranunculus hispida</i>)	33	●	SI	Perennial	Present	insects	Early spring insect	5
Rose twistedstalk (<i>Streptopus roseus</i>)	33	●	UNK	Perennial	Present	insects	Early spring insect	4
Wild ginger (<i>Asarum canadense</i>)	17	●●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Grasses and Sedges								
Pennsylvania sedge (<i>Carex pensylvanica</i>)	83	●●●●	SC	Perennial	Present	wind	Generalist	0

Grasses and Sedges								
Nodding fescue (<i>Festuca subverticillata</i>)	33	•	UNK	Perennial	Absent	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	33	••	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	50	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Virginia creeper (<i>Parthenocissus</i> spp.)	50	•••	SC	Perennial	Present	insects	Generalist	2
Low shrubs								
Poison ivy (<i>Toxicodendron rydbergii</i>)	83	••	D	Perennial	Present	insects	Generalist	4
Red raspberry (<i>Rubus idaeus</i>)	67	•	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Juneberries (<i>Amelanchier</i> spp.)	100	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Downy arrowwood (<i>Viburnum rafinesquianum</i>)	83	••	UNK	Perennial	Present	insects	Generalist	3
Gray dogwood (<i>Cornus racemosa</i>)	67	•••	UNK	Perennial	Present	insects	Generalist	3
Highbush cranberry (<i>Viburnum trilobum</i>)	67	•	UNK	Perennial	Present	insects	Generalist	3
Beaked hazelnut (<i>Corylus cornuta</i>)	67	••••	Di	Perennial	Present	wind	Generalist	0
Wild black currant (<i>Ribes americanum</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Prickly gooseberry (<i>Ribes cynosbati</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	33	•	SI	Perennial	Present	insects	Early spring insect	5
Nannyberry (<i>Viburnum lentago</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
American hazelnut (<i>Corylus americana</i>)	17	••••	Di	Perennial	Present	wind	Generalist	0
Tree Canopy								
Quaking aspen	67	•••	D	Perennial	Present	wind	Generalist	0
Bur oak	50	••••	SI	Perennial	Present	wind	Generalist	0
American elm	33	•••	Di	Perennial	Absent	wind	Generalist	0
Green ash	33	••	D	Perennial	UNK	wind	Generalist	0
Basswood	33	•••••	SI	Perennial	Absent	insects	Generalist	5
Balsam poplar	17	•	D	Perennial	Present	wind	Generalist	0
Cottonwood	17	•	D	Perennial	Present	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Black ash	-	-	D	Perennial	Absent	wind	Generalist	0
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Quaking aspen	33	•	D	Perennial	Present	wind	Generalist	0
Bur oak	33	•••	SI	Perennial	Present	wind	Generalist	0
American elm	50	••	Di	Perennial	Absent	wind	Generalist	0
Green ash	67	•••	D	Perennial	UNK	wind	Generalist	0
Basswood	-	-	SI	Perennial	Absent	insects	Generalist	5
Balsam poplar	33	•	D	Perennial	Present	wind	Generalist	0
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Box elder	67	••	D	Perennial	Absent	insects	Early spring insect	6

Black ash	17	•	D	Perennial	Absent	wind	Generalist	0
Ironwood	17	•••	UNK	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Quaking aspen	50	•	D	Perennial	Present	wind	Generalist	0
Bur oak	67	•	SI	Perennial	Present	wind	Generalist	0
American elm	83	•	Di	Perennial	Absent	wind	Generalist	0
Green ash	33	•	D	Perennial	UNK	wind	Generalist	0
Basswood	33	•	SI	Perennial	Absent	insects	Generalist	5
Balsam poplar	33	•	D	Perennial	Present	wind	Generalist	0
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Box elder	50	•	D	Perennial	Absent	insects	Early spring insect	6
Black ash	17	•	D	Perennial	Absent	wind	Generalist	0
Ironwood	-	-	UNK	Perennial	Present	wind	Generalist	0

FFn57 Northern Terrace Forest

Pollinator Resources

Wet-mesic deciduous forests on silty or sandy alluvium on level, occasionally flooded sites along medium and large rivers in the northern half of Minnesota.

Examples of insect pollinators (and their associated host plants in parentheses) that use FFn57 include:

Bees:

Hylaeus sparsus (Apiaceae)
Andrena melanochroa (Rosaceae)
Perdita swenki (*Solidago*)
Melissodes druriellus (*Solidago*)



Butterflies:

Aglais milberti (*Laporteia canadensis*)
Argynnис atlantis (*Viola*)
Polygonia progne (*Ribes*)

Moths:

Plagodis kuetzingi (*Fraxinus nigra*)
Calyptra canadensis (*Thalictrum dasycarpum*)
Caloptilia fraxinella (*Fraxinus pennsylvanica*)

Perdita swenki (shown here on *Liatris*) uses *Solidago* (goldenrod) species as a host plant.

Photo: Heather Holm

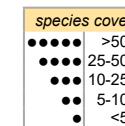


Plagodis kuetzingi (purple plagodis) uses *Fraxinus nigra* (black ash) as a host plant. Photo: Kyle Johnson

FFn57 Northern Terrace Forest

Pollinator Resources Table

FFn57 Class Factsheet. Based on 48 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wood nettle (<i>Laportea canadensis</i>)	81	•••	UNK	Perennial	Present	wind	Generalist	0
Ostrich fern (<i>Matteuccia struthiopteris</i>)	79	••••	SC	Perennial	Present	wind, water	Generalist	0
Erect, Smooth, or Illinois carion-flower*	75	•	D	Perennial	Present	insects	Somewhat specific insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	73	•	UNK	Perennial	Present	insects	Generalist	3
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	67	•	D	Perennial	Present	wind	Generalist	0
Sensitive fern (<i>Onoclea sensibilis</i>)	63	••	SC	Perennial	Present	wind, water	Generalist	0
Side-flowering aster (<i>Aster lateriflorus</i>)	52	•	SI	Perennial	Present	insects	Generalist	4
Rugulose or Yellow violet**	50	•	Varies	Perennial	Present	insects	Varies	Varies
Canada mayflower (<i>Maianthemum canadense</i>)	50	•	SI	Perennial	Present	insects	Early spring insect	5
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	50	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	48	•	D	Perennial	Absent	insects	Generalist	5
Early meadow-rue (<i>Thalictrum dioicum</i>)	48	•	SI	Perennial	Present	wind	Generalist	0
Pale bellwort (<i>Uvularia sessilifolia</i>)	42	•	SI	Perennial	Present	insects	Early spring insect	5
Spotted water hemlock (<i>Cicuta maculata</i>)	40	•	SC	Perennial	Present	insects	Generalist	2
Tall coneflower (<i>Rudbeckia laciniata</i>)	35	••	SC	Perennial	Present	insects	Generalist	2
Field horsetail (<i>Equisetum arvense</i>)	35	•	SC	Perennial	Present	wind, water	Generalist	0
Giant goldenrod (<i>Solidago gigantea</i>)	35	•	GM	Perennial	Present	insects	Generalist	4
Hog peanut (<i>Amphicarpa bracteata</i>)	33	•	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	33	•	SC	Perennial	Present	insects	Generalist	2
Lady fern (<i>Athyrium filix-femina</i>)	31	••	SC	Perennial	Present	wind, water	Generalist	0
Maryland black snakeroot (<i>Sanicula marilandica</i>)	31	•	UNK	Perennial	Absent	insects	Generalist	4
Northern blue flag (<i>Iris versicolor</i>)	31	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Honewort (<i>Cryptotaenia canadensis</i>)	29	•••	SC	Perennial	Present	insects	Generalist	2
Dwarf raspberry (<i>Rubus pubescens</i>)	29	•	SC	Perennial	Present	insects	Generalist	2
Fringed loosestrife (<i>Lysimachia ciliata</i>)	29	•	SI	Perennial	Present	insects	Generalist	4
Nodding trillium (<i>Trillium cernuum</i>)	29	•	A	Perennial	Present	insects	Early spring insect	3
Red baneberry (<i>Actaea rubra</i>)	29	•	SC	Perennial	Present	insects	Early spring insect	3
Starry false Solomon's seal (<i>Smilacina stellata</i>)	27	•	UNK	Perennial	Present	insects	Early spring insect	4
Meadow horsetail (<i>Equisetum pratense</i>)	25	••	SC	Perennial	Present	wind, water	Generalist	0
Northern bugleweed (<i>Lycopus uniflorus</i>)	25	•	SC	Perennial	Weakly	insects	Generalist	2
Canada anemone (<i>Anemone canadensis</i>)	25	•	SI	Perennial	Present	insects	Generalist	4
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	23	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Wild ginger (<i>Asarum canadense</i>)	19	••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Grasses and Sedges								
Virginia wild rye (<i>Elymus virginicus</i>)	65	••	SC	Perennial	Absent	wind	Generalist	0
Starry sedge (<i>Carex rosea</i>)	50	••	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	48	••	UNK	Perennial	Present	wind	Generalist	0

Black ash	56	••	D	Perennial	Absent	wind	Generalist	0
Basswood	27	•	SI	Perennial	Absent	insects	Generalist	5
Green ash	54	•••	D	Perennial	UNK	wind	Generalist	0
Silver maple	19	•	usually D	Perennial	Absent	insects, wind	Generalist	4
Bur oak	52	•	SI	Perennial	Present	wind	Generalist	0
American elm	50	•	Di	Perennial	Absent	wind	Generalist	0

FFn67 Northern Floodplain Forest

Pollinator Resources

Deciduous riparian forests on sandy or silty alluvium on low, level, annually flooded sites along medium and large rivers in central and northern Minnesota. Characterized by pools and evidence of recent flooding, such as rows and piles of debris, ice scars on trees, and freshly deposited silt and sand.

Examples of insect pollinators (and their associated host plants in parentheses) that use FFn67 include:

Bees:

Macropis nuda (*Lysimachia*)
Andrena persimulata (*Cornus* [*Swida*])
Colletes americanus (*Solidago*)



Colletes americanus (American Cellophane Bee) uses *Solidago* (goldenrod) species as a host plant. Photo: Michael Veit

Moths:

Papaipema furcata (*Fraxinus pennsylvanica*)
Ceratomia amyntor (*Ulmus americana*)
Macronoctua onusta (*Iris versicolor*)
Loscopia velata (*Carex tenera*)

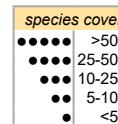


Tharsalea hyllus (bronze copper) uses *Polygonum* (knotweed, smartweed) species as a host plant. Photo: Bob Dunlap

FFn67 Northern Floodplain Forest

Pollinator Resources Table

[FFn67 Class Factsheet](#). Based on 19 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wood nettle (<i>Laportea canadensis</i>)	74	•••	UNK	Perennial	Present	wind	Generalist	0
Sensitive fern (<i>Onoclea sensibilis</i>)	58	•	SC	Perennial	Present	wind, water	Generalist	0
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	53	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Fringed loosestrife (<i>Lysimachia ciliata</i>)	47	•	SI	Perennial	Present	insects	Generalist	4
Northern blue flag (<i>Iris versicolor</i>)	42	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Side-flowering aster (<i>Aster lateriflorus</i>)	42	•	SI	Perennial	Present	insects	Generalist	4
Clearweed (<i>Pilea</i> spp.)	42	••	sometimes D	Annual	Absent	wind	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	37	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Dotted smartweed (<i>Polygonum punctatum</i>)	37	••	UNK	Annual or perennial	Present	insects	Generalist	5
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	37	•	Varies	Varies	Varies	insects	Generalist	Varies
Three-cleft bedstraw (<i>Galium trifidum</i>)	37	•	UNK	Perennial	Present	insects	Generalist	3
Common mint (<i>Mentha arvensis</i>)	32	•	SC	Perennial	Present	insects	Generalist	2
Water parsnip (<i>Sium suave</i>)	32	•	Pa	Perennial	Absent	insects	Generalist	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	32	•	SC	Perennial	Weakly	insects	Generalist	2
Yellow loosestrife (<i>Lysimachia terrestris</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
False nettle (<i>Boehmeria cylindrica</i>)	26	••	D	Perennial	Present	wind	Generalist	0
Canada anemone (<i>Anemone canadensis</i>)	26	•	SI	Perennial	Present	insects	Generalist	4
Narrow-leaved hedge nettle (<i>Stachys tenuifolia</i>)	26	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Spotted water hemlock (<i>Cicuta maculata</i>)	26	•	SC	Perennial	Present	insects	Generalist	2
Ontario aster (<i>Aster ontarionis</i>)	26	•	UNK	Perennial	Present	insects	Generalist	3
Bristly buttercup (<i>Ranunculus pensylvanicus</i>)	21	•	SI	Perennial	Present	insects	Generalist	4
Erect, Smooth, or Illinois carion-flower*	21	•	D	Perennial	Present	insects	Somewhat specific insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	21	•	UNK	Perennial	Present	insects	Generalist	3
Stinging nettle (<i>Urtica dioica</i>)	21	•••	D	Perennial	Present	wind	Generalist	0
Obedient plant (<i>Physostegia virginiana</i>)	21	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Wild cucumber (<i>Echinocystis lobata</i>)	21	•	UNK	Annual	Absent	insects	Generalist	5
Eastern panicled aster (<i>Aster lanceolatus</i>)	16	•	SI	Perennial	Present	insects	Generalist	4
Spinulose shield fern or Glandular wood fern**	16	•	SC	Perennial	Present	wind, water	Generalist	0
Early meadow-rue (<i>Thalictrum dioicum</i>)	16	•	SI	Perennial	Present	wind	Generalist	0
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	16	•	D	Perennial	Present	wind	Generalist	0
Marsh skullcap (<i>Scutellaria galericulata</i>)	16	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Giant goldenrod (<i>Solidago gigantea</i>)	16	•	GM	Perennial	Present	insects	Generalist	4
Halberd-leaved tearthumb (<i>Polygonum arifolium</i>)	16	•	UNK	Annual	Absent	insects	Generalist	5
Blue monkey flower (<i>Mimulus ringens</i>)	16	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Small bedstraw (<i>Galium tinctorium</i>)	16	•	UNK	Perennial	Present	insects	Generalist	3
Virginia bugleweed (<i>Lycopus virginicus</i>)	16	••	SC	Perennial	Weakly	insects	Generalist	2

Forbs cont.

Cut-leaved bugleweed (<i>Lycopus americanus</i>)	16	•	SC	Perennial	Weakly	insects	Generalist	2
Hispid buttercup (<i>Ranunculus hispidus</i>)	16	•	SI	Perennial	Present	insects	Early spring insect	5
Ditch stonecrop (<i>Penthorum sedoides</i>)	16	•	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Virginia wild rye (<i>Elymus virginicus</i>)	58	•••	SC	Perennial	Absent	wind	Generalist	0
Retrorse sedge (<i>Carex retrorsa</i>)	53	•	UNK	Perennial	Present	wind	Generalist	0
Tuckerman's sedge (<i>Carex tuckermanii</i>)	47	•••	UNK	Perennial	Present	wind	Generalist	0
Hop umbrella sedge (<i>Carex lupulina</i>)	42	••	UNK	Perennial	Present	wind	Generalist	0
Stout woodreed (<i>Cinna arundinacea</i>)	32	•	UNK	Perennial	Weakly	wind	Generalist	0
Fringe sedge (<i>Carex crinita</i>)	32	•	UNK	Perennial	Present	wind	Generalist	0
Projecting sedge (<i>Carex projecta</i>)	26	••	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	21	••	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	21	•	A	Perennial	Present	wind	Generalist	0
White grass (<i>Leersia virginica</i>)	16	•	UNK	Perennial	Present	wind	Generalist	0
Marsh straw sedge (<i>Carex tenera</i>)	16	••	UNK	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i>)	16	•	UNK	Perennial	Present	wind	Generalist	0
Foxtail sedge (<i>Carex alopecoidea</i>)	16	••	UNK	Perennial	Present	wind	Generalist	0
Northern clustered sedge (<i>Carex arcta</i>)	16	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Wild grape (<i>Vitis riparia</i>)	21	•	D	Perennial	Present	insects	Generalist	4
Shrubs								
Gray dogwood (<i>Cornus racemosa</i>)	26	•	UNK	Perennial	Present	insects	Generalist	3
Wild black currant (<i>Ribes americanum</i>)	26	•	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Silver maple	89	•••••	usually D	Perennial	Absent	insects,	Generalist	4
Green ash	53	••••	D	Perennial	UNK	wind	Generalist	0
Black ash	32	•••	D	Perennial	Absent	wind	Generalist	0
American elm	16	•••	Di	Perennial	Absent	wind	Generalist	0
Bur oak	11	•	SI	Perennial	Present	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Tree Subcanopy								
Silver maple	68	••	usually D	Perennial	Absent	insects,	Generalist	4
Green ash	53	••	D	Perennial	UNK	wind	Generalist	0
Black ash	32	••	D	Perennial	Absent	wind	Generalist	0
American elm	47	••	Di	Perennial	Absent	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Tree Shrub Layer								
Silver maple	79	••	usually D	Perennial	Absent	insects,	Generalist	4
Black ash	32	••	D	Perennial	Absent	wind	Generalist	0

American elm	58	•	Di	Perennial	Absent	wind	Generalist	0
Bur oak	26	•	SI	Perennial	Present	wind	Generalist	0
Box elder	38	•	D	Perennial	Absent	insects	Early spring insect	6

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*); Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*).

FFs59 Southern Terrace Forest

Pollinator Resources

Wet-mesic deciduous forests on silty or sandy alluvium on level, occasionally flooded sites along small streams to large rivers in the southern half of Minnesota.

Examples of insect pollinators (and their associated host plants in parentheses) that use FFs59 include:

Bees:

Andrena geranii (*Hydrophyllum virginianum*)

Andrena distans (*Geranium maculatum*)

Andrena rudbeckiae (*Rudbeckia*)

Butterflies:

Aglais milberti (*Laportea canadensis*)

Asterocampa celtis (*Celtis occidentalis*)

Boloria bellona (*Viola*)

Moths:

Libytheana carinenta (*Celtis occidentalis*)

Rifargia subrotata (*Celtis occidentalis*)

Phylloconistis vitifoliella (*Vitis riparia*)

Achatodes zae (*Sambucus canadensis*)



Andrena geranii (waterleaf mining bee) uses *Hydrophyllum virginianum* (Virginia waterleaf) as a host plant. Photo: Heather Holm

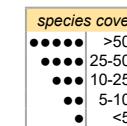


Boloria bellona (meadow fritillary) uses *Viola* (violet) species as a host plant. Photo: Bob Dunlap

FFs59 Southern Terrace Forest

Pollinator Resources Table

FFs59 Class Factsheet. Based on 43 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wood nettle (<i>Laportea canadensis</i>)	98	••••	UNK	Perennial	Present	wind	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	77	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	70	•••	SC	Perennial	Present	insects	Somewhat specific insect	3
Tall coneflower (<i>Rudbeckia laciniata</i>)	67	••	SC	Perennial	Present	insects	Generalist	2
Stinging nettle (<i>Urtica dioica</i>)	58	•	D	Perennial	Present	wind	Generalist	0
Cleavers (<i>Galium aparine</i>)	51	•••	SC	Annual	Absent	insects	Early spring insect	5
Honewort (<i>Cryptotaenia canadensis</i>)	49	••	SC	Perennial	Present	insects	Generalist	2
White avens (<i>Geum canadense</i>)	40	•	UNK	Perennial	Present	insects	Generalist	3
Aniseroott (<i>Osmorhiza longistylis</i>)	37	••	D	Perennial	Absent	insects	Generalist	5
Blue phlox (<i>Phlox divaricata</i>)	37	•	SI	Perennial	Weakly	insects	Early spring insect, Somewhat specific insect	5
Virginia knotweed (<i>Polygonum virginianum</i>)	35	••	UNK	Perennial	Present	insects	Generalist	3
Stemless blue violets (<i>Viola</i> spp.)*	35	••	Varies	Perennial	Present	insects	Varies	Varies
Erect, Smooth, or Illinois carrion-flower**	35	•	D	Perennial	Present	insects	Somewhat specific insect	5
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	33	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Rugulose or Yellow violet***	30	•	Varies	Perennial	Present	insects	Varies	Varies
False rue anemone (<i>Enemion biternatum</i>)	30	••	SC	Perennial	Weakly	insects	Early spring insect	3
Clearweed (<i>Pilea</i> spp.)	28	••	sometimes D	Annual	Absent	wind	Generalist	0
Hispid buttercup (<i>Ranunculus hispidus</i>)	28	••	SI	Perennial	Present	insects	Early spring insect	5
Common enchanter's nightshade (<i>Circaeaa lutetiana</i>)	26	•	SC	Perennial	Present	insects	Generalist	2
Ontario aster (<i>Aster ontarionis</i>)	26	•	UNK	Perennial	Present	insects	Generalist	3
Gregarious black snakeroot (<i>Sanicula gregaria</i>)	23	•	UNK	Perennial	Absent	insects	Generalist	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	23	•	UNK	Perennial	Absent	insects	Generalist	4
Cow parsnip (<i>Heracleum lanatum</i>)	23	••	UNK	Perennial	Absent	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	21	•	UNK	Perennial	Present	insects	Generalist	3
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	19	•••	D	Perennial	Absent	insects	Generalist	5
Hog peanut (<i>Amphicarpea bracteata</i>)	19	•	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Woodmint (<i>Blephilia hirsuta</i>)	16	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Early meadow-rue (<i>Thalictrum dioicum</i>)	16	•	SI	Perennial	Present	wind	Generalist	0
Starry false Solomon's seal (<i>Smilacina stellata</i>)	16	•	UNK	Perennial	Present	insects	Early spring insect	4
Virginia bluebells (<i>Mertensia virginica</i>)	16	•••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Ostrich fern (<i>Matteuccia struthiopteris</i>)	16	•••	SC	Perennial	Present	wind, water	Generalist	0
Wild geranium (<i>Geranium maculatum</i>)	16	•	SC	Perennial	Present	insects	Early spring insect	3
Grasses and Sedges								
Virginia wild rye (<i>Elymus virginicus</i>)	44	•	SC	Perennial	Absent	wind	Generalist	0
Ambiguous sedge (<i>Carex amphibola</i>)	30	•	UNK	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	30	•	UNK	Perennial	Present	wind	Generalist	0
Nodding fescue (<i>Festuca subverticillata</i>)	28	•	UNK	Perennial	Absent	wind	Generalist	0
White grass (<i>Leersia virginica</i>)	23	•	UNK	Perennial	Present	wind	Generalist	0

Starry sedge (<i>Carex rosea</i>)	14	•	UNK	Perennial	Present	wind	Generalist	0
Gray's sedge (<i>Carex grayi</i>)	12	•	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	53	•	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	53	•	D	Perennial	Present	insects	Generalist	4
Greenbrier (<i>Smilax tamnoides</i>)	47	•	D	Perennial	Present	insects	Somewhat specific insect	5
Canada moonseed (<i>Menispermum canadense</i>)	33	•	D	Perennial	Present	insects	Generalist	4
Shrubs								
Missouri gooseberry (<i>Ribes missouriense</i>)	53	•	SI	Perennial	Present	insects	Generalist	4
Prickly ash (<i>Zanthoxylum americanum</i>)	33	••	D	Perennial	Present	insects	Generalist	4
Common elder (<i>Sambucus canadensis</i>)	33	•	UNK	Perennial	Present	insects	Generalist	3
Chokecherry (<i>Prunus virginiana</i>)	33	•••	SI	Perennial	Present	insects	Early spring insect	5
Poison ivy (<i>Toxicodendron rydbergii</i>)	23	••	D	Perennial	Present	insects	Generalist	4
Nannyberry (<i>Viburnum lentago</i>)	16	••	SI	Perennial	Present	insects	Generalist	4
Prickly gooseberry (<i>Ribes cynosbati</i>)	16	•	SI	Perennial	Present	insects	Generalist	4
Hawthorn (<i>Crataegus</i> spp.)	14	••	Varies	Perennial	Absent	insects	Early spring insect	Varies
Tree Canopy								
American elm	65	•••	Di	Perennial	Absent	wind	Generalist	0
Box elder	56	•••	D	Perennial	Absent	insects	Early spring insect	6
Silver maple	51	•••	usually D	Perennial	Absent	insects,	Generalist	4
Green ash	44	••	D	Perennial	UNK	wind	Generalist	0
Hackberry	40	•••	SC	Perennial	Absent	wind	Generalist	0
Basswood	37	•••	SI	Perennial	Absent	insects	Generalist	5
Cottonwood	30	••••	D	Perennial	Present	wind	Generalist	0
Black ash	28	•••	D	Perennial	Absent	wind	Generalist	0
Red elm	26	•••	Di	Perennial	Absent	wind	Generalist	0
Swamp white oak	19	••••	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	14	•••	UNK	Perennial	Present	wind	Generalist	0
Black walnut	14	••••	SI/sc	Perennial	UNK	wind	Generalist	0
Tree Subcanopy								
American elm	67	•••	Di	Perennial	Absent	wind	Generalist	0
Box elder	53	•••	D	Perennial	Absent	insects	Early spring insect	6
Silver maple	21	••	usually D	Perennial	Absent	insects,	Generalist	4
Green ash	40	••	D	Perennial	UNK	wind	Generalist	0
Hackberry	58	••	SC	Perennial	Absent	wind	Generalist	0
Basswood	26	•	SI	Perennial	Absent	insects	Generalist	5
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Black ash	19	••	D	Perennial	Absent	wind	Generalist	0
Red elm	12	•••	Di	Perennial	Absent	wind	Generalist	0
Swamp white oak	9	••	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	9	•••	UNK	Perennial	Present	wind	Generalist	0

Black walnut	-	-	SI/sc	Perennial	UNK	wind	Generalist	0
Tree shrub Layer								
American elm	44	●	Di	Perennial	Absent	wind	Generalist	0
Box elder	26	●	D	Perennial	Absent	insects	Early spring insect	6
Silver maple	9	●	usually D	Perennial	Absent	insects,	Generalist	4
Green ash	30	●	D	Perennial	UNK	wind	Generalist	0
Hackberry	33	●	SC	Perennial	Absent	wind	Generalist	0
Basswood	12	●	SI	Perennial	Absent	insects	Generalist	5
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Black ash	19	●	D	Perennial	Absent	wind	Generalist	0
Red elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Swamp white oak	16	●	SI	Perennial	Present	wind	Generalist	0
Bitternut hickory	14	●	UNK	Perennial	Present	wind	Generalist	0
Black walnut	-	-	SI/sc	Perennial	UNK	wind	Generalist	0

* Stemless blue violets (*Viola sororia*, *V. nephrophylla*, and similar *Viola* spp.); ** Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*); ***Rugulose or Yellow violet (*Viola canadensis* or *V. pubescens*).

FFs68 Southern Floodplain Forest

Pollinator Resources

Deciduous riparian forests on sandy or silty alluvium on low, level, annually flooded sites along medium and large rivers in the southern half of Minnesota. Community is characterized by evidence of recent flooding such as rows and piles of debris, ice scars on trees, high-water channels, and freshly deposited silt and sand.

Examples of insect pollinators (and their associated host plants in parentheses) that use FFs68 include:

Bees:

Megachile campanulae (*Campanula americana*)
Protandrena albitarsis (*Rudbeckia*)
Melissodes dentiventris (*Sympyotrichum*)
Andrena mariae (*Salix*)

Butterflies:

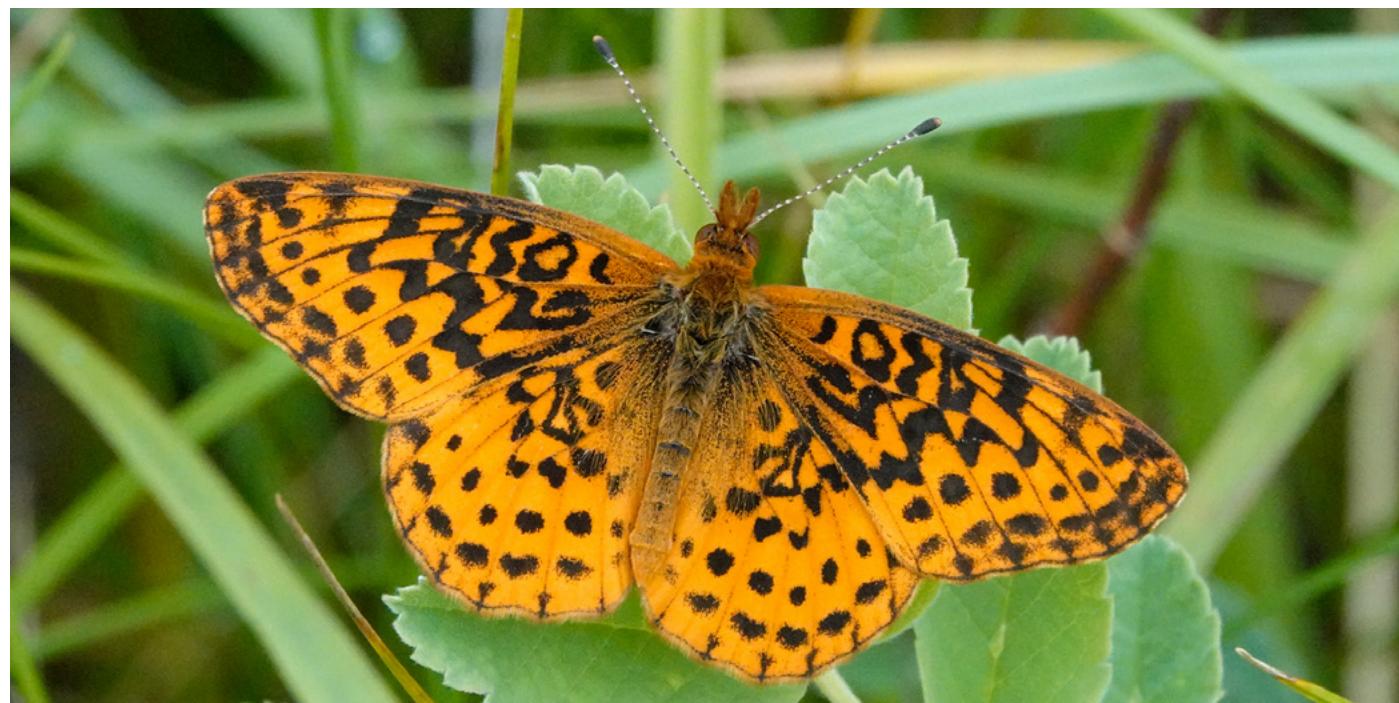
Aglais milberti (*Laportea canadensis*, *Urtica dioica*)
Satyrium acadica (*Salix*)
Argynnis cybele (*Viola*)

Moths:

Ceratomia amyntor (*Ulmus americana*)
Caloptilia fraxinella (*Fraxinus pennsylvanica*)
Schinia trifascia (*Sympyotrichum lanceolatum*)



Megachile campanulae (bellflower resin bee) uses *Campanula* (harebell) species as a host plant.
Photo: Heather Holm

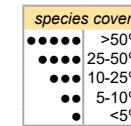


Aglais milberti (Milbert's tortoiseshell) uses *Laportea canadensis* (Canada nettle) and *Urtica dioica* (stinging nettle) as host plants. Photo: Bob Dunlap

FFs68 Southern Floodplain Forest

Pollinator Resources Table

[FFs68 Class Factsheet](#). Based on 27 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Wood nettle (<i>Laportea canadensis</i>)	93	••••	UNK	Perennial	Present	wind	Generalist	0
Ontario aster (<i>Aster ontarionis</i>)	56	•	UNK	Perennial	Present	insects	Generalist	3
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	56	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Clearweed (<i>Pilea</i> spp.)	52	•••	sometimes D	Annual	Absent	wind	Generalist	0
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	44	•	Varies	Varies	Varies	insects	Generalist	Varies
Touch-me-not (<i>Impatiens</i> spp.)	41	•	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Tall coneflower (<i>Rudbeckia laciniata</i>)	41	••	SC	Perennial	Present	insects	Generalist	2
Stinging nettle (<i>Urtica dioica</i>)	37	•	D	Perennial	Present	wind	Generalist	0
Narrow-leaved hedge nettle (<i>Stachys tenuifolia</i>)	33	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Honewort (<i>Cryptotaenia canadensis</i>)	26	•	SC	Perennial	Present	insects	Generalist	2
False nettle (<i>Boehmeria cylindrica</i>)	26	••	D	Perennial	Present	wind	Generalist	0
Wild cucumber (<i>Echinocystis lobata</i>)	19	•	UNK	Annual	Absent	insects	Generalist	5
Nodding or Virginia stickseed (<i>Hackelia deflexa</i> or <i>H. virginiana</i>)	19	•	UNK	Varies	Absent	insects	Generalist	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	19	•	SC	Perennial	Weakly	insects	Generalist	2
Side-flowering aster (<i>Aster lateriflorus</i>)	15	•	SI	Perennial	Present	insects	Generalist	4
Dodder (<i>Cuscuta</i> spp.)	15	•	Varies	Varies	Absent	insects	Generalist	Varies
Tall bellflower (<i>Campanula americana</i>)	15	•	SC	Annual or biennial	Absent	insects	Somewhat specific insect	5
Virginia knotweed (<i>Polygonum virginianum</i>)	15	••	UNK	Perennial	Present	insects	Generalist	3
Germander (<i>Teucrium canadense</i>)	15	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Bur cucumber (<i>Sicyos angulatus</i>)	15	••	SI	Annual	Absent	insects	Generalist	6
Woundwort (<i>Stachys palustris</i>)	15	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	15	•	SC	Perennial	Weakly	insects	Generalist	2
Eastern panicled aster (<i>Aster lanceolatus</i>)	11	••••	SI	Perennial	Present	insects	Generalist	4
Green dragon (<i>Arisaema dracontium</i>)	11	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
White snakeroot (<i>Eupatorium rugosum</i>)	11	•	UNK	Perennial	Present	insects	Generalist	3
Stemless blue violets (<i>Viola sororia</i> and similar <i>Viola</i> spp.)	11	•	Varies	Perennial	Present	insects	Varies	Varies
Erect, Smooth, or Illinois carrion-flower (<i>Smilax</i> spp.)*	11	•	D	Perennial	Present	insects	Somewhat specific insect	5
Common mint (<i>Mentha arvensis</i>)	11	•	SC	Perennial	Present	insects	Generalist	2
Three-seeded mercury (<i>Acalypha rhomboidea</i>)	11	•	UNK	Annual	Absent	wind	Generalist	0
Southern blue flag (<i>Iris virginica</i>)	11	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Grasses and Sedges								
Virginia wild rye (<i>Elymus virginicus</i>)	52	••	SC	Perennial	Absent	wind	Generalist	0
White grass (<i>Leersia virginica</i>)	44	•••	UNK	Perennial	Present	wind	Generalist	0
Rice cut grass (<i>Leersia oryzoides</i>)	30	••	SC	Perennial	Present	wind	Generalist	0
Hop umbrella sedge (<i>Carex lupulina</i>)	22	••	UNK	Perennial	Present	wind	Generalist	0
Cattail sedge (<i>Carex typhina</i>)	15	•••	UNK	Perennial	Present	wind	Generalist	0
Ambiguous sedge (<i>Carex amphibola</i>)	15	••	UNK	Perennial	Present	wind	Generalist	0

Bladder sedge (<i>Carex intumescens</i>)	11	•	UNK	Perennial	Present	wind	Generalist	0
Stout woodreed (<i>Cinna arundinacea</i>)	11	•	UNK	Perennial	Weakly	wind	Generalist	0
Gray's sedge (<i>Carex grayi</i>)	11	••	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Wild grape (<i>Vitis riparia</i>)	81	•	D	Perennial	Present	insects	Generalist	4
Canada moonseed (<i>Menispermum canadense</i>)	56	•	D	Perennial	Present	insects	Generalist	4
Greenbrier (<i>Smilax tamnoides</i>)	33	•	D	Perennial	Present	insects	Somewhat specific insect	5
Virginia creeper (<i>Parthenocissus</i> spp.)	26	•	SC	Perennial	Present	insects	Generalist	2
Climbing poison ivy (<i>Toxicodendron rydbergii</i>)*	*	*	D	Perennial	Present	insects	Generalist	4
Shrubs								
Climbing poison ivy (<i>Toxicodendron rydbergii</i>)	33	••	D	Perennial	Present	insects	Generalist	4
Black willow (<i>Salix nigra</i>)	11	••••	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Silver maple	96	•••••	usually D	Perennial	Absent	insects, wind	Generalist	4
Green ash	67	•••	D	Perennial	UNK	wind	Generalist	0
American elm	41	••	Di	Perennial	Absent	wind	Generalist	0
Cottonwood	30	••••	D	Perennial	Present	wind	Generalist	0
Hackberry	22	•	SC	Perennial	Absent	wind	Generalist	0
Box elder	11	•••	D	Perennial	Absent	insects	Early spring insect	6
Swamp white oak	11	•••	SI	Perennial	Present	wind	Generalist	0
Red elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Silver maple	56	•••	usually D	Perennial	Absent	insects, wind	Generalist	4
Green ash	48	••	D	Perennial	UNK	wind	Generalist	0
American elm	56	•••	Di	Perennial	Absent	wind	Generalist	0
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Hackberry	19	••	SC	Perennial	Absent	wind	Generalist	0
Box elder	22	••	D	Perennial	Absent	insects	Early spring insect	6
Swamp white oak	-	-	SI	Perennial	Present	wind	Generalist	0
Red elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Silver maple	63	•••	usually D	Perennial	Absent	insects, wind	Generalist	4
Green ash	74	•	D	Perennial	UNK	wind	Generalist	0
American elm	56	•	Di	Perennial	Absent	wind	Generalist	0
Cottonwood	-	-	D	Perennial	Present	wind	Generalist	0
Hackberry	33	•	SC	Perennial	Absent	wind	Generalist	0
Box elder	22	•	D	Perennial	Absent	insects	Early spring insect	6
Swamp white oak	-	-	SI	Perennial	Present	wind	Generalist	0
Red elm	26	•	Di	Perennial	Absent	wind	Generalist	0

* Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*); Climbing poison ivy is important in both the shrub and climbing plant layers, but all records from plot samples were universally assigned to the shrub layer.

WFn53 Northern Wet Cedar Forest

Pollinator Resources

Wet conifer or conifer-hardwood forests on muck or peat soils. Typically present in settings where saturated soils are present through most of the growing season such as depressions; low, level terrain along lakes, rivers, or wetlands; and gently sloping upland drains.

Examples of insect pollinators (and their associated host plants in parentheses) that use WFn53 include:

Bees:

Andrena melanochroa (Rosaceae)
Hylaeus sparsus (Apiaceae)
Melissodes druriellus (*Sympphyotrichum*)



Butterflies:

Euphyes dion (*Carex*)
Polygonia progne (*Ribes*)
Satyrium titus (*Prunus*)

Moths:

Lithophane patefacta (*Acer rubrum*)
Sphinx canadensis (*Fraxinus nigra*)
Amphipyra pyramidoides (*Corylus cornuta*)
Ceratomia amyntor (*Ulmus americana*)

Melissodes druriellus (Drury's longhorn bee) uses *Sympphyotrichum* (American aster) species as a host plant. Photo: Heather Holm

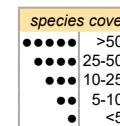


Lithophane patefacta (dimorphic pinion) uses *Acer rubrum* (red maple) as a host plant. Photo: Kyle Johnson

WFn53 Northern Wet Cedar Forest

Pollinator Resources Table

WFn53 Class Factsheet. Based on 102 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Dwarf raspberry (<i>Rubus pubescens</i>)	95	●●●	SC	Perennial	Present	insects	Generalist	2
Starflower (<i>Trifolialis borealis</i>)	93	●	SI/sc	Perennial	Present	insects	Generalist	3
Bunchberry (<i>Cornus canadensis</i>)	91	●	SI	Perennial	Present	insects	Generalist	4
Naked miterwort (<i>Mitella nuda</i>)	91	●●	UNK	Perennial	Present	insects	Early spring insect	4
Common oak fern (<i>Gymnocarpium dryopteris</i>)	84	●	SC	Perennial	Present	wind, water	Generalist	0
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	82	●●	D	Perennial	Present	insects	Generalist	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	82	●	UNK	Perennial	Present	insects	Generalist	3
Goldthread (<i>Coptis trifolia</i>)	82	●●	UNK	Perennial	Present	insects	Early spring insect	4
Bluebead lily (<i>Clintonia borealis</i>)	80	●	SI	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	78	●	SI	Perennial	Present	insects	Early spring insect	5
Lady fern (<i>Athyrium filix-femina</i>)	77	●●	SC	Perennial	Present	wind, water	Generalist	0
Alpine enchanter's nightshade (<i>Circaeа alpina</i>)	72	●	SC	Perennial	Present	insects	Generalist	2
Spinulose shield fern or Glandular wood fern (<i>Dryopteris spp.</i>)*	61	●	SC	Perennial	Present	wind, water	Generalist	0
Twinsflower (<i>Linnaea borealis</i>)	58	●	SC	Perennial	Present	insects	Generalist	2
Common strawberry (<i>Fragaria virginiana</i>)	53	●	SC	Perennial	Present	insects	Early spring insect	3
Large-leaved aster (<i>Aster macrophyllus</i>)	52	●	A	Perennial	Present	insects	Generalist	2
Common marsh marigold (<i>Caltha palustris</i>)	49	●	SI	Perennial	Present	insects	Early spring insect	5
Woodland horsetail (<i>Equisetum sylvaticum</i>)	48	●●	SC	Perennial	Present	wind, water	Generalist	0
Crested fern (<i>Dryopteris cristata</i>)	48	●	SC	Perennial	Present	wind, water	Generalist	0
Rose twistedstalk (<i>Streptopus roseus</i>)	46	●	UNK	Perennial	Present	insects	Early spring insect	4
Touch-me-not (<i>Impatiens spp.</i>)	45	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Rattlesnake fern (<i>Botrychium virginianum</i>)	44	●	SC	Perennial	Present	wind, water	Generalist	0
Palmate sweet coltsfoot (<i>Petasites frigidus</i>)	43	●	D	Perennial	Present	insects	Early spring insect	5
Long beech fern (<i>Phegopteris connectilis</i>)	43	●	SC	Perennial	Present	wind, water	Generalist	0
Nodding trillium (<i>Trillium cernuum</i>)	40	●	A	Perennial	Present	insects	Early spring insect	3
Red-stemmed aster (<i>Aster puniceus</i>)	39	●	SI	Perennial	Present	insects	Generalist	4
Kidney-leaved violet (<i>Viola renifolia</i>)	39	●	CL flowers	Perennial	Present	insects	Early spring insect	4
Red baneberry (<i>Actaea rubra</i>)	36	●	SC	Perennial	Present	insects	Early spring insect	3
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	35	●	UNK	Perennial	Present	insects	Early spring insect	4
Shining firmoss (<i>Huperzia lucidula</i>)	34	●	SC	Perennial	Present	wind, water	Generalist	0
Wood anemone (<i>Anemone quinquefolia</i>)	32	●	UNK	Perennial	Present	insects	Early spring insect	4
Interrupted fern (<i>Osmunda claytoniana</i>)	28	●	SC	Perennial	Present	wind, water	Generalist	0
Northern bugleweed (<i>Lycopus uniflorus</i>)	28	●	SC	Perennial	Weakly	insects	Generalist	2
Cinnamon fern (<i>Osmunda cinnamomea</i>)	23	●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Bristle-stalked sedge (<i>Carex leptalea</i>)	54	●●	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	52	●	UNK	Perennial	Present	wind	Generalist	0

Long-stalked sedge (<i>Carex pedunculata</i>)	48	••	SC	Perennial	Present	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	46	•	UNK	Perennial	Present	wind	Generalist	0
Three-fruited bog sedge (<i>Carex trisperma</i>)	45	••	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	44	•	UNK	Perennial	Present	wind	Generalist	0
Drooping woodreed (<i>Cinna latifolia</i>)	33	•	UNK	Perennial	Weakly	wind	Generalist	0
Drooping wood sedge (<i>Carex arctata</i>)	30	•	SC	Perennial	Present	wind	Generalist	0
Graceful sedge (<i>Carex gracillima</i>)	29	•	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	25	•	A	Perennial	Present	wind	Generalist	0
Low Shrubs								
Creeping snowberry (<i>Gaultheria hispida</i>)	36	•	UNK	Perennial	Present	insects	Generalist	3
Labrador tea (<i>Ledum groenlandicum</i>)	33	•	SC	Perennial	Present	insects	Early spring insect	3
Red raspberry (<i>Rubus idaeus</i>)	31	•	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Fly honeysuckle (<i>Lonicera canadensis</i>)	71	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Speckled alder (<i>Alnus incana</i>)	67	•••	Di	Perennial	Present	wind	Generalist	0
Beaked hazelnut (<i>Corylus cornuta</i>)	63	•	Di	Perennial	Present	wind	Generalist	0
Mountain maple (<i>Acer spicatum</i>)	62	•••	SI	Perennial	Absent	insects	Early spring insect	6
Swamp red currant (<i>Ribes triste</i>)	51	•	SI	Perennial	Present	insects	Generalist	4
Red-osier dogwood (<i>Cornus sericea</i>)	47	•	SI	Perennial	Present	insects	Generalist	4
Juneberries (<i>Amelanchier</i> spp.)	43	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Dwarf alder (<i>Rhamnus alnifolia</i>)	29	•	UNK	Perennial	Absent	insects	Generalist	4
Tree Canopy								
White cedar	83	••••	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	46	••	UNK	Perennial	Absent	wind	Generalist	0
Black ash	42	•••	D	Perennial	Absent	wind	Generalist	0
Paper birch	40	••	Di	Perennial	Present	wind	Generalist	0
Black spruce	24	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	18	••	UNK	Perennial	Absent	wind	Generalist	0
Yellow birch	17	•	Di	Perennial	Present	wind	Generalist	0
Red maple	-	-	D	Perennial	Absent	insects	Early spring insect	6
Mountain ash	-	-	A	Perennial	Weakly	insects	Generalist	2
American elm	-	-	Di	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
White cedar	70	•••	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	59	•••	UNK	Perennial	Absent	wind	Generalist	0
Black ash	57	•••	D	Perennial	Absent	wind	Generalist	0
Paper birch	36	•	Di	Perennial	Present	wind	Generalist	0
Black spruce	17	••	UNK	Perennial	Absent	wind	Generalist	0
White spruce	17	•	UNK	Perennial	Absent	wind	Generalist	0
Yellow birch	25	••	Di	Perennial	Present	wind	Generalist	0

Red maple	13	●	D	Perennial	Absent	insects	Early spring insect	6
Mountain ash	11	●	A	Perennial	Weakly	insects	Generalist	2
American elm	9	●	Di	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
White cedar	70	●	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	80	●●	UNK	Perennial	Absent	wind	Generalist	0
Black ash	75	●●	D	Perennial	Absent	wind	Generalist	0
Paper birch	39	●	Di	Perennial	Present	wind	Generalist	0
Black spruce	19	●	UNK	Perennial	Absent	wind	Generalist	0
White spruce	29	●	UNK	Perennial	Absent	wind	Generalist	0
Yellow birch	28	●	Di	Perennial	Present	wind	Generalist	0
Red maple	50	●	D	Perennial	Absent	insects	Early spring insect	6
Mountain ash	39	●	A	Perennial	Weakly	insects	Generalist	2
American elm	23	●	Di	Perennial	Absent	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

WFn55 Northern Wet Ash Swamp

Pollinator Resources

Wet conifer or conifer-hardwood forests on muck or peat soils. Typically present in settings where saturated soils are present through most of the growing season such as depressions; low, level terrain along lakes, rivers, or wetlands; and gently sloping upland drains.

Examples of insect pollinators (and their associated host plants in parentheses) that use WFn55 include:

Bees:

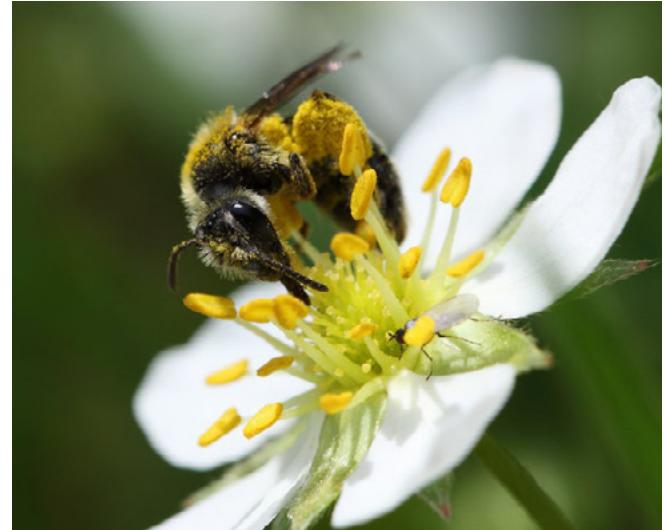
Andrena melanochroa (Rosaceae)
Colletes simulans (Symphyotrichum)
Andrena persimulata (Cornus [Swida])

Butterflies:

Polygonia gracilis (Ribes)
Erebia mancinus (Carex trisperma)
Euphyes dion (Carex)

Moths:

Caloptilia cornusella (Cornus canadensis)
Choristoneura fumiferana (Abies balsamea)
Plagodis kuetzingi (Fraxinus nigra)
Sthenopis argenteomaculatus (Alnus incana)



Andrena melanochroa (rose miner bee) uses species in the Rosaceae (rose) family as a host plant.

Photo: Michael Veit



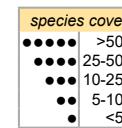
Erebia mancinus (taiga alpine) uses *Carex trisperma* (three-seeded sedge) as a host plant.

Photo: Kyle Johnson

WFn55 Northern Wet Ash Swamp

Pollinator Resources Table

WFn55 Class Factsheet. Based on 90 relevés. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Lady fern (<i>Athyrium filix-femina</i>)	90	●●●	SC	Perennial	Present	wind, water	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	90	●●●	SC	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	76	●	UNK	Perennial	Present	insects	Generalist	3
Touch-me-not (<i>Impatiens spp.</i>)	71	●●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Common strawberry (<i>Fragaria virginiana</i>)	70	●	SC	Perennial	Present	insects	Early spring insect	3
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	70	●	D	Perennial	Present	insects	Generalist	4
Spinulose shield fern or Glandular wood fern (<i>Dryopteris spp.</i>)*	67	●	SC	Perennial	Present	wind, water	Generalist	0
Canada mayflower (<i>Maianthemum canadense</i>)	62	●	SI	Perennial	Present	insects	Early spring insect	5
Alpine enchanter's nightshade (<i>Circaeа alpina</i>)	61	●●	SC	Perennial	Present	insects	Generalist	2
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	61	●	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Naked miterwort (<i>Mitella nuda</i>)	56	●	UNK	Perennial	Present	insects	Early spring insect	4
Wild ginger (<i>Asarum canadense</i>)	56	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Woodland horsetail (<i>Equisetum sylvaticum</i>)	52	●	SC	Perennial	Present	wind, water	Generalist	0
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	51	●	D	Perennial	Absent	insects	Generalist	5
Side-flowering aster (<i>Aster lateriflorus</i>)	48	●	SI	Perennial	Present	insects	Generalist	4
Common oak fern (<i>Gymnocarpium dryopteris</i>)	44	●	SC	Perennial	Present	wind, water	Generalist	0
Rose twistedstalk (<i>Streptopus roseus</i>)	43	●	UNK	Perennial	Present	insects	Early spring insect	4
Starflower (<i>Trientalis borealis</i>)	42	●	SI/sc	Perennial	Present	insects	Generalist	3
Early meadow-rue (<i>Thalictrum dioicum</i>)	41	●	SI	Perennial	Present	wind	Generalist	0
Bluebead lily (<i>Clintonia borealis</i>)	40	●	SI	Perennial	Present	insects	Generalist	4
Sensitive fern (<i>Onoclea sensibilis</i>)	40	●●	SC	Perennial	Present	wind, water	Generalist	0
Red baneberry (<i>Actaea rubra</i>)	39	●	SC	Perennial	Present	insects	Early spring insect	3
Ostrich fern (<i>Matteuccia struthiopteris</i>)	38	●●●	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	38	●●	A	Perennial	Present	insects	Generalist	2
Nodding trillium (<i>Trillium cernuum</i>)	38	●	A	Perennial	Present	insects	Early spring insect	3
Common marsh marigold (<i>Caltha palustris</i>)	37	●	SI	Perennial	Present	insects	Early spring insect	5
Wood anemone (<i>Anemone quinquefolia</i>)	37	●	UNK	Perennial	Present	insects	Early spring insect	4
Northern bugleweed (<i>Lycopodium uniflorus</i>)	37	●	SC	Perennial	Weakly	insects	Generalist	2
Red-stemmed aster (<i>Aster puniceus</i>)	34	●	SI	Perennial	Present	insects	Generalist	4
Spotted water hemlock (<i>Cicuta maculata</i>)	34	●	SC	Perennial	Present	insects	Generalist	2
Flat-topped aster (<i>Aster umbellatus</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Meadow horsetail (<i>Equisetum pratense</i>)	29	●●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Graceful sedge (<i>Carex gracillima</i>)	63	●●	UNK	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	57	●●	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	51	●	UNK	Perennial	Present	wind	Generalist	0
Long-stalked sedge (<i>Carex pedunculata</i>)	37	●●	SC	Perennial	Present	wind	Generalist	0

Bluejoint (<i>Calamagrostis canadensis</i>)	37	••	A	Perennial	Present	wind	Generalist	0
Awl-fruited sedge (<i>Carex stipata</i>)	29	••	UNK	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i> or <i>C. radiata</i>)	29	•	UNK	Perennial	Present	wind	Generalist	0
Drooping woodreed (<i>Cinna latifolia</i>)	28	•	UNK	Perennial	Weakly	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	50	•	SC	Perennial	Present	insects	Generalist	2
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	57	••	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Mountain maple (<i>Acer spicatum</i>)	68	•••	SI	Perennial	Absent	insects	Early spring insect	6
Beaked hazelnut (<i>Corylus cornuta</i>)	67	••	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	52	•	SI	Perennial	Present	insects	Early spring insect	5
Swamp red currant (<i>Ribes triste</i>)	52	•	SI	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	37	•	D	Perennial	Present	insects	Generalist	4
Speckled alder (<i>Alnus incana</i>)	34	••	Di	Perennial	Present	wind	Generalist	0
Swamp gooseberry (<i>Ribes hirtellum</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Black ash	91	••••	D	Perennial	Absent	wind	Generalist	0
Yellow birch	28	•••	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	26	•••	D	Perennial	Present	wind	Generalist	0
Paper birch	26	••	Di	Perennial	Present	wind	Generalist	0
Green ash	22	•••	D	Perennial	UNK	wind	Generalist	0
Basswood	22	••	SI	Perennial	Absent	insects	Generalist	5
Red maple	20	•••	D	Perennial	Absent	insects	Early spring insect	6
White cedar	18	•••	UNK	Perennial	Absent	wind	Generalist	0
Balsam poplar	16	•••	D	Perennial	Present	wind	Generalist	0
American elm	16	••	Di	Perennial	Absent	wind	Generalist	0
Balsam fir	14	•••	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	8	••	SI	Perennial	Present	wind	Generalist	0
Sugar maple	-	-	D	Perennial	Absent	insects	Early spring insect	6
Tree Shrub Layer								
Black ash	87	••	D	Perennial	Absent	wind	Generalist	0
Yellow birch	21	•	Di	Perennial	Present	wind	Generalist	0
Quaking aspen	23	•	D	Perennial	Present	wind	Generalist	0
Paper birch	13	•	Di	Perennial	Present	wind	Generalist	0
Green ash	24	••	D	Perennial	UNK	wind	Generalist	0
Basswood	34	•	SI	Perennial	Absent	insects	Generalist	5
Red maple	48	•	D	Perennial	Absent	insects	Early spring insect	6
White cedar	12	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam poplar	19	•	D	Perennial	Present	wind	Generalist	0
American elm	58	••	Di	Perennial	Absent	wind	Generalist	0

Balsam fir	47	●	UNK	Perennial	Absent	wind	Generalist	0
Bur oak	36	●	SI	Perennial	Present	wind	Generalist	0
Sugar maple	23	●	D	Perennial	Absent	insects	Early spring insect	6

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

WFn64 Northern Very Wet Ash Swamp

Pollinator Resources

Wet hardwood or hardwood-conifer forests on peaty soils in small closed depressions or around the edges of large peatlands. Typically with standing water present throughout spring and summer.

Examples of insect pollinators (and their associated host plants in parentheses) that use WFn64 include:

Bees:

Andrena melanochroa (Rosaceae)
Andrena hirticincta (*Symphyotrichum*)
Colletes simulans (*Solidago*)

Butterflies:

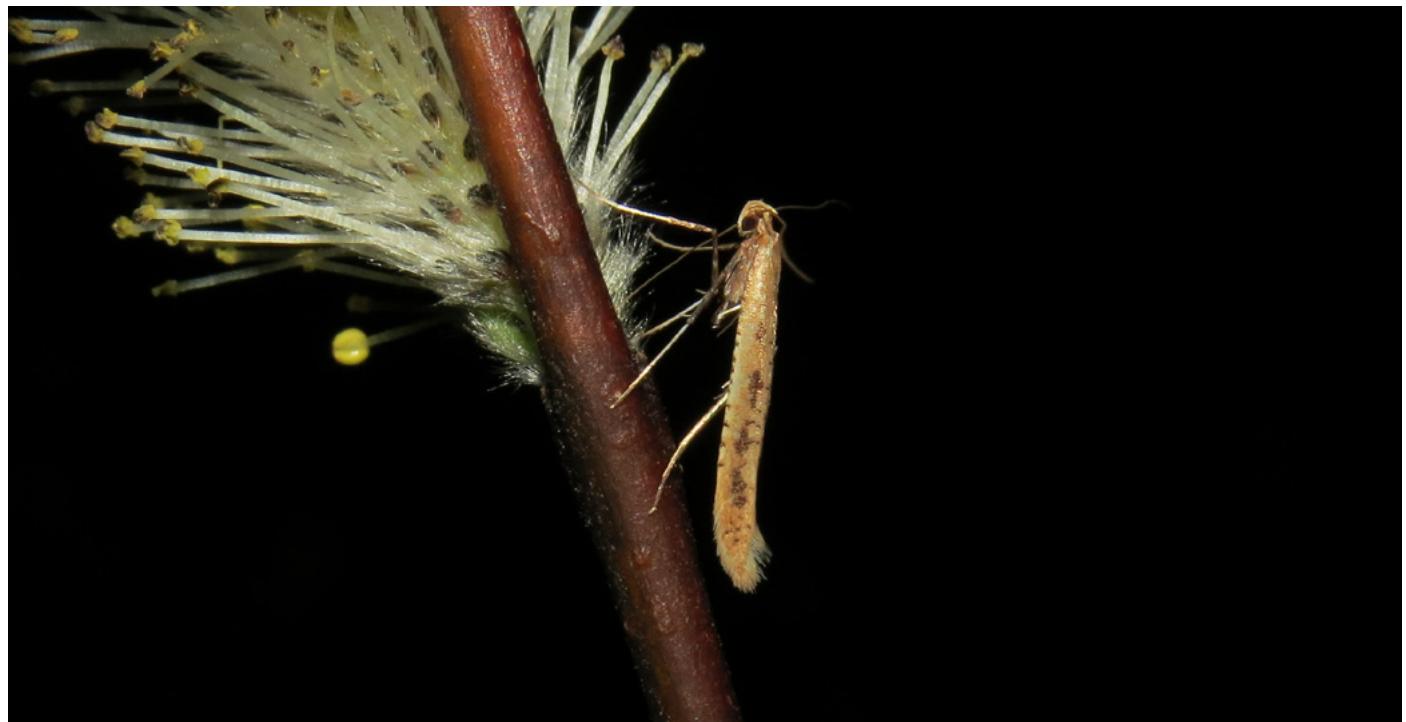
Satyrium titus (*Prunus*)
Polygonia gracilis (*Ribes*)
Euphyes dion (*Carex*)

Moths:

Caloptilia alnicolella (*Alnus incana*)
Loscoptia velata (*Carex stipata*)
Macronoctua onusta (*Iris versicolor*)
Oidaematophorus eupatorii (*Eutrochium maculatum*)



Colletes simulans (spine-shouldered cellophane bee) uses *Solidago* (goldenrod) species as a host plant.
Photo: Heather Holm

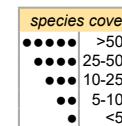


Caloptilia alnicolella uses *Alnus incana* (grey alder) as a host plant. Photo: Kyle Johnson

WFn64 Northern Very Wet Ash Swamp

Pollinator Resources Table

WFn64 Class Factsheet. Based on 98 relevés. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Dwarf raspberry (<i>Rubus pubescens</i>)	94	••	SC	Perennial	Present	insects	Generalist	2
Lady fern (<i>Athyrium filix-femina</i>)	84	•	SC	Perennial	Present	wind, water	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	84	••	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Common marsh marigold (<i>Caltha palustris</i>)	80	•	SI	Perennial	Present	insects	Early spring insect	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	76	•	SC	Perennial	Weakly	insects	Generalist	2
Spinulose shield fern or Glandular wood fern (<i>Dryopteris</i> spp.)*	74	•	SC	Perennial	Present	wind, water	Generalist	0
Sensitive fern (<i>Onoclea sensibilis</i>)	67	••	SC	Perennial	Present	wind, water	Generalist	0
Naked miterwort (<i>Mitella nuda</i>)	66	•	UNK	Perennial	Present	insects	Early spring insect	4
Common strawberry (<i>Fragaria virginiana</i>)	66	•	SC	Perennial	Present	insects	Early spring insect	3
Crested fern (<i>Dryopteris cristata</i>)	65	•	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	65	•	UNK	Perennial	Present	insects	Generalist	3
Red-stemmed aster (<i>Aster puniceus</i>)	64	•	SI	Perennial	Present	insects	Generalist	4
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	61	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Canada mayflower (<i>Maianthemum canadense</i>)	59	•	SI	Perennial	Present	insects	Early spring insect	5
Alpine enchanter's nightshade (<i>Circaealpina</i>)	56	•	SC	Perennial	Present	insects	Generalist	2
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	51	•	D	Perennial	Present	insects	Generalist	4
Starflower (<i>Trientalis borealis</i>)	45	•	SI/sc	Perennial	Present	insects	Generalist	3
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	43	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	40	•	UNK	Perennial	Present	insects	Generalist	3
Side-flowering aster (<i>Aster lateriflorus</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Northern blue flag (<i>Iris versicolor</i>)	38	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	35	•	Varies	Varies	Varies	insects	Generalist	Varies
Bunchberry (<i>Cornus canadensis</i>)	35	•	SI	Perennial	Present	insects	Generalist	4
Giant goldenrod (<i>Solidago gigantea</i>)	35	•	GM	Perennial	Present	insects	Generalist	4
Common oak fern (<i>Gymnocarpium dryopteris</i>)	34	•	SC	Perennial	Present	wind, water	Generalist	0
Cinnamon fern (<i>Osmunda cinnamomea</i>)	34	•••	SC	Perennial	Present	wind, water	Generalist	0
Northern marsh fern (<i>Thelypteris palustris</i>)	33	•	SC	Perennial	Present	wind, water	Generalist	0
Rough bedstraw (<i>Galium asprellum</i>)	30	•	UNK	Perennial	Present	insects	Generalist	3
Woodland horsetail (<i>Equisetum sylvaticum</i>)	29	••	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Fowl manna grass (<i>Glyceria striata</i>)	69	•••	UNK	Perennial	Present	wind	Generalist	0
Awl-fruited sedge (<i>Carex stipata</i>)	57	•	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	54	•••	A	Perennial	Present	wind	Generalist	0
Bladder sedge (<i>Carex intumescens</i>)	51	•	UNK	Perennial	Present	wind	Generalist	0
Bristle-stalked sedge (<i>Carex leptalea</i>)	48	•••	UNK	Perennial	Present	wind	Generalist	0
Graceful sedge (<i>Carex gracillima</i>)	44	•	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	38	•••	UNK	Perennial	Present	wind	Generalist	0

Fringed brome (<i>Bromus ciliatus</i>)	35	●	SC	Perennial	Absent	wind	Generalist	0
Drooping woodreed (<i>Cinna latifolia</i>)	33	●	UNK	Perennial	Weakly	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	30	●	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	43	●	SC	Perennial	Present	insects	Generalist	2
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	69	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Speckled alder (<i>Alnus incana</i>)	70	●●●	Di	Perennial	Present	wind	Generalist	0
Red-osier dogwood (<i>Cornus sericea</i>)	55	●	SI	Perennial	Present	insects	Generalist	4
Mountain maple (<i>Acer spicatum</i>)	48	●●●	SI	Perennial	Absent	insects	Early spring insect	6
Wild black currant (<i>Ribes americanum</i>)	48	●	SI	Perennial	Present	insects	Generalist	4
Swamp gooseberry (<i>Ribes hirtellum</i>)	47	●	SI	Perennial	Present	insects	Generalist	4
Swamp red currant (<i>Ribes triste</i>)	44	●	SI	Perennial	Present	insects	Generalist	4
Winterberry (<i>Ilex verticillata</i>)	42	●●	PD	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	37	●	SI	Perennial	Present	insects	Early spring insect	5
Highbush cranberry (<i>Viburnum trilobum</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Beaked hazelnut (<i>Corylus cornuta</i>)	33	●	Di	Perennial	Present	wind	Generalist	0
Dwarf alder (<i>Rhamnus alnifolia</i>)	32	●	UNK	Perennial	Absent	insects	Generalist	4
Juneberries (<i>Amelanchier</i> spp.)	30	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Tree Canopy								
Black ash	87	●●●●	D	Perennial	Absent	wind	Generalist	0
Yellow birch	17	●●	Di	Perennial	Present	wind	Generalist	0
White cedar	17	●●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	17	●	Di	Perennial	Present	wind	Generalist	0
Balsam fir	13	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	12	●●	D	Perennial	Absent	insects	Early spring insect	6
Tamarack	11	●●●	SI	Perennial	Absent	wind	Generalist	0
American elm	8	●●	Di	Perennial	Absent	wind	Generalist	0
Red elm	8	●●	Di	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Black ash	91	●●●●	D	Perennial	Absent	wind	Generalist	0
Yellow birch	26	●●	Di	Perennial	Present	wind	Generalist	0
White cedar	21	●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	21	●	Di	Perennial	Present	wind	Generalist	0
Balsam fir	36	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	34	●●	D	Perennial	Absent	insects	Early spring insect	6
Tamarack	-	-	SI	Perennial	Absent	wind	Generalist	0
American elm	29	●●	Di	Perennial	Absent	wind	Generalist	0
Red elm	14	●	Di	Perennial	Absent	wind	Generalist	0

Tree Shrub Layer								
Black ash	83	••	D	Perennial	Absent	wind	Generalist	0
Yellow birch	19	••	Di	Perennial	Present	wind	Generalist	0
White cedar	21	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	14	•	Di	Perennial	Present	wind	Generalist	0
Balsam fir	45	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	54	•	D	Perennial	Absent	insects	Early spring insect	6
Tamarack	9	•	SI	Perennial	Absent	wind	Generalist	0
American elm	37	•	Di	Perennial	Absent	wind	Generalist	0
Red elm	22	•	Di	Perennial	Absent	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

WFs57 Southern Wet Ash Swamp

Pollinator Resources

Wet hardwood forests on mucky or peaty soils in areas of groundwater seepage, most often on level stream or river terraces at bases of steep slopes. Community is uncommon and often present as small inclusions within larger forest areas.

Examples of insect pollinators (and their associated host plants in parentheses) that use WFs57 include:

Bees:

Andrena rudbeckiae (*Rudbeckia*)
Andrena distans (*Geranium maculatum*)
Andrena wilkella (Fabaceae)
Andrena geranii (*Hydrophyllum virginianum*)

Butterflies:

Aglais milberti (*Laportea canadensis*)
Polygonia progne (*Ribes*)
Poanes viator (*Carex lacustris*)

Moths:

Sphinx canadensis (*Fraxinus nigra*)
Phyllonorycter lucetiella (*Tilia americana*)
Loscoptia velata (*Carex rosea*)



Andrena rudbeckiae (coneflower mining bee) uses *Rudbeckia* (coneflower) species as a host plant.
Photo: Heather Holm

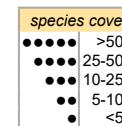


Aglais milberti (Milbert's tortoiseshell) uses *Laportea canadensis* (Canada nettle) as a host plant. Photo: Bob Dunlap

WFs57 Southern Wet Ash Swamp

Pollinator Resources Table

WFs57 Class Factsheet. Based on 31 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Touch-me-not (<i>Impatiens</i> spp.)	97	•••	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	90	•	SI	Perennial	Present	insects	Early spring insect, Somewhat specific insect	5
Wood nettle (<i>Laportea canadensis</i>)	81	•••	UNK	Perennial	Present	wind	Generalist	0
Common marsh marigold (<i>Caltha palustris</i>)	68	•••	SI	Perennial	Present	insects	Early spring insect	5
Wild geranium (<i>Geranium maculatum</i>)	65	•	SC	Perennial	Present	insects	Early spring insect	3
Common enchanter's nightshade (<i>Circaea lutetiana</i>)	61	•	SC	Perennial	Present	insects	Generalist	2
Tall coneflower (<i>Rudbeckia laciniata</i>)	61	•	SC	Perennial	Present	insects	Generalist	2
Lady fern (<i>Athyrium filix-femina</i>)	58	••	SC	Perennial	Present	wind, water	Generalist	0
White avens (<i>Geum canadense</i>)	55	•	UNK	Perennial	Present	insects	Generalist	3
Sensitive fern (<i>Onoclea sensibilis</i>)	48	•	SC	Perennial	Present	wind, water	Generalist	0
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	48	•	D	Perennial	Absent	insects	Generalist	5
Two-leaved miterwort (<i>Mitella diphylla</i>)	48	•	UNK	Perennial	Present	insects	Early spring insect	4
Wild ginger (<i>Asarum canadense</i>)	45	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Sweet-scented bedstraw (<i>Galium triflorum</i>)	45	•	UNK	Perennial	Present	insects	Generalist	3
Cleavers (<i>Galium aparine</i>)	45	•	SC	Annual	Absent	insects	Early spring insect	5
Hog peanut (<i>Amphicarpa bracteata</i>)	45	•	CH and CL flowers	Annual	Present	insects	Somewhat specific insect	6
Honewort (<i>Cryptotaenia canadensis</i>)	45	•	SC	Perennial	Present	insects	Generalist	2
Early meadow-rue (<i>Thalictrum dioicum</i>)	42	•	SI	Perennial	Present	wind	Generalist	0
Canada mayflower (<i>Maianthemum canadense</i>)	42	•	SI	Perennial	Present	insects	Early spring insect	5
Ostrich fern (<i>Matteuccia struthiopteris</i>)	39	•••	SC	Perennial	Present	wind, water	Generalist	0
Zigzag goldenrod (<i>Solidago flexicaulis</i>)	39	•	SI	Perennial	Present	insects	Generalist	4
Stinging nettle (<i>Urtica dioica</i>)	39	•	D	Perennial	Present	wind	Generalist	0
Michigan lily (<i>Lilium michiganense</i>)	39	•	SI	Perennial	Present	insects	Generalist	4
Hispid buttercup (<i>Ranunculus hispida</i>)	39	•	SI	Perennial	Present	insects	Early spring insect	5
Virginia waterleaf (<i>Hydrophyllum virginianum</i>)	39	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Dwarf raspberry (<i>Rubus pubescens</i>)	39	•	SC	Perennial	Present	insects	Generalist	2
Hooked crowfoot (<i>Ranunculus recurvatus</i>)	35	•	SI	Perennial	Present	insects	Early spring insect	5
Skunk cabbage (<i>Symplocarpus foetidus</i>)	35	•••••	Di	Perennial	Present	insects	Somewhat specific insect	5
Bulblet fern (<i>Cystopteris bulbifera</i>)	35	•	SC	Perennial	Present	wind, water	Generalist	0
Field horsetail (<i>Equisetum arvense</i>)	32	•	SC	Perennial	Present	wind, water	Generalist	0
Clearweed (<i>Pilea</i> spp.)	29	••	sometimes D	Annual	Absent	wind	Generalist	0
Crooked aster (<i>Aster prenanthoides</i>)	29	••	UNK	Perennial	Present	insects	Generalist	3
Tall scouring rush (<i>Equisetum hyemale</i>)	23	••	SC	Perennial	Present	wind, water	Generalist	0
False mermaid (<i>Floraea proserpinacoides</i>)	19	••••	SC	Annual	Absent	insects	Early spring insect	5
Small-leaved water cress (<i>Rorippa nasturtium-aquaticum</i>)	10	•••	SC	Perennial	Present	insects	Generalist	2
Grasses and Sedges								
Fowl manna grass (<i>Glyceria striata</i>)	68	••	UNK	Perennial	Present	wind	Generalist	0

Awl-fruited sedge (<i>Carex stipata</i>)	52	●	UNK	Perennial	Present	wind	Generalist	0
Starry sedge (<i>Carex rosea</i> or <i>C. radiata</i>)	39	●●	UNK	Perennial	Present	wind	Generalist	0
Bland sedge (<i>Carex blanda</i>)	32	●	UNK	Perennial	Present	wind	Generalist	0
Graceful sedge (<i>Carex gracillima</i>)	32	●	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	29	●●●	UNK	Perennial	Present	wind	Generalist	0
Brome-like sedge (<i>Carex bromoides</i>)	23	●●●	UNK	Perennial	Present	wind	Generalist	0
Smooth-sheathed sedge (<i>Carex laevigata</i>)	16	●	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	13	●●●	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	69	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Wild black currant (<i>Ribes americanum</i>)	52	●	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	45	●	SI	Perennial	Present	insects	Early spring insect	5
Nannyberry (<i>Viburnum lentago</i>)	45	●●	SI	Perennial	Present	insects	Generalist	4
Pagoda dogwood (<i>Cornus alternifolia</i>)	35	●	UNK	Perennial	Present	insects	Generalist	3
Poison ivy (<i>Toxicodendron rydbergii</i>)	32	●	D	Perennial	Present	insects	Generalist	4
Prickly gooseberry (<i>Ribes cynosbati</i>)	29	●	SI	Perennial	Present	insects	Generalist	4
Speckled alder (<i>Alnus incana</i>)	26	●●●	Di	Perennial	Present	wind	Generalist	0
Missouri gooseberry (<i>Ribes missouriense</i>)	23	●●	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Black ash	97	●●●●	D	Perennial	Absent	wind	Generalist	0
Basswood	58	●●	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	39	●●●	D	Perennial	Absent	insects	Early spring insect	6
American elm	32	●●	Di	Perennial	Absent	wind	Generalist	0
Bur oak	23	●	SI	Perennial	Present	wind	Generalist	0
Yellow birch	19	●●●	Di	Perennial	Present	wind	Generalist	0
Paper birch	16	●●●	Di	Perennial	Present	wind	Generalist	0
Green ash	16	●●●	D	Perennial	UNK	wind	Generalist	0
Blue beech	13	●	UNK	Perennial	Present	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Tree Subcanopy								
Black ash	90	●●●	D	Perennial	Absent	wind	Generalist	0
Basswood	52	●●	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	39	●●	D	Perennial	Absent	insects	Early spring insect	6
American elm	45	●	Di	Perennial	Absent	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
Yellow birch	19	●●●	Di	Perennial	Present	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Green ash	13	●●	D	Perennial	UNK	wind	Generalist	0
Blue beech	23	●●	UNK	Perennial	Present	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0

Tree Shrub Layer								
Black ash	90	••	D	Perennial	Absent	wind	Generalist	0
Basswood	42	•	SI	Perennial	Absent	insects	Generalist	5
Sugar maple	42	•	D	Perennial	Absent	insects	Early spring insect	6
American elm	48	•	Di	Perennial	Absent	wind	Generalist	0
Bur oak	26	•	SI	Perennial	Present	wind	Generalist	0
Yellow birch	16	•	Di	Perennial	Present	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
Green ash	13	•	D	Perennial	UNK	wind	Generalist	0
Blue beech	23	•	UNK	Perennial	Present	wind	Generalist	0
Northern red oak	32	•	SI	Perennial	Present	wind	Generalist	0

WFw54 Northwestern Wet Aspen Forest

Pollinator Resources

Wet hardwood and hardwood-conifer forests in depressions and on level to gently sloping lacustrine deposits in the Glacial Lake Agassiz plain.

Examples of insect pollinators (and their associated host plants in parentheses) that use WFw54 include:

Bees:

Andrena melanochroa (Rosaceae)

Andrena erythrogaster (*Salix*)

Andrena asteris (*Symphyotrichum*)

Butterflies:

Pyrgus centaureae (*Fragaria virginiana*)

Erynnis icelus (*Populus tremuloides*)

Polygonia progne (*Ribes*)

Moths:

Acleris cornana (*Cornus sericea*)

Mesoleuca ruficillata (*Rubus idaeus* var. *strigosus*)

Hemileuca nevadensis (*Populus tremuloides*)

Amphipyra pyramidoides (*Corylus cornuta*)



Andrena asteris (aster miner bee) uses *Symphyotrichum* (American asters) species as a host plant. Photo: Heather Holm

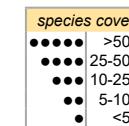


Polygonia progne (gray comma) uses *Ribes* (currant, gooseberry) species as a host plant. Photo: Bob Dunlap

WFw54 Northernwestern Wet Aspen Forest

Pollinator Resources Table

WFw54 Class Factsheet. Based on 27 relevés. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Side-flowering aster (<i>Aster lateriflorus</i>)	93	●	SI	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	85	●●●	SC	Perennial	Present	insects	Generalist	2
Common strawberry (<i>Fragaria virginiana</i>)	81	●●	SC	Perennial	Present	insects	Early spring insect	3
Palmate sweet coltsfoot (<i>Petasites frigidus</i>)	74	●	D	Perennial	Present	insects	Early spring insect	5
Sweet-scented bedstraw (<i>Galium triflorum</i>)	70	●	UNK	Perennial	Present	insects	Generalist	3
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	70	●●	D	Perennial	Present	insects	Generalist	4
Naked miterwort (<i>Mitella nuda</i>)	63	●●	UNK	Perennial	Present	insects	Early spring insect	4
Field horsetail (<i>Equisetum arvense</i>)	59	●	SC	Perennial	Present	wind, water	Generalist	0
Lindley's aster (<i>Aster ciliolatus</i>)	56	●	UNK	Perennial	Present	insects	Generalist	3
Canada mayflower (<i>Maianthemum canadense</i>)	52	●	SI	Perennial	Present	insects	Early spring insect	5
Rattlesnake fern (<i>Botrychium virginianum</i>)	52	●	SC	Perennial	Present	wind, water	Generalist	0
Red-stemmed aster (<i>Aster puniceus</i>)	52	●	SI	Perennial	Present	insects	Generalist	4
Maryland black snakeroot (<i>Sanicula marilandica</i>)	52	●	UNK	Perennial	Absent	insects	Generalist	4
Starry false Solomon's seal (<i>Smilacina stellata</i>)	48	●	UNK	Perennial	Present	insects	Early spring insect	4
Red baneberry (<i>Actaea rubra</i>)	48	●	SC	Perennial	Present	insects	Early spring insect	3
Giant goldenrod (<i>Solidago gigantea</i>)	48	●●	GM	Perennial	Present	insects	Generalist	4
Northern bedstraw (<i>Galium boreale</i>)	44	●●	SI	Perennial	Present	insects	Generalist	4
Yellow avens (<i>Geum aleppicum</i>)	44	●	UNK	Perennial	Present	insects	Generalist	3
Bunchberry (<i>Cornus canadensis</i>)	37	●	SI	Perennial	Present	insects	Generalist	4
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Canada goldenrod (<i>Solidago canadensis</i>)	33	●●	SI	Perennial	Present	insects	Generalist	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Wild ginger (<i>Asarum canadense</i>)	33	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Arrow-leaved sweet coltsfoot (<i>Petasites sagittatus</i>)	33	●	D	Perennial	Present	insects	Early spring insect	5
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	33	●	D	Perennial	Absent	insects	Generalist	5
Spinulose shield fern or Glandular wood fern *	30	●	SC	Perennial	Present	wind, water	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	30	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Flat-topped aster (<i>Aster umbellatus</i>)	30	●●	UNK	Perennial	Present	insects	Generalist	3
Woodland horsetail (<i>Equisetum sylvaticum</i>)	26	●	SC	Perennial	Present	wind, water	Generalist	0
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	26	●●●	D	Perennial	Present	wind	Generalist	0
Big-leaved avens (<i>Geum macrophyllum</i>)	26	●	UNK	Perennial	Present	insects	Generalist	3
Northern blue flag (<i>Iris versicolor</i>)	26	●	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Grasses and Sedges								
Bluejoint (<i>Calamagrostis canadensis</i>)	78	●●●	A	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	52	●	SC	Perennial	Absent	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	37	●	UNK	Perennial	Present	wind	Generalist	0
Dewey's sedge (<i>Carex deweyana</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0

Lake sedge (<i>Carex lacustris</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0
Mountain rice grass (<i>Oryzopsis asperifolia</i>)	30	●	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	30	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	78	●●●	SC	Perennial	Present	insects	Generalist	2
Poison ivy (<i>Toxicodendron rydbergii</i>)	37	●●	D	Perennial	Present	insects	Generalist	4
Shrubs								
Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	85	●	SC	Perennial	Present	insects	Generalist	2
Red-osier dogwood (<i>Cornus sericea</i>)	78	●●●	SI	Perennial	Present	insects	Generalist	4
Dwarf alder (<i>Rhamnus alnifolia</i>)	74	●	UNK	Perennial	Absent	insects	Generalist	4
Swamp gooseberry (<i>Ribes hirtellum</i>)	67	●	SI	Perennial	Present	insects	Generalist	4
Chokecherry (<i>Prunus virginiana</i>)	63	●	SI	Perennial	Present	insects	Early spring insect	5
Speckled alder (<i>Alnus incana</i>)	56	●●●●	Di	Perennial	Present	wind	Generalist	0
Highbush cranberry (<i>Viburnum trilobum</i>)	56	●	UNK	Perennial	Present	insects	Generalist	3
Juneberries (<i>Amelanchier</i> spp.)	56	●	Varies	Perennial	Present	insects	Early spring insect	Varies
Beaked hazelnut (<i>Corylus cornuta</i>)	48	●	Di	Perennial	Present	wind	Generalist	0
Bebb's willow (<i>Salix bebbiana</i>)	44	●●	D	Perennial	Present	insects	Early spring insect	5
Wild black currant (<i>Ribes americanum</i>)	44	●	SI	Perennial	Present	insects	Generalist	4
Swamp red currant (<i>Ribes triste</i>)	41	●	SI	Perennial	Present	insects	Generalist	4
Nannyberry (<i>Viburnum lentago</i>)	30	●	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Quaking aspen	74	●●●●	D	Perennial	Present	wind	Generalist	0
Balsam poplar	59	●●●	D	Perennial	Present	wind	Generalist	0
Black ash	30	●●●	D	Perennial	Absent	wind	Generalist	0
White spruce	15	●●●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	15	●●	Di	Perennial	Present	wind	Generalist	0
American elm	4	●●	Di	Perennial	Absent	wind	Generalist	0
Bur oak	4	●	SI	Perennial	Present	wind	Generalist	0
Balsam fir	7	●●●	UNK	Perennial	Absent	wind	Generalist	0
Tree Subcanopy								
Quaking aspen	67	●●	D	Perennial	Present	wind	Generalist	0
Balsam poplar	41	●●	D	Perennial	Present	wind	Generalist	0
Black ash	70	●●●	D	Perennial	Absent	wind	Generalist	0
White spruce	19	●	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	7	●●	Di	Perennial	Present	wind	Generalist	0
American elm	30	●●●	Di	Perennial	Absent	wind	Generalist	0
Bur oak	11	●	SI	Perennial	Present	wind	Generalist	0
Balsam fir	15	●●	UNK	Perennial	Absent	wind	Generalist	0
Tree Shrub Layer								
Quaking aspen	59	●	D	Perennial	Present	wind	Generalist	0

Balsam poplar	70	•	D	Perennial	Present	wind	Generalist	0
Black ash	63	•••	D	Perennial	Absent	wind	Generalist	0
White spruce	22	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	7	•	Di	Perennial	Present	wind	Generalist	0
American elm	48	••	Di	Perennial	Absent	wind	Generalist	0

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)

FPn63 Northern Cedar Swamp

Pollinator Resources

White cedar-dominated swamps on wet peat soils. Often present in areas influenced by mineral-rich subsurface flow or groundwater seepage along the margins of uplands and peatlands.

Examples of insect pollinators (and their associated host plants in parentheses) that use FPn63 include:

Bees:

Andrena frigida (*Salix*)

Andrena persimulata (*Cornus* [*Swida*])

Colletes validus (*Vaccinium*)

Butterflies:

Erebia mancinus (*Carex trisperma*)

Boloria chariclea (*Vaccinium*, *Viola*)

Boloria Frigga (*Vaccinium*)

Moths:

Caloptilia cornusella (*Cornus canadensis*)

Sygrapha rectangularis (*Abies balsamea*)

Acleris cornana (*Cornus sericea*)

Zeiraphera canadensis (*Picea mariana*)



Colletes validus (blueberry cellophane bee) uses *Vaccinium* (blueberry, cranberry) species as a host plant. Photo: Michael Veit

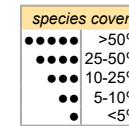


Boloria frigga uses *Vaccinium* (blueberry, cranberry) and *Viola* (violet) species as host plants. Photo: Kyle Johnson

FPn63 Northern Cedar Swamp

Pollinator Resources Table

FPn63 Class Factsheet. Based on 76 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Goldthread (<i>Coptis trifolia</i>)	97	●	UNK	Perennial	Present	insects	Early spring insect	4
Dwarf raspberry (<i>Rubus pubescens</i>)	93	●●	SC	Perennial	Present	insects	Generalist	2
Twinflower (<i>Linnaea borealis</i>)	93	●	SC	Perennial	Present	insects	Generalist	2
Bunchberry (<i>Cornus canadensis</i>)	93	●●	SI	Perennial	Present	insects	Generalist	4
Naked miterwort (<i>Mitella nuda</i>)	92	●●	UNK	Perennial	Present	insects	Early spring insect	4
Starflower (<i>Triantalis borealis</i>)	92	●	SI/sc	Perennial	Present	insects	Generalist	3
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	87	●●	UNK	Perennial	Present	insects	Early spring insect	4
Sweet-scented bedstraw (<i>Galium triflorum</i>)	78	●	UNK	Perennial	Present	insects	Generalist	3
Bluebead lily (<i>Clintonia borealis</i>)	62	●	SI	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	59	●	SI	Perennial	Present	insects	Early spring insect	5
Common marsh marigold (<i>Caltha palustris</i>)	59	●	SI	Perennial	Present	insects	Early spring insect	5
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	47	●	D	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	45	●	SC	Perennial	Present	insects	Early spring insect	3
One-sided pyrola (<i>Pyrola secunda</i>)	45	●	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
One-flowered pyrola (<i>Moneses uniflora</i>)	42	●	SC	Perennial	Present	insects	Buzz pollination	4
Crested fern (<i>Dryopteris cristata</i>)	37	●	SC	Perennial	Present	wind, water	Generalist	0
Red-stemmed aster (<i>Aster puniceus</i>)	37	●	SI	Perennial	Present	insects	Generalist	4
Rattlesnake fern (<i>Botrychium virginianum</i>)	37	●	SC	Perennial	Present	wind, water	Generalist	0
Common oak fern (<i>Gymnocarpium dryopteris</i>)	37	●	SC	Perennial	Present	wind, water	Generalist	0
Showy lady's slipper (<i>Cypripedium reginae</i>)	36	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Northern marsh fern (<i>Thelypteris palustris</i>)	34	●	SC	Perennial	Present	wind, water	Generalist	0
Pink shinleaf (<i>Pyrola asarifolia</i>)	33	●	UNK	Perennial	Present	insects	Buzz pollination	5
Lesser rattlesnake plantain (<i>Goodyera repens</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Small northern bog orchid (<i>Platanthera obtusata</i>)	32	●	SI	Perennial	Weakly	insects	Very specialized insect	6
Kidney-leaved violet (<i>Viola renifolia</i>)	30	●	CL flowers present	Perennial	Present	insects	Early spring insect	4
Big-leaf white violet or Northern white violet*	29	●	Varies	Perennial	Present	insects	Varies	Varies
Heart-leaved twayblade (<i>Listera cordata</i>)	28	●	SC	Perennial	Present	insects	Generalist	2
Labrador bedstraw (<i>Galium labradoricum</i>)	28	●	UNK	Perennial	Present	insects	Generalist	3
Tall Northern bog orchid (<i>Platanthera hyperborea</i>)	26	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Lady fern (<i>Athyrium filix-femina</i>)	26	●	SC	Perennial	Present	wind, water	Generalist	0
Large-leaved aster (<i>Aster macrophyllus</i>)	26	●	A	Perennial	Present	insects	Generalist	2
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	25	●	UNK	Perennial	Present	insects	Generalist	3
Yellow lady's slipper (<i>Cypripedium calceolus</i>)	25	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Northern bugleweed (<i>Lycopus uniflorus</i>)	24	●	SC	Perennial	Weakly	insects	Generalist	2
Grasses and Sedges								
Soft-leaved sedge (<i>Carex disperma</i>)	74	●●●	UNK	Perennial	Present	wind	Generalist	0
Bristle-stalked sedge (<i>Carex leptalea</i>)	72	●●●	UNK	Perennial	Present	wind	Generalist	0

Three-fruited bog sedge (<i>Carex trisperma</i>)	47	•••	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	47	•	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	41	••	A	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	39	•	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	26	••	UNK	Perennial	Present	wind	Generalist	0
Drooping woodreed (<i>Cinna latifolia</i>)	25	•	UNK	Perennial	Weakly	wind	Generalist	0
Low Shrubs								
Labrador tea (<i>Ledum groenlandicum</i>)	88	••	SC	Perennial	Present	insects	Early spring insect	3
Creeping snowberry (<i>Gaultheria hispida</i>)	79	•	UNK	Perennial	Present	insects	Generalist	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	50	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	39	•	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	28	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Tall Shrubs								
Speckled alder (<i>Alnus incana</i>)	63	•••	Di	Perennial	Present	wind	Generalist	0
Dwarf alder (<i>Rhamnus alnifolia</i>)	63	•	UNK	Perennial	Absent	insects	Generalist	4
Red-osier dogwood (<i>Cornus sericea</i>)	63	•	SI	Perennial	Present	insects	Generalist	4
Fly honeysuckle (<i>Lonicera canadensis</i>)	46	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Swamp fly honeysuckle (<i>Lonicera oblongifolia</i>)	38	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Juneberries (<i>Amelanchier</i> spp.)	30	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	29	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Swamp red currant (<i>Ribes triste</i>)	26	•	SI	Perennial	Present	insects	Generalist	4
Pussy willow (<i>Salix discolor</i>)	25	•	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
White cedar	92	••••	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	67	••	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	59	•••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	22	•	Di	Perennial	Present	wind	Generalist	0
Tamarack	14	••	SI	Perennial	Absent	wind	Generalist	0
Black ash	8	••	D	Perennial	Absent	wind	Generalist	0
Red maple	4	•	D	Perennial	Absent	insects	Early spring insect	6
Tree Understory								
White cedar	83	•••	UNK	Perennial	Absent	wind	Generalist	0
Balsam fir	89	•••	UNK	Perennial	Absent	wind	Generalist	0
Black spruce	45	••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	46	•	Di	Perennial	Present	wind	Generalist	0
Tamarack	20	•	SI	Perennial	Absent	wind	Generalist	0
Black ash	37	•	D	Perennial	Absent	wind	Generalist	0
Red maple	26	•	D	Perennial	Absent	insects	Early spring insect	6

*Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*).

FPn73 Northern Rich Alder Swamp

Pollinator Resources

Tall shrub wetlands dominated by speckled alder on mineral, muck, or peat soils. Present in wetland basins on glacial moraines and till plains, along streams and drainage ways, and in laggs along peatland and upland borders.

Examples of insect pollinators (and their associated host plants in parentheses) that use FPn73 include:

Bees:

Andrena persimulata (*Cornus [Swida]*)

Andrena salictaria (*Salix*)

Andrena placata (*Solidago*)

Butterflies:

Polygonia progne (*Ribes*)

Euphyes dion (*Carex*)

Colias interior (*Vaccinium*)

Moths:

Sthenopis argenteomaculatus (*Alnus incana*)

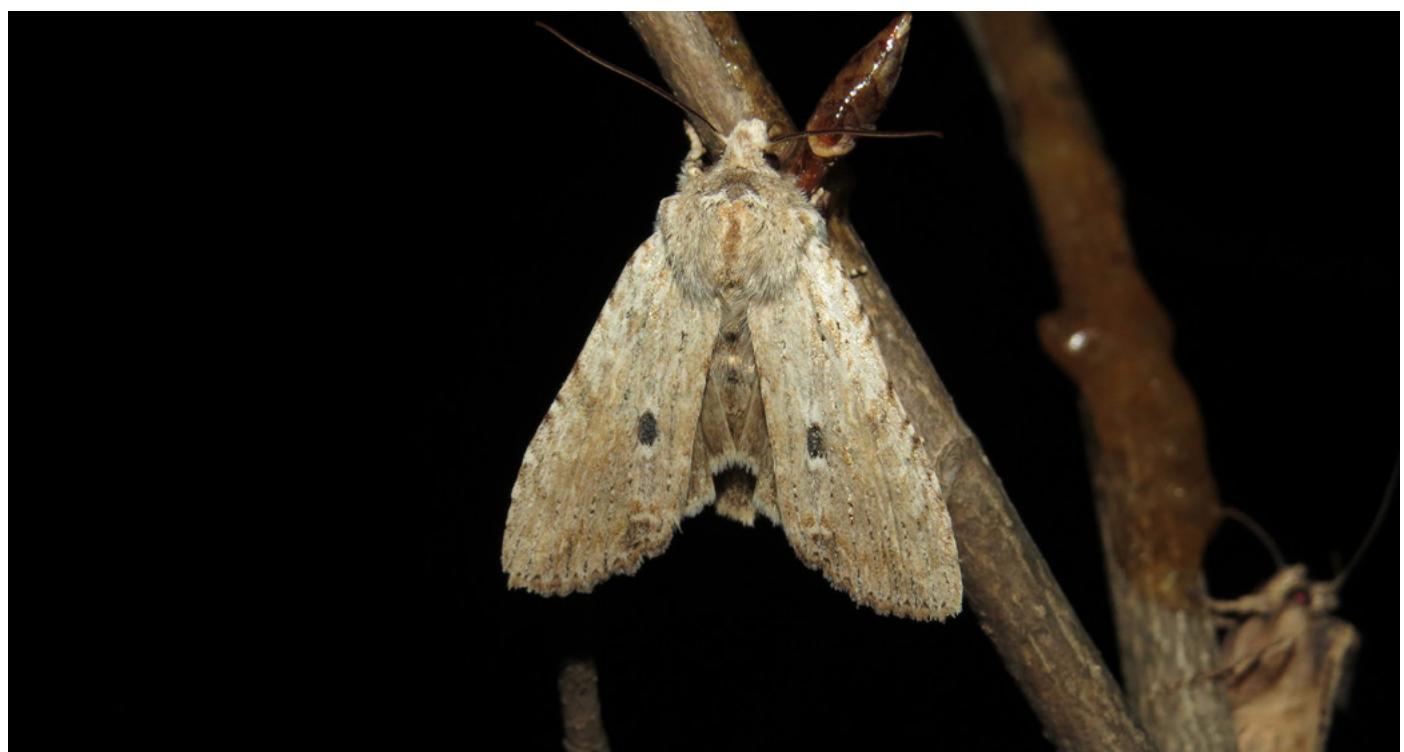
Mesoleuca ruficillata (*Rubus idaeus* var. *strigosus*)

Lithophane patefacta (*Acer rubrum*)

Acleris cornana (*Cornus sericea*)



Euphyes dion (Dion skipper) uses *Carex* (sedge) species as a host plant. Photo: Bob Dunlap

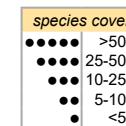


Lithophane patefacta (dimorphic pinion) uses *Acer rubrum* (red maple) as a host plant. Photo: Kyle Johnson

FPn73 Northern Rich Alder Swamp

Pollinator Resources Table

FPn73 Class Factsheet. Based on 44 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Dwarf raspberry (<i>Rubus pubescens</i>)	89	•	SC	Perennial	Present	insects	Generalist	2
Crested fern (<i>Dryopteris cristata</i>)	86	•	SC	Perennial	Present	wind, water	Generalist	0
Northern bugleweed (<i>Lycopodium uniflorus</i>)	82	•	SC	Perennial	Weakly	insects	Generalist	2
Northern marsh fern (<i>Thelypteris palustris</i>)	59	•	SC	Perennial	Present	wind, water	Generalist	0
Common marsh marigold (<i>Caltha palustris</i>)	59	•	SI	Perennial	Present	insects	Early spring insect	5
Red-stemmed aster (<i>Aster puniceus</i>)	59	•	SI	Perennial	Present	insects	Generalist	4
Spinulose shield fern (<i>Dryopteris carthusiana</i>)	55	•	SC	Perennial	Present	wind, water	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	55	••	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	55	•	SI	Perennial	Present	insects	Generalist	4
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	52	••	UNK	Perennial	Present	insects	Early spring insect	4
Starflower (<i>Trientalis borealis</i>)	50	•	SI/sc	Perennial	Present	insects	Generalist	3
Marsh bellflower (<i>Campanula aparinoides</i>)	50	•	UNK	Perennial	Present	insects	Generalist	3
Bunchberry (<i>Cornus canadensis</i>)	48	•	SI	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	43	•	SI	Perennial	Present	insects	Early spring insect	5
Northern blue flag (<i>Iris versicolor</i>)	43	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Great water dock (<i>Rumex orbiculatus</i>)	41	•	UNK	Perennial	UNK	wind	Generalist	0
Big-leaf white violet or Northern white violet*	39	•	Varies	Perennial	Present	insects	Varies	Varies
Linear-leaved, Marsh, or Downy willow-herb**	39	•	Varies	Perennial	Present	insects	Generalist	3
Marsh cinquefoil (<i>Potentilla palustris</i>)	36	•	SC	Perennial	Present	insects	Generalist	2
Cinnamon fern (<i>Osmunda cinnamomea</i>)	34	••	SC	Perennial	Present	wind, water	Generalist	0
Marsh skullcap (<i>Scutellaria galericulata</i>)	34	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	32	•	UNK	Perennial	Present	insects	Generalist	3
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	30	•	UNK	Annual	Absent	insects	Generalist	5
Three-cleft or Small bedstraw (<i>Galium trifidum</i> or <i>G. tinctorium</i>)	30	•	UNK	Perennial	Present	insects	Generalist	3
Bog goldenrod (<i>Solidago uliginosa</i>)	30	•	SI	Perennial	Present	insects	Generalist	4
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	25	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Long-leaved chickweed (<i>Stellaria longifolia</i>)	25	•	SC	Perennial	Present	insects	Generalist	2
Woodland horsetail (<i>Equisetum sylvaticum</i>)	23	••	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	23	•	UNK	Perennial	Present	insects	Generalist	3
Flat-topped aster (<i>Aster umbellatus</i>)	23	•	UNK	Perennial	Present	insects	Generalist	3
Water horsetail (<i>Equisetum fluviatile</i>)	20	•	SC	Perennial	Present	wind, water	Generalist	0
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	20	•	UNK	Perennial	Absent	insects	Generalist	4
Naked miterwort (<i>Mitella nuda</i>)	20	•	UNK	Perennial	Present	insects	Early spring insect	4
Goldthread (<i>Coptis trifolia</i>)	18	•	UNK	Perennial	Present	insects	Early spring insect	4
Bluebead lily (<i>Clintonia borealis</i>)	18	•	SI	Perennial	Present	insects	Generalist	4
Grasses and Sedges								
Bluejoint (<i>Calamagrostis canadensis</i>)	80	•••	A	Perennial	Present	wind	Generalist	0

Grasses and Sedges cont.								
Soft-leaved sedge (<i>Carex disperma</i>)	57	••	UNK	Perennial	Present	wind	Generalist	0
Bristle-stalked sedge (<i>Carex leptalea</i>)	45	••	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	45	••••	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	34	•	UNK	Perennial	Present	wind	Generalist	0
Three-fruited bog sedge (<i>Carex trisperma</i>)	27	•	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	27	•••	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	20	•	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	84	•	SC	Perennial	Present	insects	Generalist	2
Labrador tea (<i>Ledum groenlandicum</i>)	50	••	SC	Perennial	Present	insects	Early spring insect	3
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	27	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	23	•	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Tall Shrubs								
Speckled alder (<i>Alnus incana</i>)	98	•••••	Di	Perennial	Present	wind	Generalist	0
Red-osier dogwood (<i>Cornus sericea</i>)	66	••	SI	Perennial	Present	insects	Generalist	4
Swamp gooseberry (<i>Ribes hirtellum</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Juneberries (<i>Amelanchier spp.</i>)	32	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Pussy willow (<i>Salix discolor</i>)	32	•	D	Perennial	Present	insects	Early spring insect	5
Skunk currant (<i>Ribes glandulosum</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Dwarf alder (<i>Rhamnus alnifolia</i>)	30	••	UNK	Perennial	Absent	insects	Generalist	4
Bog birch (<i>Betula pumila</i>)	27	•••	Di	Perennial	Present	wind	Generalist	0
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	23	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Tree Canopy								
Paper birch	30	•	Di	Perennial	Present	wind	Generalist	0
Tamarack	30	•	SI	Perennial	Absent	wind	Generalist	0
Black spruce	20	•	UNK	Perennial	Absent	wind	Generalist	0
Black ash	16	•	D	Perennial	Absent	wind	Generalist	0
Balsam fir	14	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	11	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	2	•	D	Perennial	Absent	insects	Early spring insect	6
Tree Understory								
Paper birch	59	•	Di	Perennial	Present	wind	Generalist	0
Tamarack	30	•	SI	Perennial	Absent	wind	Generalist	0
Black spruce	27	•	UNK	Perennial	Absent	wind	Generalist	0
Black ash	27	•	D	Perennial	Absent	wind	Generalist	0
Balsam fir	45	•	UNK	Perennial	Absent	wind	Generalist	0
White cedar	23	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	55	•	D	Perennial	Absent	insects	Early spring insect	6

*Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*);** Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*).

FPn82 Northern Rich Tamarack Swamp (Western Basin) Pollinator Resources

Tamarack-dominated swamps on moderately deep to deep peat in basins on glacial till or outwash deposits, or occasionally along the margins of large peatlands on glacial lake plains or on floating mats along lake or river shores.

Examples of insect pollinators (and their associated host plants in parentheses) that use FPn82 include:

Bees:

Andrena melanochroa (Rosaceae)

Osmia virga (*Vaccinium*)

Andrena clarkella (*Salix*)

Andrena sigmundi (*Salix*)

Butterflies:

Tharsalea hyllus (*Rumex*)

Polygonia progne (*Ribes*)

Callophrys augustinus (*Kalmia polifolia*)

Moths:

Macaria oweni (*Larix laricina*)

Anthraea polyphemus (*Betula pumila*)

Acleris oxycoccana (*Chamaedaphne calyculata*)



Andrena sigmundi uses *Salix* (willow) species as a host plant. Photo: Michael Veit

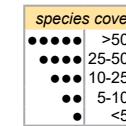


Callophrys augustinus (brown elfin) uses *Kalmia polifolia* (bog laurel) as a host plant. Photo: Kyle Johnson

FPn82 Northern Rich Tamarack Swamp (Western Basin)

Pollinator Resources Table

FPn82 Class Factsheet. Based on 52 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	87	••	UNK	Perennial	Present	insects	Early spring insect	4
Dwarf raspberry (<i>Rubus pubescens</i>)	81	••	SC	Perennial	Present	insects	Generalist	2
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	75	•	SI	Perennial	Present	insects	Generalist	4
Marsh cinquefoil (<i>Potentilla palustris</i>)	73	•	SC	Perennial	Present	insects	Generalist	2
Common marsh marigold (<i>Caltha palustris</i>)	62	•	SI	Perennial	Present	insects	Early spring insect	5
Canada mayflower (<i>Maianthemum canadense</i>)	62	•	SI	Perennial	Present	insects	Early spring insect	5
Crested fern (<i>Dryopteris cristata</i>)	60	•	SC	Perennial	Present	wind, water	Generalist	0
Northern marsh fern (<i>Thelypteris palustris</i>)	60	•	SC	Perennial	Present	wind, water	Generalist	0
Starflower (<i>Trifoliate borealis</i>)	58	•	SI/sc	Perennial	Present	insects	Generalist	3
Great water dock (<i>Rumex orbiculatus</i>)	56	•	UNK	Perennial	UNK	wind	Generalist	0
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	50	•	UNK	Perennial	Absent	insects	Generalist	4
Bunchberry (<i>Cornus canadensis</i>)	50	•	SI	Perennial	Present	insects	Generalist	4
Marsh bellflower (<i>Campanula aparinoides</i>)	46	•	UNK	Perennial	Present	insects	Generalist	3
Water horsetail (<i>Equisetum fluviatile</i>)	44	••	SC	Perennial	Present	wind, water	Generalist	0
Red-stemmed aster (<i>Aster puniceus</i>)	44	•	SI	Perennial	Present	insects	Generalist	4
Wild calla (<i>Calla palustris</i>)	42	•	A	Perennial	Present	insects	Somewhat specific insect	3
One-sided pyrola (<i>Pyrola secunda</i>)	42	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Northern bugleweed (<i>Lycopus uniflorus</i>)	40	•	SC	Perennial	Weakly	insects	Generalist	2
Big-leaf white violet or Northern white violet*	37	•	Varies	Perennial	Present	insects	Varies	Varies
Stemless lady's slipper (<i>Cypripedium acaule</i>)	37	•	SC	Perennial	Weakly	insects	Very specialized insect	4
Long-leaved chickweed (<i>Stellaria longifolia</i>)	37	•	SC	Perennial	Present	insects	Generalist	2
Buckbean (<i>Menyanthes trifoliata</i>)	35	••	H	Perennial	Present	insects	Early spring insect	5
Linear-leaved, Marsh, or Downy willow-herb**	33	•	Varies	Perennial	Present	insects	Generalist	3
Spinulose shield fern (<i>Dryopteris carthusiana</i>)	33	•	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	33	•	UNK	Perennial	Present	insects	Generalist	3
Twinkler (<i>Linnaea borealis</i>)	33	•	SC	Perennial	Present	insects	Generalist	2
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	31	•	UNK	Annual	Absent	insects	Generalist	5
Goldthread (<i>Coptis trifolia</i>)	29	•	UNK	Perennial	Present	insects	Early spring insect	4
Pink shinleaf (<i>Pyrola asarifolia</i>)	29	•	UNK	Perennial	Present	insects	Buzz pollination	5
Meadow horsetail (<i>Equisetum pratense</i>)	29	•	SC	Perennial	Present	wind, water	Generalist	0
Cinnamon fern (<i>Osmunda cinnamomea</i>)	27	••	SC	Perennial	Present	wind, water	Generalist	0
Marsh skullcap (<i>Scutellaria galericulata</i>)	27	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Northern blue flag (<i>Iris versicolor</i>)	25	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Grasses and Sedges								
Soft-leaved sedge (<i>Carex disperma</i>)	62	••	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	60	••	A	Perennial	Present	wind	Generalist	0
Bristle-stalked sedge (<i>Carex leptalea</i>)	50	••	UNK	Perennial	Present	wind	Generalist	0

Lake sedge (<i>Carex lacustris</i>)	48	••	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	46	•	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	44	•	UNK	Perennial	Present	wind	Generalist	0
Three-fruited bog sedge (<i>Carex trisperma</i>)	38	••	UNK	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	31	•••	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Labrador tea (<i>Ledum groenlandicum</i>)	92	•••	SC	Perennial	Present	insects	Early spring insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	73	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Leatherleaf (<i>Chamaedaphne calyculata</i>)	63	•••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Bog rosemary (<i>Andromeda glaucophylla</i>)	60	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	40	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Creeping snowberry (<i>Gaultheria hispida</i>)	33	•	UNK	Perennial	Present	insects	Generalist	3
Bog laurel (<i>Kalmia polifolia</i>)	23	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Tall Shrubs								
Bog birch (<i>Betula pumila</i>)	90	•••	Di	Perennial	Present	wind	Generalist	0
Speckled alder (<i>Alnus incana</i>)	69	•••	Di	Perennial	Present	wind	Generalist	0
Red-osier dogwood (<i>Cornus sericea</i>)	58	•	SI	Perennial	Present	insects	Generalist	4
Bog willow (<i>Salix pedicellaris</i>)	50	•	D	Perennial	Present	insects	Early spring insect	5
Dwarf alder (<i>Rhamnus alnifolia</i>)	40	•	UNK	Perennial	Absent	insects	Generalist	4
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	37	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Pussy willow (<i>Salix discolor</i>)	25	•	D	Perennial	Present	insects	Early spring insect	5
Swamp gooseberry (<i>Ribes hirtellum</i>)	25	•	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Tamarack	100	••••	SI	Perennial	Absent	wind	Generalist	0
Black spruce	52	•••	UNK	Perennial	Absent	wind	Generalist	0
White cedar	31	•••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	19	•	Di	Perennial	Present	wind	Generalist	0
Red maple	10	•	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	10	•	UNK	Perennial	Absent	wind	Generalist	0
Black ash	10	•	D	Perennial	Absent	wind	Generalist	0
Tree Understory								
Tamarack	71	••	SI	Perennial	Absent	wind	Generalist	0
Black spruce	69	••	UNK	Perennial	Absent	wind	Generalist	0
White cedar	40	••	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	44	•	Di	Perennial	Present	wind	Generalist	0
Red maple	48	•	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	38	•	UNK	Perennial	Absent	wind	Generalist	0
Black ash	25	•	D	Perennial	Absent	wind	Generalist	0

*Big-leaf white or Northern white violet (*Viola blanda* or *V. macloskeyi*); Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*).

FPs63 Southern Rich Conifer Swamp

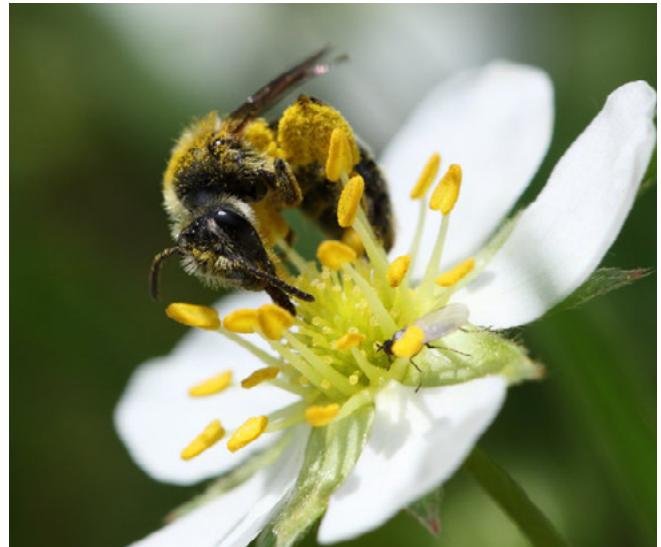
Pollinator Resources

Tamarack-dominated swamps on shallow to deep peat in basins on moraines and outwash plains. Occasionally on floating mats at edges of ponds or lakes.

Examples of insect pollinators (and their associated host plants in parentheses) that use FPs63 include:

Bees:

Andrena melanochroa (Rosaceae)
Andrena persimulata (Cornus [Swida])
Colletes americanus (Symphyotrichum)



Butterflies:

Polygonia progne (Ribes)
Argynnis cybele (Viola)
Satyrium acadica (Salix)

Moths:

Acleris cornana (Cornus sericea)
Ceratomia amyntor (Ulmus americana)
Macaria sexmaculata (Larix laricina)
Lithophane patefacta (Acer rubrum)

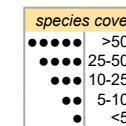


Satyrium acadica uses *Salix* (willow) species as a host plant. Photo: Bob Dunlap

FPs63 Southern Rich Conifer Swamp

Pollinator Resources Table

Fps63 Class Factsheet. Based on 30 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Dwarf raspberry (<i>Rubus pubescens</i>)	87	●●●	SC	Perennial	Present	insects	Generalist	2
Common marsh marigold (<i>Caltha palustris</i>)	77	●	SI	Perennial	Present	insects	Early spring insect	5
Touch-me-not (<i>Impatiens</i> spp.)	70	●●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Northern marsh fern (<i>Thelypteris palustris</i>)	70	●●●	SC	Perennial	Present	wind, water	Generalist	0
Sweet-scented bedstraw (<i>Galium triflorum</i>)	63	●	UNK	Perennial	Present	insects	Generalist	3
Starflower (<i>Trifolialis borealis</i>)	63	●	SI/sc	Perennial	Present	insects	Generalist	3
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	63	●●	SI	Perennial	Present	insects	Generalist	4
Canada mayflower (<i>Maianthemum canadense</i>)	57	●●	SI	Perennial	Present	insects	Early spring insect	5
Great water dock (<i>Rumex orbiculatus</i>)	53	●	UNK	Perennial	UNK	wind	Generalist	0
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	53	●	UNK	Perennial	Present	insects	Early spring insect	4
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	47	●	UNK	Perennial	Absent	insects	Generalist	4
Bog aster (<i>Aster borealis</i>)	47	●	UNK	Perennial	Present	insects	Generalist	3
Northern bugleweed (<i>Lycopodium uniflorus</i>)	47	●	SC	Perennial	Weakly	insects	Generalist	2
Red-stemmed aster (<i>Aster puniceus</i>)	47	●	SI	Perennial	Present	insects	Generalist	4
Marsh bellflower (<i>Campanula aparinoides</i>)	47	●	UNK	Perennial	Present	insects	Generalist	3
Spinulose shield fern or Glandular wood fern*	47	●	SC	Perennial	Present	wind, water	Generalist	0
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Water horsetail (<i>Equisetum fluviatile</i>)	43	●●	SC	Perennial	Present	wind, water	Generalist	0
Crested fern (<i>Dryopteris cristata</i>)	40	●	SC	Perennial	Present	wind, water	Generalist	0
Bunchberry (<i>Cornus canadensis</i>)	40	●	SI	Perennial	Present	insects	Generalist	4
Tall Northern bog orchid (<i>Platanthera hyperborea</i>)	40	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Pink shinleaf (<i>Pyrola asarifolia</i>)	40	●	UNK	Perennial	Present	insects	Buzz pollination	5
Big-leaf white violet or Northern white violet**	37	●	Varies	Perennial	Present	insects	Varies	Varies
Alpine enchanter's nightshade (<i>Circaeal alpina</i>)	37	●	SC	Perennial	Present	insects	Generalist	2
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	37	●●	Varies	Varies	Varies	insects	Generalist	Varies
Common strawberry (<i>Fragaria virginiana</i>)	33	●	SC	Perennial	Present	insects	Early spring insect	3
Clearweed (<i>Pilea</i> spp.)	33	●	sometimes D	Annual	Absent	wind	Generalist	0
Showy lady's slipper (<i>Cypripedium reginae</i>)	33	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	33	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Swamp saxifrage (<i>Saxifraga pensylvanica</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Naked miterwort (<i>Mitella nuda</i>)	33	●●	UNK	Perennial	Present	insects	Early spring insect	4
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	30	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Bristle-stalked sedge (<i>Carex leptalea</i>)	70	●●●	UNK	Perennial	Present	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	47	●●●	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	43	●	A	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	43	●	UNK	Perennial	Present	wind	Generalist	0

Grasses and Sedges cont.								
Fringed brome (<i>Bromus ciliatus</i>)	33	•	SC	Perennial	Absent	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	33	•••	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	30	•••	SI	Perennial	Present	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus</i> spp.)	60	•	SC	Perennial	Present	insects	Generalist	2
Wild grape (<i>Vitis riparia</i>)	40	•	D	Perennial	Present	insects	Generalist	4
Wild honeysuckle (<i>Lonicera dioica</i>)	37	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Low Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	43	•	SC	Perennial	Present	insects	Generalist	2
Labrador tea (<i>Ledum groenlandicum</i>)	30	••	SC	Perennial	Present	insects	Early spring insect	3
Tall Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	77	••	SI	Perennial	Present	insects	Generalist	4
Bog birch (<i>Betula pumila</i>)	77	••	Di	Perennial	Present	wind	Generalist	0
Swamp gooseberry (<i>Ribes hirtellum</i>)	60	•	SI	Perennial	Present	insects	Generalist	4
Poison ivy (<i>Toxicodendron rydbergii</i>)	57	•	D	Perennial	Present	insects	Generalist	4
Dwarf alder (<i>Rhamnus alnifolia</i>)	50	•	UNK	Perennial	Absent	insects	Generalist	4
Speckled alder (<i>Alnus incana</i>)	50	•••	Di	Perennial	Present	wind	Generalist	0
Swamp red currant (<i>Ribes triste</i>)	47	•	SI	Perennial	Present	insects	Generalist	4
Juneberries (<i>Amelanchier</i> spp.)	43	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	37	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Pussy willow (<i>Salix discolor</i>)	30	••	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Tamarack	93	••••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	37	•	Di	Perennial	Present	wind	Generalist	0
American elm	23	•	Di	Perennial	Absent	wind	Generalist	0
Black spruce	17	•••	UNK	Perennial	Absent	wind	Generalist	0
Red maple	13	•	D	Perennial	Absent	insects	Early spring insect	6
Black ash	13	•	D	Perennial	Absent	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Box elder	-	-	D	Perennial	Absent	insects	Early spring insect	6
Tree Understory								
Tamarack	60	•••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	30	•	Di	Perennial	Present	wind	Generalist	0
American elm	57	••	Di	Perennial	Absent	wind	Generalist	0
Black spruce	17	•	UNK	Perennial	Absent	wind	Generalist	0
Red maple	37	•	D	Perennial	Absent	insects	Early spring insect	6
Black ash	37	•	D	Perennial	Absent	wind	Generalist	0
Northern red oak	30	•	SI	Perennial	Present	wind	Generalist	0
Box elder	27	•	D	Perennial	Absent	insects	Early spring insect	6

* Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*); Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)

FPw63 Northwestern Rich Conifer Swamp

Pollinator Resources

Tamarack- or occasionally black spruce-dominated swamps in peat-filled depressions on glacial lake plains. Typically associated with sandy beach deposits.

Examples of insect pollinators (and their associated host plants in parentheses) that use FPw63 include:

Bees:

Melissodes desponsus (*Cirsium*)
Andrena placata (*Symphyotrichum*)
Andrena sigmundi (*Salix*)

Butterflies:

Satyrium titus (*Prunus*)
Erynnis juvenalis (*Quercus*)
Erynnis icelus (*Salix*)

Moths:

Hyalophora columbia (*Larix laricina*)
Phragmatobia fuliginosa (*Eutrochium maculatum*)
Tricholita signata (*Cirsium muticum*)
Malacosoma californica (*Betula pumila*)



Andrena placata (peaceful miner bee) uses *Symphyotrichum* (American aster) species as a host plant. Photo: Michael Veit

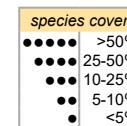


Hyalophora columbia (larch silkworm) uses *Larix laricina* (tamarack) as a host plant. Photo: Kyle Johnson

FPw63 Northwestern Rich Conifer Swamp

Pollinator Resources Table

FPw63 Class Factsheet. Based on 28 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Dwarf raspberry (<i>Rubus pubescens</i>)	100	•••	SC	Perennial	Present	insects	Generalist	2
Sweet-scented bedstraw (<i>Galium triflorum</i>)	75	•	UNK	Perennial	Present	insects	Generalist	3
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	75	•	UNK	Perennial	Present	insects	Generalist	3
Red-stemmed aster (<i>Aster puniceus</i>)	75	•	SI	Perennial	Present	insects	Generalist	4
Starflower (<i>Trifolialis borealis</i>)	64	•	SI/sc	Perennial	Present	insects	Generalist	3
Naked miterwort (<i>Mitella nuda</i>)	64	••	UNK	Perennial	Present	insects	Early spring insect	4
Twinflower (<i>Linnaea borealis</i>)	61	•	SC	Perennial	Present	insects	Generalist	2
Common marsh marigold (<i>Caltha palustris</i>)	57	•	SI	Perennial	Present	insects	Early spring insect	5
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	54	•	UNK	Perennial	Present	insects	Early spring insect	4
Canada mayflower (<i>Maianthemum canadense</i>)	54	•	SI	Perennial	Present	insects	Early spring insect	5
Bunchberry (<i>Cornus canadensis</i>)	50	••	SI	Perennial	Present	insects	Generalist	4
Northern marsh fern (<i>Thelypteris palustris</i>)	50	•	SC	Perennial	Present	wind, water	Generalist	0
Bog goldenrod (<i>Solidago uliginosa</i>)	46	•	SI	Perennial	Present	insects	Generalist	4
Water horsetail (<i>Equisetum fluviatile</i>)	46	••	SC	Perennial	Present	wind, water	Generalist	0
Common strawberry (<i>Fragaria virginiana</i>)	46	•	SC	Perennial	Present	insects	Early spring insect	3
Labrador bedstraw (<i>Galium labradoricum</i>)	46	•	UNK	Perennial	Present	insects	Generalist	3
Showy lady's slipper (<i>Cypripedium reginae</i>)	43	•	SC	Perennial	Weakly	insects	Very specialized insect	4
Marsh bellflower (<i>Campanula aparinoides</i>)	43	•	UNK	Perennial	Present	insects	Generalist	3
Bog aster (<i>Aster borealis</i>)	39	•	UNK	Perennial	Present	insects	Generalist	3
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	36	•	D	Perennial	Present	insects	Generalist	4
Linear-leaved, Marsh, or Downy willow-herb *	36	•	Varies	Perennial	Present	insects	Generalist	3
Swamp thistle (<i>Cirsium muticum</i>)	36	•	GD	Biennial	Absent	insects	Generalist	6
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	36	•	SI	Perennial	Present	insects	Generalist	4
Crested fern (<i>Dryopteris cristata</i>)	32	•	SC	Perennial	Present	wind, water	Generalist	0
Alpine enchanter's nightshade (<i>Circaeа alpina</i>)	32	••	SC	Perennial	Present	insects	Generalist	2
Starry false Solomon's seal (<i>Smilacina stellata</i>)	32	•	UNK	Perennial	Present	insects	Early spring insect	4
Flat-topped aster (<i>Aster umbellatus</i>)	29	•	UNK	Perennial	Present	insects	Generalist	3
Broad-leaved cattail (<i>Typha latifolia</i>)	29	•	SC	Perennial	Present	wind	Generalist	0
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	29	•	D	Perennial	Present	wind	Generalist	0
One-sided pyrola (<i>Pyrola secunda</i>)	29	•	UNK	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	4
Pink shinleaf (<i>Pyrola asarifolia</i>)	29	•	UNK	Perennial	Present	insects	Buzz pollination	5
Grasses and Sedges								
Fowl manna grass (<i>Glyceria striata</i>)	71	•••	UNK	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	61	•	SC	Perennial	Absent	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	46	••	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	39	••	A	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	39	•••	UNK	Perennial	Present	wind	Generalist	0

Bristle-stalked sedge (<i>Carex leptalea</i>)	36	••	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	36	••	UNK	Perennial	Present	wind	Generalist	0
Climbing Plants								
Wild honeysuckle (<i>Lonicera dioica</i>)	29	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Low Shrubs								
Labrador tea (<i>Ledum groenlandicum</i>)	68	••	SC	Perennial	Present	insects	Early spring insect	3
Red raspberry (<i>Rubus idaeus</i>)	54	••	SC	Perennial	Present	insects	Generalist	2
Small cranberry (<i>Vaccinium oxycoccus</i>)	43	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Poison ivy (<i>Toxicodendron rydbergii</i>)	32	•	D	Perennial	Present	insects	Generalist	4
Tall Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	89	•••	SI	Perennial	Present	insects	Generalist	4
Bog birch (<i>Betula pumila</i>)	89	••	Di	Perennial	Present	wind	Generalist	0
Dwarf alder (<i>Rhamnus alnifolia</i>)	86	•	UNK	Perennial	Absent	insects	Generalist	4
Swamp fly honeysuckle (<i>Lonicera oblongifolia</i>)	57	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Pussy willow (<i>Salix discolor</i>)	50	•	D	Perennial	Present	insects	Early spring insect	5
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	46	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Bebb's willow (<i>Salix bebbiana</i>)	39	•	D	Perennial	Present	insects	Early spring insect	5
Juneberries (<i>Amelanchier</i> spp.)	39	•	Varies	Perennial	Present	insects	Early spring insect	Varies
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	36	•	SC	Perennial	Absent	insects	Generalist	3
Swamp gooseberry (<i>Ribes hirtellum</i>)	36	•	SI	Perennial	Present	insects	Generalist	4
Sage-leaved willow (<i>Salix candida</i>)	32	•	D	Perennial	Present	insects	Early spring insect	5
Chokecherry (<i>Prunus virginiana</i>)	32	•	SI	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Tamarack	93	••••	SI	Perennial	Absent	wind	Generalist	0
Black spruce	46	•••	UNK	Perennial	Absent	wind	Generalist	0
Black ash	18	•	D	Perennial	Absent	wind	Generalist	0
Paper birch	7	•	Di	Perennial	Present	wind	Generalist	0
American elm	4	•	Di	Perennial	Absent	wind	Generalist	0
Balsam fir	4	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam poplar	4	•	D	Perennial	Present	wind	Generalist	0
Bur oak	-	-	SI	Perennial	Present	wind	Generalist	0
Tree Understory								
Tamarack	54	•••	SI	Perennial	Absent	wind	Generalist	0
Black spruce	50	•	UNK	Perennial	Absent	wind	Generalist	0
Black ash	29	•	D	Perennial	Absent	wind	Generalist	0
Paper birch	29	•	Di	Perennial	Present	wind	Generalist	0
American elm	39	•	Di	Perennial	Absent	wind	Generalist	0
Balsam fir	14	•	UNK	Perennial	Absent	wind	Generalist	0
Balsam poplar	18	•	D	Perennial	Present	wind	Generalist	0
Bur oak	18	•	SI	Perennial	Present	wind	Generalist	0

* Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*)

APn81 Northern Poor Conifer Swamp

Pollinator Resources

Conifer-dominated peatlands with sparse canopy of stunted trees. Understory is depauperate and dominated by ericaceous shrubs, fine-leaved graminoids, and low Sphagnum hummocks. Minerotrophic plant species are present.

Examples of insect pollinators (and their associated host plants in parentheses) that use APn81 include:

Bees:

Andrena bradleyi (*Vaccinium*)

Andrena clarkella (*Salix*)

Osmia virga (*Vaccinium*)

Butterflies:

Boloria chariclea (*Salix*)

Boloria freija (*Kalmia polifolia*)

Tharsalea epixanthe (*Vaccinium*)

Plebejus idas (*Kalmia polifolia*)

Moths:

Archiearis infans (*Betula papyrifera*)

Phyllonorycter ledella (*Rhododendron groenlandicum*)

Zeiraphera canadensis (*Picea mariana*)



Andrena bradleyi uses *Vaccinium* (blueberry, cranberry) species as a host plant. Photo: Max McCarthy

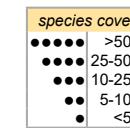


Boloria freija (Freija fritillary) uses *Kalmia polifolia* (bog laurel) as a host plant. Photo: Kyle Johnson

APn81 Northern Poor Conifer Swamp

Pollinator Resources Table

APn81 Class Factsheet. Based on 60 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	85	●●●	UNK	Perennial	Present	insects	Early spring insect	4
Stemless lady's slipper (<i>Cypripedium acaule</i>)	40	●	SC	Perennial	Weakly	insects	Very specialized insect	4
Indian pipe (<i>Monotropa uniflora</i>)	35	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Pitcher plant (<i>Sarracenia purpurea</i>)	32	●	SC	Perennial	Present	insects	Generalist	2
Round-leaved sundew (<i>Drosera rotundifolia</i>)	20	●	SC	Perennial	Absent	insects	Generalist	3
Spinulose shield fern (<i>Dryopteris carthusiana</i>)	18	●	SC	Perennial	Present	wind, water	Generalist	0
Buckbean (<i>Menyanthes trifoliata</i>)	17	●●	H	Perennial	Present	insects	Early spring insect	5
Northern blue flag (<i>Iris versicolor</i>)	13	●	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	13	●	SI	Perennial	Present	insects	Generalist	4
Bunchberry (<i>Cornus canadensis</i>)	10	●	SI	Perennial	Present	insects	Generalist	4
Bristly clubmoss (<i>Lycopodium annotinum</i>)	10	●	SC	Perennial	Present	wind, water	Generalist	0
Marsh cinquefoil (<i>Potentilla palustris</i>)	10	●	SC	Perennial	Present	insects	Generalist	2
Grasses and Sedges								
Three-fruited bog sedge (<i>Carex trisperma</i>)	83	●●●	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	37	●●	UNK	Perennial	Present	wind	Generalist	0
Tussock cottongrass (<i>Eriophorum vaginatum</i>)	37	●	UNK	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	33	●●●	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	25	●	A	Perennial	Present	wind	Generalist	0
Tawny cottongrass (<i>Eriophorum virginicum</i>)	22	●	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	17	●●●	UNK	Perennial	Present	wind	Generalist	0
Bog wiregrass sedge (<i>Carex oligosperma</i>)	15	●●●	UNK	Perennial	Present	wind	Generalist	0
Few-fruited sedge (<i>Carex pauciflora</i>)	13	●	UNK	Perennial	Present	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	10	●	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Labrador tea (<i>Ledum groenlandicum</i>)	93	●●●●	SC	Perennial	Present	insects	Early spring insect	3
Leatherleaf (<i>Chamaedaphne calyculata</i>)	83	●●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	80	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Bog laurel (<i>Kalmia polifolia</i>)	60	●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Bog rosemary (<i>Andromeda glaucophylla</i>)	53	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Velvet-leaved blueberry (<i>Vaccinium myrtilloides</i>)	48	●●	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Creeping snowberry (<i>Gaultheria hispida</i>)	38	●●	UNK	Perennial	Present	insects	Generalist	3
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	38	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Lingonberry (<i>Vaccinium vitis-idaea</i>)	12	●●●	SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Tall Shrubs								
Bog birch (<i>Betula pumila</i>)	47	●●	Di	Perennial	Present	wind	Generalist	0
Speckled alder (<i>Alnus incana</i>)	27	●●	Di	Perennial	Present	wind	Generalist	0
Bog willow (<i>Salix pedicellaris</i>)	13	●	D	Perennial	Present	insects	Early spring insect	5

Balsam willow (<i>Salix pyrifolia</i>)	10	●	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Black spruce	93	●●●●	UNK	Perennial	Absent	wind	Generalist	0
Tamarack	73	●●●	SI	Perennial	Absent	wind	Generalist	0
Paper birch	15	●	Di	Perennial	Present	wind	Generalist	0
White pine	8	●	SI	Perennial	Absent	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Red maple	-	-	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	-	-	UNK	Perennial	Absent	wind	Generalist	0
Tree Understory								
Black spruce	92	●●●	UNK	Perennial	Absent	wind	Generalist	0
Tamarack	65	●●●	SI	Perennial	Absent	wind	Generalist	0
Paper birch	32	●	Di	Perennial	Present	wind	Generalist	0
White pine	22	●	SI	Perennial	Absent	wind	Generalist	0
Northern red oak	27	●	SI	Perennial	Present	wind	Generalist	0
Red maple	23	●	D	Perennial	Absent	insects	Early spring insect	6
Balsam fir	18	●	UNK	Perennial	Absent	wind	Generalist	0

APn91 Northern Poor Fen

Pollinator Resources

Open Sphagnum peatlands with variable development of hummocks and hollows. Dominated either by fine-leaved sedges or low ericaceous shrubs. Present in small basins, on floating mats near lakes and ponds, and in large peatlands on glacial lake plains.

Examples of insect pollinators (and their associated host plants in parentheses) that use APn91 include:

Bees:

Andrena bradleyi (*Vaccinium*)

Andrena frigida (*Salix*)

Andrena sigmundi (*Salix*)

Osmia virga (*Vaccinium*)

Butterflies:

Boloria chariclea (*Salix*)

Erynnis icelus (*Salix*)

Tharsalea epixanthe (*Vaccinium oxycoccus*)

Moths:

Acleris oxycoccana (*Chamaedaphne calyculata*)

Apantesis speciosa (*Scheuchzeria palustris*)

Hyalophora columbia (*Larix laricina*)



Andrena frigida uses *Salix* (willow) species as a host plant. Photo: Michael Veit

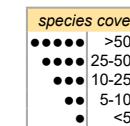


Tharsalea epixanthe (Bog Copper) uses *Vaccinium* (blueberry, cranberry) species as a host plant. Photo: Bob Dunlap

APn91 Northern Poor Fen

Pollinator Resources Table

APn91 Class Factsheet. Based on 180 plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Pitcher plant (<i>Sarracenia purpurea</i>)	54	•	SC	Perennial	Present	insects	Generalist	2
Round-leaved sundew (<i>Drosera rotundifolia</i>)	52	•	SC	Perennial	Absent	insects	Generalist	3
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	32	•	UNK	Perennial	Present	insects	Early spring insect	4
Buckbean (<i>Menyanthes trifoliata</i>)	28	•	H	Perennial	Present	insects	Early spring insect	5
Water horsetail (<i>Equisetum fluviatile</i>)	14	•	SC	Perennial	Present	wind, water	Generalist	0
Spatulate-leaved sundew (<i>Drosera intermedia</i>)	14	•	SC	Perennial	Absent	insects	Generalist	3
Marsh cinquefoil (<i>Potentilla palustris</i>)	11	•	SC	Perennial	Present	insects	Generalist	2
Grasses and Sedges								
Scheuchzeria (<i>Scheuchzeria palustris</i>)	51	••	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	50	••••	SI	Perennial	Present	wind	Generalist	0
Candle-lantern sedge (<i>Carex limosa</i>)	43	••	UNK	Perennial	Present	wind	Generalist	0
Bog wiregrass sedge (<i>Carex oligosperma</i>)	42	•••	UNK	Perennial	Present	wind	Generalist	0
White beak rush (<i>Rhynchospora alba</i>)	32	•••	UNK	Perennial	Absent	wind	Generalist	0
Tussock cottongrass (<i>Eriophorum vaginatum</i>)	30	•••	UNK	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	26	••	UNK	Perennial	Present	wind	Generalist	0
Tawny cottongrass (<i>Eriophorum virginicum</i>)	21	••	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	18	••	UNK	Perennial	Present	wind	Generalist	0
Few-fruited sedge (<i>Carex pauciflora</i>)	16	••	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	14	•	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Leatherleaf (<i>Chamaedaphne calyculata</i>)	98	••••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	79	••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Bog rosemary (<i>Andromeda glaucophylla</i>)	71	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Bog laurel (<i>Kalmia polifolia</i>)	65	•	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Labrador tea (<i>Ledum groenlandicum</i>)	33	•••	SC	Perennial	Present	insects	Early spring insect	3
Tall Shrubs								
Bog birch (<i>Betula pumila</i>)	44	•••	Di	Perennial	Present	wind	Generalist	0
Speckled alder (<i>Alnus incana</i>)	14	••	Di	Perennial	Present	wind	Generalist	0
Bog willow (<i>Salix pedicellaris</i>)	14	•	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Tamarack	17	•	SI	Perennial	Absent	wind	Generalist	0
Black spruce	14	•	UNK	Perennial	Absent	wind	Generalist	0
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Tree Understory								
Tamarack	59	••	SI	Perennial	Absent	wind	Generalist	0
Black spruce	50	••	UNK	Perennial	Absent	wind	Generalist	0

Paper birch	16	•	Di	Perennial	Present	wind	Generalist	0
White pine	12	•	SI	Perennial	Absent	wind	Generalist	0

ROs12 Southern Bedrock Outcrop

Pollinator Resources

Dry, open lichen-dominated plant communities on areas of exposed bedrock. Woody vegetation is sparse, and vascular plants are restricted to crevices, shallow soil deposits, and rainwater pools.

Examples of insect pollinators (and their associated host plants in parentheses) that use ROs12 include:

Bees:

Andrena brevipalpis (*Rhus*)

Heriades variolosus (Asteraceae)

Colletes brevicornis (*Campanula*)



Butterflies:

Hesperia ottoe (*Andropogon gerardii*)

Euphyes conspicua (Carex)

Tharsalea hyllus (*Polygonum*)

Moths:

Epiblema strenuana (*Ambrosia artemisiifolia*)

Caloptilia rhoifoliella (*Rhus glabra*)

Chlorochlamys chloroleucaria (*Achillea millefolium*)

Hypercompe scribonia (*Rubus allegheniensis*)

Andrena brevipalpis uses *Rhus* (sumac) species as a host plant. Photo: Michael Veit



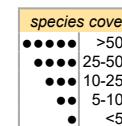
Hypercompe scribonia (giant leopard moth) uses *Rubus allegheniensis* (Allegheny blackberry) as a host plant.

Photo: Bob Dunlap

ROs12 Southern Bedrock Outcrop

Pollinator Resources Table

ROs12 Class Factsheet. Based on 28 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Common ragweed (<i>Ambrosia artemisiifolia</i>)	93	●	SC	Annual	Absent	wind	Generalist	0
Rock spikemoss (<i>Selaginella rupestris</i>)	89	●●●	SC	Perennial	Present	wind, water	Generalist	0
Prairie wild onion (<i>Allium stellatum</i>)	75	●	SC	Perennial	Present	insects	Generalist	2
Bluets (<i>Hedyotis longifolia</i>)	64	●	Distylous	Perennial	Absent	insects	Somewhat specific insect	6
Small-flowered fameflower (<i>Talinum parviflorum</i>)	61	●	SC	Perennial	Absent	insects	Generalist	3
Mock pennyroyal (<i>Hedeoma hispidum</i>)	57	●	SC	Annual	Absent	insects	Somewhat specific insect	5
Western androsace (<i>Androsace occidentalis</i>)	54	●	UNK	Annual	Absent	insects	Early spring insect	6
Brittle prickly pear (<i>Opuntia fragilis</i>)	39	●	SI	Perennial	Present	insects	Generalist	4
Field chickweed (<i>Cerastium arvense</i>)	36	●	GD	Perennial	Weakly	insects	Generalist	4
Gray goldenrod (<i>Solidago nemoralis</i>)	29	●	SI	Perennial	Present	insects	Generalist	4
Slender knotweed (<i>Polygonum tenue</i>)	29	●	UNK	Annual	Absent	insects	Generalist	5
Rusty woodsia (<i>Woodsia ilvensis</i>)	25	●	SC	Perennial	Present	wind, water	Generalist	0
Bastard toadflax (<i>Comandra umbellata</i>)	21	●	SC	Perennial	Present	insects	Early spring insect	3
Yarrow (<i>Achillea millefolium</i>)	21	●	SI	Perennial	Present	insects	Generalist	4
Red sorrel (<i>Rumex acetosella</i>)	21	●	D	Perennial	Absent	wind	Generalist	0
Sleepy catchfly (<i>Silene antirrhina</i>)	18	●	SC	Annual	Absent	insects	Somewhat specific insect	5
Arrow-leaved violet (<i>Viola sagittata</i>)	18	●	CL flowers	Perennial	Present	insects	Early spring insect	4
Harebell (<i>Campanula rotundifolia</i>)	14	●	± SI	Perennial	Present	insects	Generalist	4
Tall wormwood (<i>Artemisia campestris</i>)	14	●	GM	Perennial	Absent	wind	Generalist	0
Pursh's plantain (<i>Plantago patagonica</i>)	14	●	CL flowers	Annual	Absent	wind	Generalist	0
Green-flowered peppergrass (<i>Lepidium densiflorum</i>)	14	●	SC	Annual	Absent	insects	Early spring insect	5
Nodding chickweed (<i>Cerastium nutans</i>)	11	●	SI	Annual	Absent	insects	Early spring insect	7
Pale corydalis (<i>Corydalis sempervirens</i>)	11	●	SC	Biennial	Absent	insects	Early spring insect, Somewhat specific insect	5
Yellow whitlow grass (<i>Draba nemorosa</i>)	11	●	SC	Annual	Absent	insects	Generalist	4
Daisy fleabane (<i>Erigeron strigosus</i>)	11	●	A	Annual, bi-	Present	insects	Generalist	4
Northern bedstraw (<i>Galium boreale</i>)	11	●	SI	Perennial	Present	insects	Generalist	4
Round-headed bush clover (<i>Lespedeza capitata</i>)	11	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Hoary frostweed (<i>Helianthemum bicknellii</i>)	11	●	CH and CL	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Hairy panic grass (<i>Panicum lanuginosum</i>)	57	●	UNK	Perennial	Absent	wind	Generalist	0
Poverty grass (<i>Danthonia spicata</i>)	54	●	SC/si	Perennial	Absent	wind	Generalist	0
Short sedge (<i>Carex brevior</i>)	46	●	UNK	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	46	●	SI	Perennial	Present	wind	Generalist	0
Junegrass (<i>Koeleria pyramidata</i>)	32	●	SI	Perennial	Absent	wind	Generalist	0
Bicknell's sedge (<i>Carex bicknellii</i>)	29	●	UNK	Perennial	Present	wind	Generalist	0
Twin bentgrass (<i>Agrostis hyemalis</i>)	29	●	SI	Perennial	Absent	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	21	●●	SC	Perennial	Absent	wind	Generalist	0

Indian grass (<i>Sorghastrum nutans</i>)	14	••	SI	Perennial	Present	wind	Generalist	0
Spike rush sedge (<i>Carex stenophylla</i>)	14	•	UNK	Perennial	Present	wind	Generalist	0
Hairy grama (<i>Bouteloua hirsuta</i>)	11	••	A	Perennial	Present	wind	Generalist	0
Scribner's panic grass (<i>Panicum oligosanthes</i>)	11	•	UNK	Perennial	Absent	wind	Generalist	0
Low Shrubs								
Tall blackberries (<i>Rubus allegheniensis</i> and similar <i>Rubus</i> spp.)	18	•	Varies	Perennial	Present	insects	Generalist	Varies
Red raspberry (<i>Rubus idaeus</i>)	11	••	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Smooth sumac (<i>Rhus glabra</i>)	39	••	PD	Perennial	Present	insects	Generalist	4
Tree Seedlings or Saplings (< 6ft)								
Bur oak (<i>Quercus macrocarpa</i>)	14	•	SI	Perennial	Present	wind	Generalist	0
Eastern red cedar (<i>Juniperus virginiana</i>)	14	•	D	Perennial	Absent	wind	Generalist	0
Northern red oak (<i>Quercus rubra</i>)	14	•	SI	Perennial	Present	wind	Generalist	0

UPn12 Northern Dry Prairie

Pollinator Resources

Grass-dominated herbaceous communities on nearly level to steeply sloping sites with droughty soils. Moderate growing-season moisture deficits occur during most years, and severe moisture deficits are frequent, especially during periodic regional droughts. Historically, fire probably occurred every few years.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPn12 include:

Bees:

Colletes robertsonii (*Amorpha*)
Megachile campanulae (*Campanula*)
Perdita halictoides (*Physalis*)
Osmia distincta (*Penstemon*)

Butterflies:

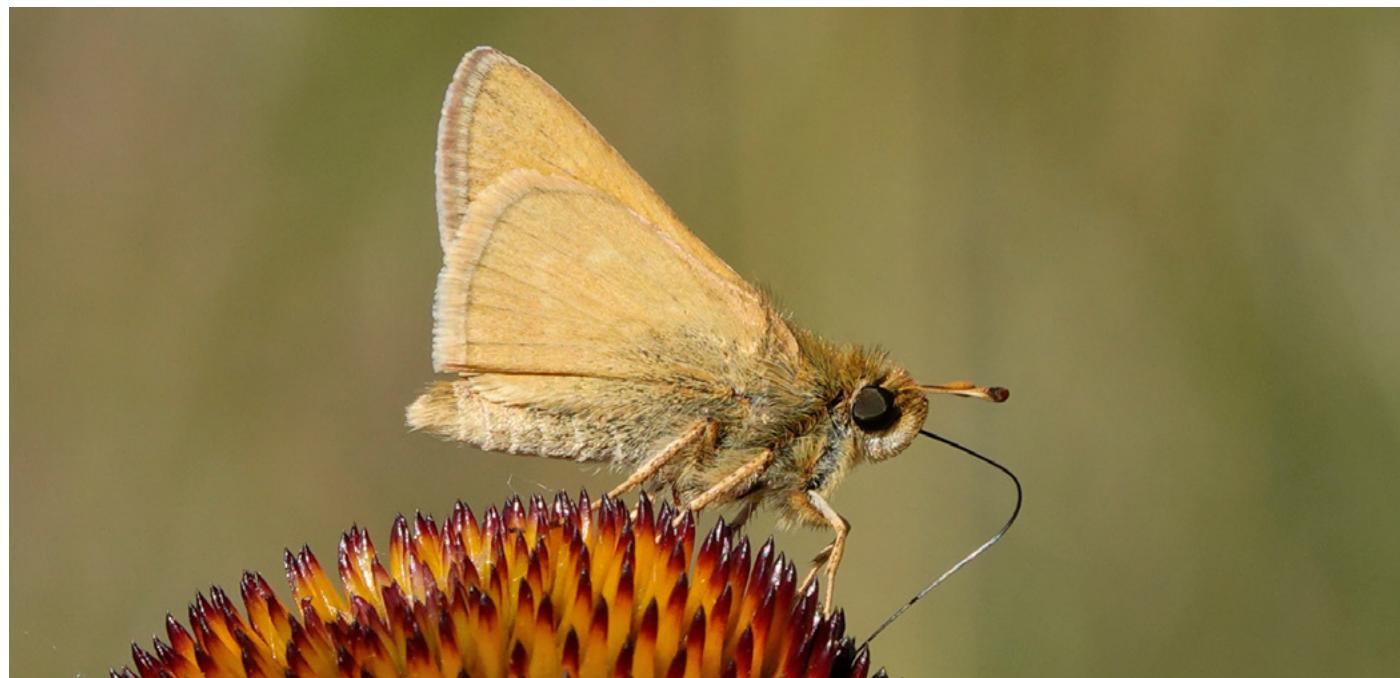
Hesperia dacotae (*Schizachyrium scoparium*,
Hesperostipa spartea)
Anatrytone logan (*Schizachyrium scoparium*)
Plebejus melissa melissa (*Astragalus crassicaulus*)

Moths:

Schinia lucens (*Amorpha canescens*)
Trichordestra legitima (*Schizachyrium scoparium*)
Aristotelia roseosuffusella (*Dalea purpurea*)



Schinia lucens (leadplant flower moth) uses *Amorpha canescens* (leadplant) as a host plant.
Photo: Rachel Kranz

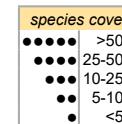


Hesperia dacotae (Dakota skipper) uses *Schizachyrium scoparium* (little bluestem) and *Hesperostipa spartea* (porcupine grass) as host plants. Photo: Bob Dunlap

UPn12 Northern Dry Prairie

Pollinator Resources Table

UPn12 Class Factsheet. Based on 58 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Purple prairie clover (<i>Dalea purpurea</i>)	78	•	SC	Perennial	Present	insects	Generalist	2
Heath aster (<i>Aster ericoides</i>)	76	•	SI	Perennial	Present	insects	Generalist	4
Harebell (<i>Campanula rotundifolia</i>)	74	•	± SI	Perennial	Present	insects	Generalist	4
Stiff sunflower (<i>Helianthus pauciflorus</i>)	69	••	SI	Perennial	Present	insects	Generalist	4
Dotted blazing star (<i>Liatris punctata</i>)	69	•	SI	Perennial	Present	insects	Generalist	4
Gray goldenrod (<i>Solidago nemoralis</i>)	67	•	SI	Perennial	Present	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	67	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Prairie wild onion (<i>Allium stellatum</i>)	66	•	SC	Perennial	Present	insects	Generalist	2
Northern bedstraw (<i>Galium boreale</i>)	59	••	SI	Perennial	Present	insects	Generalist	4
Hairy golden aster (<i>Chrysopsis villosa</i>)	57	•	UNK	Perennial	Weakly	insects	Generalist	3
Stiff goldenrod (<i>Solidago rigida</i>)	55	••	SI	Perennial	Present	insects	Generalist	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	55	•	SC	Perennial	Present	insects	Generalist	2
Bastard toad-flax (<i>Comandra umbellata</i>)	55	•	SC	Perennial	Present	insects	Early spring insect	3
Missouri goldenrod (<i>Solidago missouriensis</i>)	53	••	SI	Perennial	Present	insects	Generalist	4
Alumroot (<i>Heuchera richardsonii</i>)	53	•	SI	Perennial	Present	insects	Generalist	4
Pasque-flower (<i>Anemone patens</i>)	52	•	SC	Perennial	Present	insects	Generalist	2
Daisy fleabane (<i>Erigeron strigosus</i>)	50	•	A	Annual, bi-	Present	insects	Generalist	4
Tall cinquefoil (<i>Potentilla arguta</i>)	50	•	A	Perennial	Present	insects	Generalist	2
White sage (<i>Artemesia ludoviciana</i>)	50	•	SC	Perennial	Present	wind	Generalist	0
Prairie smoke (<i>Geum triflorum</i>)	50	•	UNK	Perennial	Present	insects	Early spring insect, Buzz pollination	5
Yarrow (<i>Achillea millefolium</i>)	48	•	SI	Perennial	Present	insects	Generalist	4
Silky aster (<i>Aster sericeus</i>)	47	••	SI	Perennial	Present	insects	Generalist	4
Rough blazing star (<i>Liatris aspera</i>)	43	•	SI	Perennial	Present	insects	Generalist	4
Prairie turnip (<i>Pediomelum esculentum</i>)	41	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
White prairie clover (<i>Dalea candida</i>)	41	•	UNK	Perennial	Present	insects	Generalist	3
Field pussytoes (<i>Antennaria neglecta</i> or <i>A. neodioica</i>)	41	•	A	Perennial	Present	wind	Generalist	0
Smooth blue aster (<i>Aster laevis</i>)	40	•	SI	Perennial	Present	insects	Generalist	4
Flodman's thistle (<i>Cirsium flodmanii</i>)	38	•	GD	Perennial	Weakly	insects	Generalist	4
Grooved yellow flax (<i>Linum sulcatum</i>)	36	•	SC	Annual	Absent	insects	Generalist	4
Tall wormwood or Tarragon (<i>Artemesia campestris</i> or <i>A. dracunculus</i>)	36	•	Varies	Perennial	Varies	wind	Generalist	0
Field chickweed (<i>Cerastium arvense</i>)	36	•	GD	Perennial	Weakly	insects	Generalist	4
Bearded birdfoot violet (<i>Viola pedatifida</i>)	34	•	CL flowers	Perennial	Present	insects	Early spring insect	4
Virginia ground cherry (<i>Physalis virginiana</i>)	33	•	SI	Perennial	Present	insects	Buzz pollination	6
Toothed evening primrose (<i>Calylophus serrulatus</i>)	33	•	SC	Perennial	Absent	insects	Generalist	3
Narrow-leaved purple coneflower (<i>Echinacea pallida</i>)	24	•	SI	Perennial	Absent	insects	Generalist	5
Wild bergamot (<i>Monarda fistulosa</i>)	24	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Blanketflower (<i>Gaillardia aristata</i>)	24	•	UNK	Perennial	Absent	insects	Generalist	4

Slender beard tongue (<i>Penstemon gracilis</i>)	24	●	SC	Perennial	Present	insects	Generalist	2
Plantain-leaved pussytoes (<i>Antennaria plantaginifolia</i>)	22	●	A	Perennial	Present	wind	Generalist	0
Whorled milkwort (<i>Polygala verticillata</i>)	22	●	CH	Annual	Absent	insects	Generalist	6
Prairie ragwort or Balsam ragwort (<i>Senecio plattensis</i> or <i>S. pauperulus</i>)	21	●	UNK	Varies	Present	insects	Generalist	Varies
White aster-like goldenrod (<i>Solidago ptarmicoides</i>)	21	●	SI	Perennial	Present	insects	Generalist	4
Ground plum (<i>Astragalus crassicarpus</i>)	21	●	UNK	Perennial	Present	insects	Early spring insect, Somewhat specific insect	4
Pale-spiked lobelia (<i>Lobelia spicata</i>)	21	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Prairie milk vetch (<i>Astragalus adsurgens</i>)	17	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Downy paintbrush (<i>Castilleja sessiliflora</i>)	17	●	SC	Perennial	Absent	insects	Early spring insect, Somewhat specific insect	4
Western ragweed (<i>Ambrosia psilostachya</i>)	14	●●	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Little bluestem (<i>Schizachyrium scoparium</i>)	84	●●●	UNK	Perennial	Present	wind	Generalist	0
Junegrass (<i>Koeleria pyramidalis</i>)	81	●	SI	Perennial	Absent	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	79	●●●	UNK	Perennial	Absent	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	76	●●●	SI	Perennial	Present	wind	Generalist	0
Blue grama (<i>Bouteloua gracilis</i>)	59	●●●	A	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	57	●●●	SC	Perennial	Absent	wind	Generalist	0
Plains muhly (<i>Muhlenbergia cuspidata</i>)	50	●●	UNK	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	45	●	UNK	Perennial	Weakly	wind	Generalist	0
Wilcox's panic grass (<i>Panicum wilcoxianum</i>)	36	●	UNK	Perennial	Absent	wind	Generalist	0
Sand reed-grass (<i>Calamovilfa longifolia</i>)	29	●●	UNK	Perennial	Present	wind	Generalist	0
Needle-and-thread grass (<i>Stipa comata</i>)	28	●●●	UNK	Perennial	Absent	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	26	●●	SI	Perennial	Present	wind	Generalist	0
Side-oats grama (<i>Bouteloua curtipendula</i>)	21	●●	A	Perennial	Present	wind	Generalist	0
Blunt sedge (<i>Carex obtusata</i>)	17	●●	UNK	Perennial	Present	wind	Generalist	0
Semi-Shrubs								
Leadplant (<i>Amorpha canescens</i>)	88	●●	SC	Perennial	Present	insects	Generalist	2
Sage wormwood (<i>Artemisia frigida</i>)	60	●●	UNK	Perennial	Present	wind	Generalist	0
Prairie rose (<i>Rosa arkansana</i>)	40	●●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Sand cherry (<i>Prunus pumila</i>)	38	●	SI	Perennial	Present	insects	Generalist	4
Snowberry or Wolfberry (<i>Symporicarpos occidentalis</i> or <i>S. albus</i>)	29	●	SC	Perennial	Present	insects	Generalist	2

UPn13 Northern Dry Savanna

Pollinator Resources

Sparsely treed and often shrubby communities with grass-dominated herbaceous ground layers on nearly level to steeply sloping sites with droughty soils. Moderate growing-season moisture deficits occur during most years, and severe moisture deficits are frequent, especially during periodic regional droughts. Trees are open grown, typically small, and gnarled. Historically, fire occurred every few years.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPn13 include:

Bees:

Andrena placata (*Solidago*)

Colletes andrewsi (*Heuchera richardsonii*)

Colletes robertsonii (*Dalea*)

Butterflies:

Danaus plexippus (*Asclepias*)

Polites origenes (*Schizachyrium scoparium*)

Argynnis cybele (*Viola*)

Moths:

Sitochroa chortalis (*Comandra umbellata*)

Chlorochlamys chloroleucaria (*Achillea millefolium*)

Pyrausta generosa (*Monarda fistulosa*)

Protoschinia nuchalis (*Artemisia dracunculus*)



Colletes andrewsi uses *Heuchera richardsonii* (prairie alumroot) as a host plant. Photo: Heather Holm



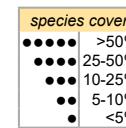
Protoschinia nuchalis (spotted sage moth) uses *Artemisia dracunculus* (tarragon) as a host plant.

Photo: Bob Dunlap

UPn13 Northern Dry Savanna

Pollinator Resources Table

UPn13 Class Factsheet. Based on 14 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
White sage (<i>Artemisia ludoviciana</i>)	93	●●	SC	Perennial	Present	wind	Generalist	0
Gray goldenrod (<i>Solidago nemoralis</i>)	93	●●	SI	Perennial	Present	insects	Generalist	4
Yarrow (<i>Achillea millefolium</i>)	79	●	SI	Perennial	Present	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	71	●	H	Perennial	Absent	insects	Somewhat specific insect	6
Smooth blue aster (<i>Aster laevis</i>)	71	●	SI	Perennial	Present	insects	Generalist	4
Rough blazing star (<i>Liatris aspera</i>)	71	●	SI	Perennial	Present	insects	Generalist	4
Missouri goldenrod (<i>Solidago missouriensis</i>)	64	●●	SI	Perennial	Present	insects	Generalist	4
Silky aster (<i>Aster sericeus</i>)	64	●●	SI	Perennial	Present	insects	Generalist	4
Field pussytoes (<i>Antennaria neglecta</i> or <i>A. neodioica</i>)	64	●	A	Perennial	Present	wind	Generalist	0
Northern bedstraw (<i>Galium boreale</i>)	64	●	SI	Perennial	Present	insects	Generalist	4
Bastard toad-flax (<i>Comandra umbellata</i>)	64	●	SC	Perennial	Present	insects	Early spring insect	3
Starry false Solomon's seal (<i>Smilacina stellata</i>)	64	●	UNK	Perennial	Present	insects	Early spring insect	4
Tall cinquefoil (<i>Potentilla arguta</i>)	64	●	A	Perennial	Present	insects	Generalist	2
Tall wormwood or Tarragon (<i>Artemisia campestris</i> or <i>A. dracunculus</i>)	57	●	Varies	Perennial	Varies	wind	Generalist	0
Wild bergamot (<i>Monarda fistulosa</i>)	57	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Harebell (<i>Campanula rotundifolia</i>)	57	●	± SI	Perennial	Present	insects	Generalist	4
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	50	●●	SI	Perennial	Present	insects	Generalist	4
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	50	●●	D	Perennial	Present	wind	Generalist	0
Stiff goldenrod (<i>Solidago rigidula</i>)	50	●●	SI	Perennial	Present	insects	Generalist	4
Prairie wild onion (<i>Allium stellatum</i>)	50	●	SC	Perennial	Present	insects	Generalist	2
White prairie clover (<i>Dalea candida</i>)	50	●	UNK	Perennial	Present	insects	Generalist	3
Purple prairie clover (<i>Dalea purpurea</i>)	50	●	SC	Perennial	Present	insects	Generalist	2
Field chickweed (<i>Cerastium arvense</i>)	50	●	GD	Perennial	Weakly	insects	Generalist	4
Plantain-leaved pussytoes (<i>Antennaria plantaginifolia</i>)	50	●	A	Perennial	Present	wind	Generalist	0
Stiff sunflower (<i>Helianthus pauciflorus</i>)	43	●●	SI	Perennial	Present	insects	Generalist	4
Oval-leaved milkweed (<i>Asclepias ovalifolia</i>)	43	●	SI	Perennial	Present	insects	Somewhat specific insect	5
American vetch (<i>Vicia americana</i>)	43	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Alumroot (<i>Heuchera richardsonii</i>)	43	●	SI	Perennial	Present	insects	Generalist	4
Blue giant hyssop (<i>Agastache foeniculum</i>)	36	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Heath aster (<i>Aster ericoides</i>)	36	●	SI	Perennial	Present	insects	Generalist	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	36	●	SC	Perennial	Present	insects	Generalist	2
Slender beard tongue (<i>Penstemon gracilis</i>)	36	●	SC	Perennial	Present	insects	Generalist	2
Daisy fleabane (<i>Erigeron strigosus</i>)	36	●	A	Annual, bi-	Present	insects	Generalist	4
Pale vetchling (<i>Lathyrus ochroleucus</i>)	36	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Canada goldenrod (<i>Solidago canadensis</i>)	36	●	SI	Perennial	Present	insects	Generalist	4
Rock spikemoss (<i>Selaginella rupestris</i>)	29	●●	SC	Perennial	Present	wind, water	Generalist	0
Prairie smoke (<i>Geum triflorum</i>)	29	●	UNK	Perennial	Present	insects	Early spring insect, Buzz pollination	5

Bearded birdfoot violet (<i>Viola palmata</i>)	29	●	CL flowers present	Perennial	Present	insects	Early spring insect	4
Hoary frostweed (<i>Helianthemum bicknellii</i>)	29	●	CH and CL flowers	Perennial	Present	insects	Generalist	3
Erect, Smooth, or Illinois carrion-flower*	29	●	D	Perennial	Present	insects	Somewhat specific insect	5
Grasses and Sedges								
Big bluestem (<i>Andropogon gerardii</i>)	93	●●●	SI	Perennial	Present	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	93	●●●	UNK	Perennial	Absent	wind	Generalist	0
Junegrass (<i>Koeleria pyramidata</i>)	71	●	SI	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	50	●	UNK	Perennial	Weakly	wind	Generalist	0
Sand reed-grass (<i>Calamovilfa longifolia</i>)	43	●●	UNK	Perennial	Present	wind	Generalist	0
Little bluestem (<i>Schizachyrium scoparium</i>)	36	●●●	UNK	Perennial	Present	wind	Generalist	0
Nodding wild rye (<i>Elymus canadensis</i>)	36	●	SC	Perennial	Absent	wind	Generalist	0
Blue grama (<i>Bouteloua gracilis</i>)	29	●●●	A	Perennial	Present	wind	Generalist	0
Sand dropseed (<i>Sporobolus cryptandrus</i>)	29	●	UNK	Perennial	Absent	wind	Generalist	0
Blunt sedge (<i>Carex obtusata</i>)	29	●	UNK	Perennial	Present	wind	Generalist	0
Kalm's brome (<i>Bromus kalmii</i>)	29	●	SC	Perennial	Absent	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	29	●	SC	Perennial	Absent	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica var. pensylvanica</i>)	21	●●	SC	Perennial	Present	wind	Generalist	0
Schweinitz's nut-sedge (<i>Cyperus schweinitzii</i>)	21	●	UNK	Perennial	Present	wind	Generalist	0
Semi-Shrubs								
Poison ivy (<i>Toxicodendron rydbergii</i>)	64	●●	D	Perennial	Present	insects	Generalist	4
Prairie rose (<i>Rosa arkansana</i>)	64	●	SC	Perennial	Present	insects	Generalist	2
Leadplant (<i>Amorpha canescens</i>)	50	●●●	SC	Perennial	Present	insects	Generalist	2
Sage wormwood (<i>Artemesia frigida</i>)	21	●	UNK	Perennial	Present	wind	Generalist	0
Shrubs								
Snowberry and Wolfberry (<i>Symporicarpos albus</i> or <i>S. occidentalis</i>)	64	●●	SC	Perennial	Present	insects	Generalist	2
Saskatoon juneberry (<i>Amelanchier alnifolia</i>)	64	●	UNK	Perennial	Present	insects	Early spring insect	4
American hazelnut (<i>Corylus americana</i>)	57	●●●	Di	Perennial	Present	wind	Generalist	0
Chokecherry (<i>Prunus virginiana</i>)	57	●	SI	Perennial	Present	insects	Early spring insect	5
Sand cherry (<i>Prunus pumila</i>)	36	●	SI	Perennial	Present	insects	Generalist	4
Meadowsweet (<i>Spiraea alba</i>)	29	●	SC	Perennial	Present	insects	Generalist	2
Prairie willow (<i>Salix humilis</i>)	21	●	D	Perennial	Present	insects	Early spring insect	5
Creeping juniper (<i>Juniperus horizontalis</i>)	14	●	D	Perennial	Absent	wind	Generalist	0
Tree Canopy								
Bur oak	86	●●●	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	-	-	D	Perennial	Present	wind	Generalist	0
Tree Shrub Layer								
Bur oak	100	●●	SI	Perennial	Present	wind	Generalist	0
Quaking aspen	29	●	D	Perennial	Present	wind	Generalist	0

*Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea* or *S. illinoensis*)

UPn23 Northern Mesic Prairie

Pollinator Resources

Grass-dominated but forb-rich herbaceous communities on somewhat poorly drained to well-drained loam soils mainly formed in unsorted glacial till, sometimes in a thin loess layer over till, and locally in lacustrine sediments and outwash deposits. Communities in this class occur primarily on level to gently rolling sites. Drought stress is irregular in occurrence and usually not severe.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPn23 include:

Bees:

Andrena ziziae (*Zizia*)

Macropis nuda (*Lysimachia*)

Colletes brevicornis (*Campanula*)

Butterflies:

Chlosyne nycteis (*Rudbeckia hirta*)

Chlosyne gorgone (*Lysimachia quadriflora*)

Papilio polyxenes (*Zizia aurea*)

Moths:

Dichomeris flavocostella (*Solidago rigida*)

Eugonobapta nivosaria (*Thalictrum dasycarpum*)

Synchlora aerata (*Rudbeckia hirta*)

Schinia Indiana (*Phlox pilosa*)



Andrena ziziae (golden-alexanders mining bee) uses *Zizia* (Alexanders) species as a host plant.

Photo: Heather Holm



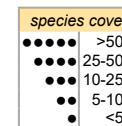
Synchlora aerata (wavy-lined emerald moth) uses *Rudbeckia hirta* (black-eyed Susan) as a host plant.

Photo: Kyle Johnson

UPn23 Northern Mesic Prairie

Pollinator Resources Table

UPn23 Class Factsheet. Based on 110 plots. November, 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Northern bedstraw (<i>Galium boreale</i>)	88	••	SI	Perennial	Present	insects	Generalist	4
Purple prairie clover (<i>Dalea purpurea</i>)	88	•	SC	Perennial	Present	insects	Generalist	2
Canada goldenrod (<i>Solidago canadensis</i>)	85	••	SI	Perennial	Present	insects	Generalist	4
Heath aster (<i>Aster ericoides</i>)	84	••	SI	Perennial	Present	insects	Generalist	4
Stiff goldenrod (<i>Solidago rigidia</i>)	82	•	SI	Perennial	Present	insects	Generalist	4
Maximilian's sunflower (<i>Helianthus maximiliani</i>)	75	•	SI	Perennial	Present	insects	Generalist	4
Heart-leaved alexanders (<i>Zizia aptera</i>)	75	•	SC	Perennial	Absent	insects	Generalist	3
Black-eyed Susan (<i>Rudbeckia hirta</i>)	74	•	SI	Biennial or	Absent	insects	Generalist	6
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	71	••	D	Perennial	Present	wind	Generalist	0
Smooth blue aster (<i>Aster laevis</i>)	62	•	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	57	•	SC	Perennial	Present	insects	Early spring insect	3
White camass (<i>Zigadenus elegans</i>)	56	•	SI	Perennial	Present	insects	Generalist	4
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	55	•	SC	Perennial	Present	insects	Generalist	2
Gray goldenrod (<i>Solidago nemoralis</i>)	51	•	SI	Perennial	Present	insects	Generalist	4
Golden alexanders (<i>Zizia aurea</i>)	51	•	SC	Perennial	Absent	insects	Generalist	3
Harebell (<i>Campanula rotundifolia</i>)	48	•	± SI	Perennial	Present	insects	Generalist	4
Bastard toadflax (<i>Comandra umbellata</i>)	47	•	SC	Perennial	Present	insects	Early spring insect	3
Wild bergamot (<i>Monarda fistulosa</i>)	44	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Flodman's thistle (<i>Cirsium flodmanii</i>)	43	•	GD	Perennial	Weakly	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	41	•	H	Perennial	Absent	insects	Somewhat specific insect	6
White aster-like goldenrod (<i>Solidago ptarmicoides</i>)	40	•	SI	Perennial	Present	insects	Generalist	4
Stiff sunflower (<i>Helianthus pauciflorus</i>)	35	•	SI	Perennial	Present	insects	Generalist	4
Northern plains blazing star (<i>Liatris ligulistylis</i>)	35	•	UNK	Perennial	Present	insects	Generalist	3
Rough blazing star (<i>Liatris aspera</i>)	34	•	SI	Perennial	Present	insects	Generalist	4
Clasping dogbane (<i>Apocynum sibiricum</i>)	34	•	SI	Perennial	Present	insects	Generalist	4
Giant or Sawtooth sunflower (<i>Helianthus giganteus</i> or <i>H. grosseserratus</i>)	33	••	SI	Perennial	Present	insects	Generalist	4
Pale-spiked lobelia (<i>Lobelia spicata</i>)	32	•	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Glaucous false dandelion (<i>Agoseris glauca</i>)	32	•	GD	Perennial	Absent	insects	Generalist	5
Wood lily (<i>Lilium philadelphicum</i>)	32	•	SI	Perennial	Present	insects	Generalist	4
Prairie loosestrife (<i>Lysimachia quadriflora</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Yarrow (<i>Achillea millefolium</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Prairie wild onion (<i>Allium stellatum</i>)	31	•	SC	Perennial	Present	insects	Generalist	2
Wild licorice (<i>Glycyrrhiza lepidota</i>)	30	••	UNK	Perennial	Present	insects	Somewhat specific insect	4
Golden or false golden ragwort (<i>Senecio aureus</i> or <i>S. pseudoaureus</i>)	29	•	SI	Perennial	Varies	insects	Generalist	Varies
Silverleaf scurfpea (<i>Pediomelum argophyllum</i>)	29	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Smooth rattlesnakeroot (<i>Prenanthes racemosa</i>)	29	•	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	28	•	SC	Perennial	Present	insects	Generalist	2

Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	26	●	A	Perennial	Present	insects	Generalist	2
Wood betony (<i>Pedicularis canadensis</i>)	25	●	UNK	Perennial	Present	insects	Buzz pollination	5
Indian paintbrush (<i>Castilleja coccinea</i>)	25	●	SC	Annual or	Present	insects	Early spring insect, Somewhat specific insect	5
Prairie phlox (<i>Phlox pilosa</i>)	24	●	SI	Perennial	Absent	insects	Early spring insect, Somewhat specific insect	6
White prairie clover (<i>Dalea candida</i>)	22	●	UNK	Perennial	Present	insects	Generalist	3
Marsh vetchling (<i>Lathyrus palustris</i>)	22	●	SI	Perennial	Present	insects	Somewhat specific insect	5
White sage (<i>Artemisia ludoviciana</i>)	20	●	SC	Perennial	Present	wind	Generalist	0
Great blazing star (<i>Liatris pycnostachya</i>)	20	●●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Big bluestem (<i>Andropogon gerardii</i>)	97	●●●●	SI	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	69	●●●	SC	Perennial	Absent	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	64	●●●	SI	Perennial	Present	wind	Generalist	0
Little bluestem (<i>Schizachyrium scoparium</i>)	62	●●●	UNK	Perennial	Present	wind	Generalist	0
Prairie cordgrass (<i>Spartina pectinata</i>)	54	●●	UNK	Perennial	Present	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	53	●	UNK	Perennial	Weakly	wind	Generalist	0
Mat muhly grass (<i>Muhlenbergia richardsonis</i>)	52	●●●	UNK	Perennial	Present	wind	Generalist	0
Junegrass (<i>Koeleria pyramidata</i>)	51	●	SI	Perennial	Absent	wind	Generalist	0
Kalm's brome (<i>Bromus kalmii</i>)	41	●	SC	Perennial	Absent	wind	Generalist	0
Switchgrass (<i>Panicum virgatum</i>)	36	●●	SC	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	36	●	UNK	Perennial	Present	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	35	●●	UNK	Perennial	Absent	wind	Generalist	0
Rigid sedge (<i>Carex tetanica</i>)	34	●	UNK	Perennial	Present	wind	Generalist	0
Tufted hair grass (<i>Deschampsia cespitosa</i>)	29	●●	UNK	Perennial	Absent	wind	Generalist	0
Narrow reed grass (<i>Calamagrostis stricta</i>)	25	●●	A	Perennial	Present	wind	Generalist	0
Leiberg's panic grass (<i>Panicum leibergii</i>)	24	●●	UNK	Perennial	Present	wind	Generalist	0
Semi-Shrubs								
Prairie rose (<i>Rosa arkansana</i>)	48	●	SC	Perennial	Present	insects	Generalist	2
Fragrant false indigo (<i>Amorpha nana</i>)	26	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Leadplant (<i>Amorpha canescens</i>)	23	●●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Bebb's willow (<i>Salix bebbiana</i>)	26	●●	D	Perennial	Present	insects	Early spring insect	5
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	21	●●	SC	Perennial	Absent	insects	Generalist	3
Trees								
Quaking aspen	17	●●●	D	Perennial	Present	wind	Generalist	0

UPs13 Southern Dry Prairie

Pollinator Resources

Grass-dominated herbaceous communities on level to steeply sloping sites with droughty soils. Moderate growing-season moisture deficits occur most years, and severe moisture deficits are frequent, especially during periodic regional droughts. Historically, fires probably occurred every few years.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPs13 include:

Bees:

Xenoglossa albata (*Dalea purpurea*)
Colletes mandibularis (*Amorpha canescens*)
Colletes solidaginis (*Solidago*)



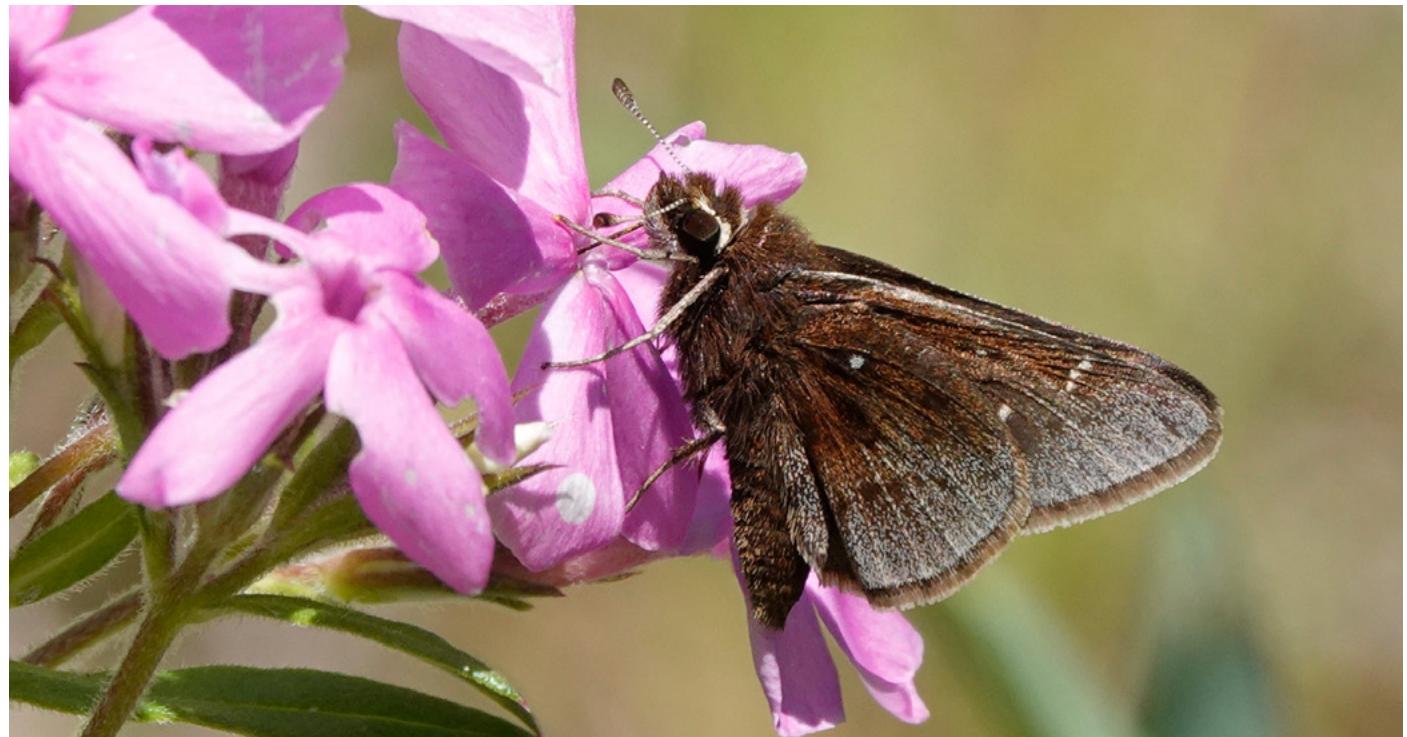
Butterflies:

Atrytonopsis hianna (*Schizachyrium scoparium*)
Hesperia dacotae (*Bouteloua curtipendula*)
Danaus plexippus (*Asclepias*)
Chlosyne gorgone (*Helianthus*)

Moths:

Trichordestra legitima (*Schizachyrium scoparium*)
Anicla tenuescens (*Sporobolus heterolepis*)
Cycnia collaris (*Asclepias verticillata*)

Colletes solidaginis (goldenrod cellophane bee) uses *Solidago* (goldenrod) species as a host plant.
Photo: Michael Veit

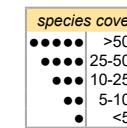


Atrytonopsis hianna (dusted skipper) uses *Schizachyrium scoparium* (little bluestem) as a host plant.
Photo: Bob Dunlap

UPs13 Southern Dry Prairie

Pollinator Resources Table

UPs13 Class Factsheet. Based on 219 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Purple prairie clover (<i>Dalea purpurea</i>)	72	•	SC	Perennial	Present	insects	Generalist	2
Gray goldenrod (<i>Solidago nemoralis</i>)	61	•	SI	Perennial	Present	insects	Generalist	4
Silky aster (<i>Aster sericeus</i>)	61	•	SI	Perennial	Present	insects	Generalist	4
Heath aster (<i>Aster ericoides</i>)	60	••	SI	Perennial	Present	insects	Generalist	4
Stiff goldenrod (<i>Solidago rigida</i>)	53	•	SI	Perennial	Present	insects	Generalist	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	53	•	SC	Perennial	Present	insects	Generalist	2
Bearded birdfoot violet (<i>Viola pedatifida</i>)	47	•	CL flowers	Perennial	Present	insects	Early spring insect	4
Rough blazing star (<i>Liatris aspera</i>)	45	•	SI	Perennial	Present	insects	Generalist	4
Daisy fleabane (<i>Erigeron strigosus</i>)	43	•	A	Annual, bi-	Present	insects	Generalist	4
Pasque-flower (<i>Anemone patens</i>)	42	•	SC	Perennial	Present	insects	Generalist	2
Stiff sunflower (<i>Helianthus pauciflorus</i>)	41	••	SI	Perennial	Present	insects	Generalist	4
Narrow-leaved purple coneflower (<i>Echinacea pallida</i>)	40	•	SI	Perennial	Absent	insects	Generalist	5
Tall cinquefoil (<i>Potentilla arguta</i>)	40	•	A	Perennial	Present	insects	Generalist	2
Bastard toad-flax (<i>Comandra umbellata</i>)	37	•	SC	Perennial	Present	insects	Early spring insect	3
Prairie turnip (<i>Pediomelum esculentum</i>)	37	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Prairie wild onion (<i>Allium stellatum</i>)	36	•	SC	Perennial	Present	insects	Generalist	2
Dotted blazing star (<i>Liatris punctata</i>)	34	•	SI	Perennial	Present	insects	Generalist	4
Hoary puccoon (<i>Lithospermum canescens</i>)	32	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Aromatic aster (<i>Aster oblongifolius</i>)	30	•	SI	Perennial	Present	insects	Generalist	4
Virginia ground cherry (<i>Physalis virginiana</i>)	30	•	SI	Perennial	Present	insects	Buzz pollination	6
Flodman's thistle (<i>Cirsium flodmanii</i>)	29	•	GD	Perennial	Weakly	insects	Generalist	4
Bird's foot coreopsis (<i>Coreopsis palmata</i>)	28	••	SI	Perennial	Present	insects	Generalist	4
Grooved yellow flax (<i>Linum sulcatum</i>)	28	•	SC	Annual	Absent	insects	Generalist	4
Western ragweed (<i>Ambrosia psilostachya</i>)	26	••	UNK	Perennial	Present	wind	Generalist	0
Canada goldenrod (<i>Solidago canadensis</i>)	25	•	SI	Perennial	Present	insects	Generalist	4
Heart-leaved alexanders (<i>Zizia aptera</i>)	25	•	SC	Perennial	Absent	insects	Generalist	3
Wild bergamot (<i>Monarda fistulosa</i>)	25	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Harebell (<i>Campanula rotundifolia</i>)	25	•	± SI	Perennial	Present	insects	Generalist	4
Toothed evening primrose (<i>Calylophus serrulatus</i>)	25	•	SC	Perennial	Absent	insects	Generalist	3
Missouri goldenrod (<i>Solidago missouriensis</i>)	24	•	SI	Perennial	Present	insects	Generalist	4
Skyblue aster (<i>Aster oolentangiensis</i>)	24	•	SI	Perennial	Present	insects	Generalist	4
Mock pennyroyal (<i>Hedeoma hispida</i>)	24	•	SC	Annual	Absent	insects	Somewhat specific insect	5
Prairie sagewort (<i>Artemisia frigida</i>)	23	••	UNK	Perennial	Present	wind	Generalist	0
Hoary vervain (<i>Verbena stricta</i>)	23	•	SC	Perennial	Present	insects	Generalist	2
Flowering spurge (<i>Euphorbia corollata</i>)	22	•	SI	Perennial	Present	insects	Generalist	4
Whorled milkweed (<i>Asclepias verticillata</i>)	21	•	SI	Perennial	Absent	insects	Somewhat specific insect	6
Field blue-eyed grass (<i>Sisyrinchium campestre</i>)	21	•	SI	Perennial	Absent	insects	Early spring insect	6

Tall wormwood or Tarragon (<i>Artemisia spp.</i>)*	20	●	Varies	Perennial	Varies	wind	Generalist	0
Hairy golden aster (<i>Chrysopsis villosa</i>)	20	●	UNK	Perennial	Weakly	insects	Generalist	3
Prairie or Balsam ragwort (<i>Senecio plattensis</i> or <i>S. pauperculus</i>)	20	●	UNK	Varies	Present	insects	Generalist	Varies
False boneset (<i>Kuhnia eupatorioides</i>)	19	●	UNK	Perennial	Absent	insects	Generalist	4
False gromwell (<i>Onosmodium molle</i>)	19	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Green milkweed (<i>Asclepias viridiflora</i>)	19	●	SI	Perennial	Absent	insects	Somewhat specific insect	6
Narrow-leaved puccoon (<i>Lithospermum incisum</i>)	17	●	CH/CL	Perennial	Absent	insects	Somewhat specific insect	5
Plantain-leaved pussytoes (<i>Antennaria plantaginifolia</i>)	16	●	A	Perennial	Present	wind	Generalist	0
Hairy puccoon (<i>Lithospermum carolinense</i>)	13	●	H	Perennial	Absent	insects	Somewhat specific insect	6
Western spiderwort (<i>Tradescantia occidentalis</i>)	7	●	UNK	Perennial	Present	insects	Generalist	3
Silky prairie clover (<i>Dalea villosa</i>)	6	●●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Little bluestem (<i>Schizachyrium scoparium</i>)	88	●●●	UNK	Perennial	Present	wind	Generalist	0
Side-oats grama (<i>Bouteloua curtipendula</i>)	79	●●●	A	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	73	●●●	SI	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	58	●●●	SC	Perennial	Absent	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	57	●●●	UNK	Perennial	Absent	wind	Generalist	0
Plains muhly (<i>Muhlenbergia cuspidata</i>)	56	●●	UNK	Perennial	Absent	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	45	●●●	SI	Perennial	Present	wind	Generalist	0
Junegrass (<i>Koeleria pyramidata</i>)	43	●●	SI	Perennial	Absent	wind	Generalist	0
Hairy grama (<i>Bouteloua hirsuta</i>)	30	●●	A	Perennial	Present	wind	Generalist	0
Scribner's panic grass (<i>Panicum oligosanthes</i>)	26	●	UNK	Perennial	Absent	wind	Generalist	0
Wilcox's panic grass (<i>Panicum wilcoxianum</i>)	22	●	UNK	Perennial	Absent	wind	Generalist	0
Blue grama (<i>Bouteloua gracilis</i>)	16	●●●	A	Perennial	Present	wind	Generalist	0
Sand reed-grass (<i>Calamovilfa longifolia</i>)	16	●●	UNK	Perennial	Present	wind	Generalist	0
Needle-and-thread grass (<i>Stipa comata</i>)	13	●●●	UNK	Perennial	Absent	wind	Generalist	0
Half-Shrubs								
Leadplant (<i>Amorpha canescens</i>)	71	●●	SC	Perennial	Present	insects	Generalist	2
Prairie rose (<i>Rosa arkansana</i>)	40	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Smooth sumac (<i>Rhus glabra</i>)	29	●●	PD	Perennial	Present	insects	Generalist	4

* Tall wormwood or Tarragon (*Artemisia dracunculus* or *A. campestris*)

UPs14 Southern Dry Savanna Pollinator Resources

Sparsely treed communities with grass-dominated herbaceous ground layers on nearly level to steeply sloping sites with droughty soils. Moderate growing-season moisture deficits occur during most years, and severe moisture deficits are frequent, especially during periodic regional droughts. Trees are open grown, typically small and gnarled.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPs14 include:

Bees:

Andrena simplex (*Solidago*)
Perdita halictoides (*Physalis*)
Colletes nudus (*Rhus*)

Butterflies:

Satyrrium edwardsii (*Quercus*)
Satyrrium titus (*Prunus*)
Anatrytone logan (*Schizachyrium scoparium*)

Moths:

Cameraria hamadryadella (*Quercus macrocarpa*)
Pygarctia spraguei (*Euphorbia corollata*)
Pyrausta signatalis (*Monarda punctata*)



Anatrytone logan (Delaware skipper) uses *Schizachyrium scoparium* (little bluestem) as a host plant. Photo: Bob Dunlap

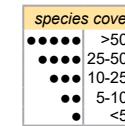


Colletes nudus (sumac cellophane bee) uses *Rhus* (sumac) species as a host plant. Photo: Nick Dorian

UPs14 Southern Dry Savanna

Pollinator Resources Table

UPs14 Class Factsheet. Based on 30 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Western ragweed (<i>Ambrosia psilostachya</i>)	80	••	UNK	Perennial	Present	wind	Generalist	0
Virginia ground cherry (<i>Physalis virginiana</i>)	73	•	SI	Perennial	Present	insects	Buzz pollination	6
Hairy puccoon (<i>Lithospermum carolinense</i>)	70	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Gray goldenrod (<i>Solidago nemoralis</i>)	67	•	SI	Perennial	Present	insects	Generalist	4
Hoary frostweed (<i>Helianthemum bicknellii</i>)	67	•	CH and CL	Perennial	Present	insects	Generalist	3
Horseweed (<i>Conyza canadensis</i>)	60	•	SC	Annual	Absent	insects	Generalist	4
White sage (<i>Artemisia ludoviciana</i>)	53	•	SC	Perennial	Present	wind	Generalist	0
Bearded birdfoot violet (<i>Viola palmata</i>)	53	•	CL flowers	Perennial	Present	insects	Early spring insect	4
Starry false Solomon's seal (<i>Smilacina stellata</i>)	47	•	UNK	Perennial	Present	insects	Early spring insect	4
Purple prairie clover (<i>Dalea purpurea</i>)	47	•	SC	Perennial	Present	insects	Generalist	2
Common milkweed (<i>Asclepias syriaca</i>)	40	•	SI/sc	Perennial	Present	insects	Somewhat specific insect	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	40	•	SC	Perennial	Present	insects	Generalist	2
Hoary puccoon (<i>Lithospermum canescens</i>)	40	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Prairie pinweed (<i>Lechea stricta</i>)	33	•	CH	Perennial	Absent	insects	Generalist	5
Round-headed bush clover (<i>Lespedeza capitata</i>)	33	•	SC	Perennial	Absent	insects	Somewhat specific insect	4
Skyblue aster (<i>Aster oolentangiensis</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Rough blazing star (<i>Liatris aspera</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Rock spikemoss (<i>Selaginella rupestris</i>)	30	•	SC	Perennial	Present	wind, water	Generalist	0
Missouri goldenrod (<i>Solidago missouriensis</i>)	30	•	SI	Perennial	Present	insects	Generalist	4
Bird's foot coreopsis (<i>Coreopsis palmata</i>)	30	•	SI	Perennial	Present	insects	Generalist	4
Harebell (<i>Campanula rotundifolia</i>)	30	•	± SI	Perennial	Present	insects	Generalist	4
Hairy golden aster (<i>Chrysopsis villosa</i>)	30	•	UNK	Perennial	Weakly	insects	Generalist	3
Bastard toad-flax (<i>Comandra umbellata</i>)	30	•	SC	Perennial	Present	insects	Early spring insect	3
Heath aster (<i>Aster ericoides</i>)	27	•	SI	Perennial	Present	insects	Generalist	4
Showy goldenrod (<i>Solidago speciosa</i>)	27	•	SI	Perennial	Present	insects	Generalist	4
Flowering spurge (<i>Euphorbia corollata</i>)	23	•	SI	Perennial	Present	insects	Generalist	4
Mock pennyroyal (<i>Hedeoma hispida</i>)	23	•	SC	Annual	Absent	insects	Somewhat specific insect	5
Large-flowered beard tongue (<i>Penstemon grandiflorus</i>)	23	•	UNK	Perennial	Present	insects	Generalist	3
Erect, Smooth, or Illinois carion-flower (<i>Smilax spp.</i>)*	23	•	D	Perennial	Present	insects	Somewhat specific insect	5
Tall cinquefoil (<i>Potentilla arguta</i>)	23	•	A	Perennial	Present	insects	Generalist	2
Stiff sunflower (<i>Helianthus pauciflorus</i>)	20	••	SI	Perennial	Present	insects	Generalist	4
Horsemint (<i>Monarda punctata</i>)	20	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Tall wormwood or Tarragon (<i>Artemisia spp.</i>)**	20	•	Varies	Perennial	Varies	wind	Generalist	0
Silky prairie clover (<i>Dalea villosa</i>)	17	•	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Junegrass (<i>Koeleria pyramidata</i>)	80	•	SI	Perennial	Absent	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	73	•••	UNK	Perennial	Absent	wind	Generalist	0

Little bluestem (<i>Schizachyrium scoparium</i>)	70	●●●	UNK	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	67	●●	SI	Perennial	Present	wind	Generalist	0
Hay sedge (<i>Carex foenea</i>)	53	●●	UNK	Perennial	Present	wind	Generalist	0
Purple lovegrass (<i>Eragrostis spectabilis</i>)	53	●	UNK	Perennial	Present	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	40	●●●	SI	Perennial	Present	wind	Generalist	0
Muhlenberg's sedge (<i>Carex muhlenbergia</i>)	37	●●	UNK	Perennial	Present	wind	Generalist	0
Pennsylvania sedge (<i>Carex pensylvanica</i>)	37	●●	SC	Perennial	Present	wind	Generalist	0
Sand reed-grass (<i>Calamovilfa longifolia</i>)	37	●	UNK	Perennial	Present	wind	Generalist	0
Switchgrass (<i>Panicum virgatum</i>)	37	●	SC	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	37	●●	SC	Perennial	Absent	wind	Generalist	0
Long-leaved panic grass (<i>Panicum perlongum</i>)	37	●	UNK	Perennial	Absent	wind	Generalist	0
Scribner's panic grass (<i>Panicum oligosanthes</i>)	30	●●	UNK	Perennial	Absent	wind	Generalist	0
Hairy grama (<i>Bouteloua hirsuta</i>)	30	●	A	Perennial	Present	wind	Generalist	0
Side-oats grama (<i>Bouteloua curtipendula</i>)	23	●●●	A	Perennial	Present	wind	Generalist	0
Fall witch grass (<i>Leptoloma cognatum</i>)	23	●	UNK	Perennial	Absent	wind	Generalist	0
Climbing Plants								
Virginia creeper (<i>Parthenocissus vitacea</i> or <i>P. quinquefolia</i>)	47	●	SC	Perennial	Present	insects	Generalist	2
Low-Shrubs								
Leadplant (<i>Amorpha canescens</i>)	53	●	SC	Perennial	Present	insects	Generalist	2
Prairie rose (<i>Rosa arkansana</i>)	43	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Chokecherry (<i>Prunus virginiana</i>)	50	●	SI	Perennial	Present	insects	Early spring insect	5
American hazelnut (<i>Corylus americana</i>)	43	●	Di	Perennial	Present	wind	Generalist	0
Smooth sumac (<i>Rhus glabra</i>)	40	●●	PD	Perennial	Present	insects	Generalist	4
Low juneberry or Saskatoon (<i>Amelanchier humilis</i> or <i>A. alnifolia</i>)	37	●	UNK	Perennial	Present	insects	Early spring insect	4
Canopy Trees								
Bur oak	43	●●●	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	27	●●●	SI	Perennial	Present	wind	Generalist	0
Black oak	23	●●●	SI	Perennial	Present	wind	Generalist	0
Jack Pine	17	●●●	UNK	Perennial	Absent	wind	Generalist	0
Shrub Layer								
Bur oak	67	●	SI	Perennial	Present	wind	Generalist	0
Northern pin oak	37	●	SI	Perennial	Present	wind	Generalist	0
Black oak	23	●●	SI	Perennial	Present	wind	Generalist	0
Jack Pine	17	●	UNK	Perennial	Absent	wind	Generalist	0

*Erect, Smooth, or Illinois carrion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*); ** Tall wormwood or Tarragon (*Artemisia dracunculus* or *A. campestris*)

UPs23 Southern Mesic Prairie

Pollinator Resources

Grass-dominated but forb-rich herbaceous communities on somewhat poorly drained to well-drained loam soils mainly formed in unsorted glacial till, sometimes in a thin loess layer over till, and locally in lacustrine sediments and outwash deposits. Communities in this class occur primarily on level to gently rolling sites. Drought stress is irregular in occurrence and usually not severe.

Examples of insect pollinators (and their associated host plants in parentheses) that use UPs23 include:

Bees:

Andrena vernalis (*Zizia*)
Colletes andrewsi (*Heuchera richardsonii*)
Xenoglossa albata (*Dalea purpurea*)
Andrena rudbeckiae (*Ratibida*, *Rudbeckia*)



Xenoglossa albata uses *Dalea purpurea* (purple prairie clover) as a host plant. Photo: Heather Holm

Butterflies:

Anatrytone logan (*Andropogon gerardii*)
Danaus plexippus (*Asclepias*)
Polites origenes (*Schizachyrium scoparium*)

Moths:

Dichomeris flavocostella (*Solidago rigida*)
Papaipema rigida (*Heliopsis helianthoides*)
Chlorochlamys chloroleucaria (*Dalea candida*)

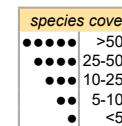


Polites origenes (crossline skipper) uses *Schizachyrium scoparium* (little bluestem) as a host plant.
Photo: Bob Dunlap

UPs23 Southern Mesic Prairie

Pollinator Resources Table

UPs23 Class Factsheet. Based on 102 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Heart-leaved alexanders (<i>Zizia aptera</i>)	78	•	SC	Perennial	Absent	insects	Generalist	3
Heath aster (<i>Aster ericoides</i>)	77	••	SI	Perennial	Present	insects	Generalist	4
Stiff goldenrod (<i>Solidago rigida</i>)	74	•	SI	Perennial	Present	insects	Generalist	4
Canada goldenrod (<i>Solidago canadensis</i>)	69	••	SI	Perennial	Present	insects	Generalist	4
Purple prairie clover (<i>Dalea purpurea</i>)	68	•	SC	Perennial	Present	insects	Generalist	2
Yarrow (<i>Achillea millefolium</i>)	65	•	SI	Perennial	Present	insects	Generalist	4
Rough blazing star (<i>Liatris aspera</i>)	59	•	SI	Perennial	Present	insects	Generalist	4
Prairie phlox (<i>Phlox pilosa</i>)	55	•	SI	Perennial	Absent	insects	Early spring insect, Somewhat specific insect	6
White prairie clover (<i>Dalea candida</i>)	55	•	UNK	Perennial	Present	insects	Generalist	3
Hoary puccoon (<i>Lithospermum canescens</i>)	53	•	H	Perennial	Absent	insects	Somewhat specific insect	6
Stiff sunflower (<i>Helianthus pauciflorus</i>)	50	•	SI	Perennial	Present	insects	Generalist	4
Prairie wild onion (<i>Allium stellatum</i>)	49	•	SC	Perennial	Present	insects	Generalist	2
Missouri goldenrod (<i>Solidago missouriensis</i>)	47	••	SI	Perennial	Present	insects	Generalist	4
Long-headed thimbleweed (<i>Anemone cylindrica</i>)	46	•	SC	Perennial	Present	insects	Generalist	2
Bearded birdfoot violet (<i>Viola palmata</i>)	45	•	CL flowers	Perennial	Present	insects	Early spring insect	4
Flodman's thistle (<i>Cirsium flodmanii</i>)	45	•	GD	Perennial	Weakly	insects	Generalist	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	44	•	D	Perennial	Present	wind	Generalist	0
Daisy fleabane (<i>Erigeron strigosus</i>)	44	•	A	Annual, bi-	Present	insects	Generalist	4
Silverleaf scurfpea (<i>Pediomelum argophyllum</i>)	43	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
White sage (<i>Artemisia ludoviciana</i>)	43	•	SC	Perennial	Present	wind	Generalist	0
Northern bedstraw (<i>Galium boreale</i>)	39	••	SI	Perennial	Present	insects	Generalist	4
Smooth blue aster (<i>Aster laevis</i>)	37	•	SI	Perennial	Present	insects	Generalist	4
Gray-headed coneflower (<i>Ratibida pinnata</i>)	36	••	SI	Perennial	Present	insects	Generalist	4
Silky aster (<i>Aster sericeus</i>)	34	•	SI	Perennial	Present	insects	Generalist	4
Maximilian's sunflower (<i>Helianthus maximiliani</i>)	31	••	SI	Perennial	Present	insects	Generalist	4
Gray goldenrod (<i>Solidago nemoralis</i>)	31	••	SI	Perennial	Present	insects	Generalist	4
Ox-eye (<i>Heliopsis helianthoides</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Tall cinquefoil (<i>Potentilla arguta</i>)	31	•	A	Perennial	Present	insects	Generalist	2
Common milkweed (<i>Asclepias syriaca</i>)	31	•	SI/sc	Perennial	Present	insects	Somewhat specific insect	4
Bird's foot coreopsis (<i>Coreopsis palmata</i>)	30	••	SI	Perennial	Present	insects	Generalist	4
Narrow-leaved purple coneflower (<i>Echinacea pallida</i>)	30	•	SI	Perennial	Absent	insects	Generalist	5
Prairie turnip (<i>Pediomelum esculentum</i>)	30	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Alumroot (<i>Heuchera richardsonii</i>)	28	•	SI	Perennial	Present	insects	Generalist	4
Great blazing star (<i>Liatris pycnostachya</i>)	27	••	UNK	Perennial	Present	insects	Generalist	3
White camass (<i>Zigadenus elegans</i>)	27	•	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	26	•	SC	Perennial	Present	insects	Early spring insect	3
Bastard toadflax (<i>Comandra umbellata</i>)	25	•	SC	Perennial	Present	insects	Early spring insect	3

Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	25	●	SC	Perennial	Present	insects	Generalist	2
Pale-spiked lobelia (<i>Lobelia spicata</i>)	25	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
American vetch (<i>Vicia americana</i>)	23	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Ground plum (<i>Astragalus crassicarpus</i>)	23	●	UNK	Perennial	Present	insects	Early spring insect, Somewhat specific insect	4
Canada anemone (<i>Anemone canadensis</i>)	22	●	SI	Perennial	Present	insects	Generalist	4
Clasping dogbane (<i>Apocynum sibiricum</i>)	22	●	SI	Perennial	Present	insects	Generalist	4
Virginia ground cherry (<i>Physalis virginiana</i>)	22	●	SI	Perennial	Present	insects	Buzz pollination	6
Toothed evening primrose (<i>Calylophus serrulatus</i>)	21	●	SC	Perennial	Absent	insects	Generalist	3
Wood betony (<i>Pedicularis canadensis</i>)	20	●	UNK	Perennial	Present	insects	Buzz pollination	5
Northern plains blazing star (<i>Liatris ligulistylis</i>)	20	●	UNK	Perennial	Present	insects	Generalist	3
Wild bergamot (<i>Monarda fistulosa</i>)	19	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Skyblue aster (<i>Aster oolentangiensis</i>)	18	●●	SI	Perennial	Present	insects	Generalist	4
Canada tick trefoil (<i>Desmodium canadense</i>)	17	●	A	Perennial	Absent	insects	Somewhat specific insect	4
Smooth rattlesnakeroot (<i>Prenanthes racemosa</i>)	15	●	UNK	Perennial	Absent	insects	Somewhat specific insect	5
Wood lily (<i>Lilium philadelphicum</i>)	13	●	SI	Perennial	Present	insects	Generalist	4
Rattlesnake master (<i>Eryngium yuccifolium</i>)	12	●	SC	Perennial	Absent	insects	Generalist	3
Grasses and Sedges								
Big bluestem (<i>Andropogon gerardii</i>)	94	●●●●	SI	Perennial	Present	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	80	●●●●	SI	Perennial	Present	wind	Generalist	0
Little bluestem (<i>Schizachyrium scoparium</i>)	67	●●●	UNK	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	66	●●●	SC	Perennial	Absent	wind	Generalist	0
Porcupine grass (<i>Stipa spartea</i>)	58	●●●	UNK	Perennial	Absent	wind	Generalist	0
Side-oats grama (<i>Bouteloua curtipendula</i>)	46	●●●	A	Perennial	Present	wind	Generalist	0
Switchgrass (<i>Panicum virgatum</i>)	44	●●	SC	Perennial	Present	wind	Generalist	0
Leiberg's panic grass (<i>Panicum leibergii</i>)	43	●●	UNK	Perennial	Present	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	32	●	UNK	Perennial	Weakly	wind	Generalist	0
Prairie cordgrass (<i>Spartina pectinata</i>)	30	●●	UNK	Perennial	Present	wind	Generalist	0
Half-Shrubs								
Leadplant (<i>Amorpha canescens</i>)	74	●●	SC	Perennial	Present	insects	Generalist	2
Prairie rose (<i>Rosa arkansana</i>)	70	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Wolfberry (<i>Symporicarpos occidentalis</i>)	17	●●	SC	Perennial	Present	insects	Generalist	2

OPn81 Northern Shrub Shore Fen

Pollinator Resources

Shrub-dominated peatlands on floating mats along margins of peatlands in ponds, lakes, and streams.

Examples of insect pollinators (and their associated host plants in parentheses) that use OPn81 include:

Bees:

Andrena melanochroa (Rosaceae)

Osmia laticeps (Vaccinium)

Andrena frigida (Salix)

Butterflies:

Euphyes dion (Carex)

Chlosyne gorgone (Lysimachia thrysiflora)

Boloria frigga (Kalmia and Andromeda)

Moths:

Acleris oxycoccana (Chamaedaphne calyculata)

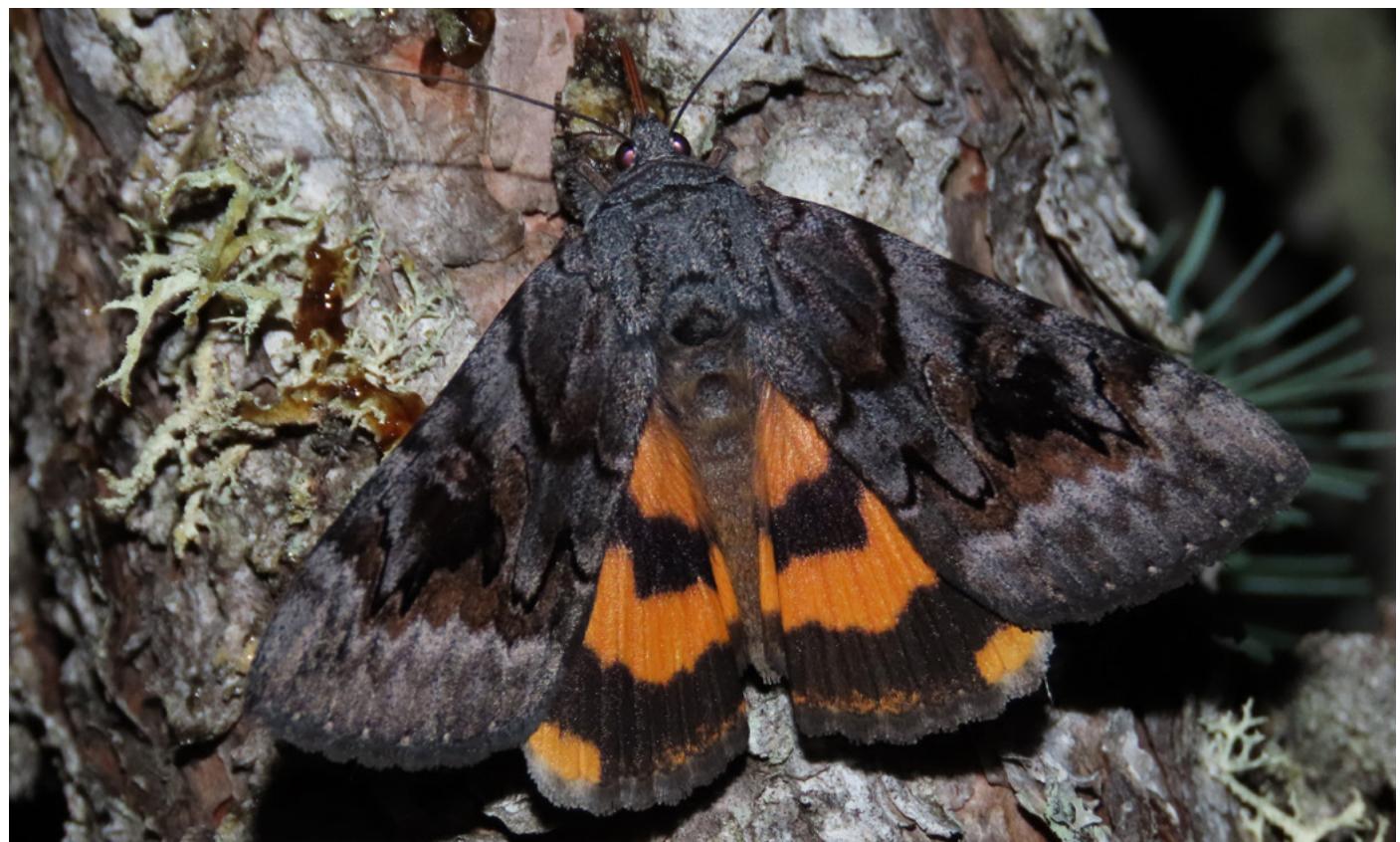
Sympistis piffardi (Spiraea alba)

Syngrapha montana (Rhododendron groenlandicum)

Catocala badia (Myrica gale)



Andrena frigida uses *Salix* (willow) species as a host plant. Photo: Michael Veit

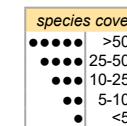


Catocala badia (bay underwing) uses *Myrica gale* (sweetgale) as a host plant. Photo: Kyle Johnson

OPn81 Northern Shrub Shore Fen

Pollinator Resources Table

OPn81 Class Factsheet. Based on 42 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Marsh cinquefoil (<i>Potentilla palustris</i>)	81	●	SC	Perennial	Present	insects	Generalist	2
Northern marsh fern (<i>Thelypteris palustris</i>)	55	●	SC	Perennial	Present	wind, water	Generalist	0
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	55	●	SI	Perennial	Present	insects	Generalist	4
Crested fern (<i>Dryopteris cristata</i>)	45	●	SC	Perennial	Present	wind, water	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	43	●	UNK	Perennial	Present	insects	Generalist	3
Northern bugleweed (<i>Lycopus uniflorus</i>)	38	●	SC	Perennial	Weakly	insects	Generalist	2
Marsh St. John's wort (<i>Triadenum fraseri</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
Water horsetail (<i>Equisetum fluviatile</i>)	33	●●	SC	Perennial	Present	wind, water	Generalist	0
Northern blue flag (<i>Iris versicolor</i>)	31	●	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Linear-leaved, Marsh, or Downy willow-herb*	29	●	Varies	Perennial	Present	insects	Generalist	3
Great water dock (<i>Rumex orbiculatus</i>)	26	●	UNK	Perennial	UNK	wind	Generalist	0
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	26	●	UNK	Perennial	Present	insects	Early spring insect	4
Dwarf raspberry (<i>Rubus pubescens</i>)	26	●	SC	Perennial	Present	insects	Generalist	2
Wild calla (<i>Calla palustris</i>)	21	●	A	Perennial	Present	insects	Somewhat specific insect	3
Marsh skullcap (<i>Scutellaria galericulata</i>)	21	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Round-leaved sundew (<i>Drosera rotundifolia</i>)	21	●	SC	Perennial	Absent	insects	Generalist	3
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	21	●	UNK	Annual	Absent	insects	Generalist	5
Bog goldenrod (<i>Solidago uliginosa</i>)	19	●	SI	Perennial	Present	insects	Generalist	4
Red-stemmed aster (<i>Aster puniceus</i>)	19	●	SI	Perennial	Present	insects	Generalist	4
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	17	●	UNK	Perennial	Absent	insects	Generalist	4
Water smartweed (<i>Polygonum amphibium</i>)	12	●	Ge	Perennial	Present	insects	Generalist	2
Sensitive fern (<i>Onoclea sensibilis</i>)	12	●	SC	Perennial	Present	wind, water	Generalist	0
Bog aster (<i>Aster borealis</i>)	12	●	UNK	Perennial	Present	insects	Generalist	3
Cinnamon fern (<i>Osmunda cinnamomea</i>)	10	●	SC	Perennial	Present	wind, water	Generalist	0
Spinulose shield fern (<i>Dryopteris carthusiana</i>)	10	●	SC	Perennial	Present	wind, water	Generalist	0
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	10	●●	Varies	Varies	Varies	insects	Generalist	Varies
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	10	●●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Bluejoint (<i>Calamagrostis canadensis</i>)	79	●●●	A	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	62	●●●	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	38	●●●	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	36	●●	SI	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	26	●●●	UNK	Perennial	Present	wind	Generalist	0
Silvery sedge (<i>Carex canescens</i>)	17	●	UNK	Perennial	Present	wind	Generalist	0
Rattlesnake grass (<i>Glyceria canadensis</i>)	17	●●	UNK	Perennial	Present	wind	Generalist	0
Brownish sedge (<i>Carex brunnescens</i>)	14	●●●	UNK	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	14	●	UNK	Perennial	Present	wind	Generalist	0

Poor sedge (<i>Carex paupercula</i>)	14	●	UNK	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	12	●●	UNK	Perennial	Present	wind	Generalist	0
Soft-leaved sedge (<i>Carex disperma</i>)	12	●	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Leatherleaf (<i>Chamaedaphne calyculata</i>)	88	●●●●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Labrador tea (<i>Ledum groenlandicum</i>)	36	●●	SC	Perennial	Present	insects	Early spring insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	31	●●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Bog rosemary (<i>Andromeda glaucocephala</i>)	19	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Sweet gale (<i>Myrica gale</i>)	14	●●●●	D	Perennial	Present	insects	Early spring insect	5
Bog laurel (<i>Kalmia polifolia</i>)	12	●	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Tall Shrubs								
Speckled alder (<i>Alnus incana</i>)	81	●●●	Di	Perennial	Present	wind	Generalist	0
Bog birch (<i>Betula pumila</i>)	71	●●●●	Di	Perennial	Present	wind	Generalist	0
Balsam willow (<i>Salix pyrifolia</i>)	50	●	D	Perennial	Present	insects	Early spring insect	5
Bog willow (<i>Salix pedicellaris</i>)	45	●	D	Perennial	Present	insects	Early spring insect	5
Slender willow (<i>Salix petiolaris</i>)	45	●●	D	Perennial	Present	insects	Early spring insect	5
Meadowsweet (<i>Spiraea alba</i>)	43	●	SC	Perennial	Present	insects	Generalist	2
Red-osier dogwood (<i>Cornus sericea</i>)	29	●	SI	Perennial	Present	insects	Generalist	4
Mountain fly honeysuckle (<i>Lonicera villosa</i>)	12	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Diamond-leaved willow (<i>Salix planifolia</i>)	12	●	D	Perennial	Present	insects	Early spring insect	5
Steeplebush (<i>Spiraea tomentosa</i>)	10	●●●	SC	Perennial	Present	insects	Generalist	2
Autumn willow (<i>Salix serissima</i>)	10	●●	D	Perennial	Present	insects	Early spring insect	5
Bebb's willow (<i>Salix bebbiana</i>)	10	●	D	Perennial	Present	insects	Early spring insect	5
Pussy willow (<i>Salix discolor</i>)	10	●	D	Perennial	Present	insects	Early spring insect	5
Tree Canopy								
Tamarack	19	●●	SI	Perennial	Absent	wind	Generalist	0
Black spruce	12	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	-	-	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	-	-	Di	Perennial	Present	wind	Generalist	0
White pine	-	-	SI	Perennial	Absent	wind	Generalist	0
Balsam fir	-	-	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	-	-	SI	Perennial	Present	wind	Generalist	0
Tree Understory								
Tamarack	36	●●	SI	Perennial	Absent	wind	Generalist	0
Black spruce	40	●	UNK	Perennial	Absent	wind	Generalist	0
Red maple	31	●	D	Perennial	Absent	insects	Early spring insect	6
Paper birch	29	●	Di	Perennial	Present	wind	Generalist	0
White pine	21	●	SI	Perennial	Absent	wind	Generalist	0
Balsam fir	21	●	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	10	●	SI	Perennial	Present	wind	Generalist	0

Balsam fir	21	•	UNK	Perennial	Absent	wind	Generalist	0
Northern red oak	10	•	SI	Perennial	Present	wind	Generalist	0

* Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*); **American, Purple-leaved, or Northern willow-herb (*Epilobium ciliatum*, *E. coloratum*, or *E. glandulosum*)

OPn91 Northern Rich Fen (Water Track)

Pollinator Resources

Open peatlands, primarily in water tracks in the interiors of large peatlands. Dominated by fine-leaved sedges or low shrubs, with scattered stunted tamaracks.

Examples of insect pollinators (and their associated host plants in parentheses) that use OPn91 include:

Bees:

Andrena erythrogaster (*Salix*)
Osmia inermis (*Vaccinium*)
Dufourea harveyi (*Dasiphora [Potentilla] fruticose*)

Butterflies:

Tharsalea dorcas (*Dasiphora fruticose*)
Boloria eunomia (*Vaccinium oxycoccus*)
Euphyes dion (*Carex*)

Moths:

Papaipema aweme (*Menyanthes trifoliata*)
Exyra fax (*Sarracenia purpurea s Purpurea*)
Macaria sulphurea (*Vaccinium oxycoccus*)
Heliothis borealis (*Rhododendron groenlandicum*)



Boloria eunomia (bog fritillary) uses *Vaccinium oxycoccus* (small cranberry) as a host plant.

Photo: Kyle Johnson

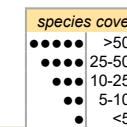


Andrena erythrogaster (red-bellied miner bee) uses *Salix* (willow) species as a host plant. Photo: Max McCarthy

OPn91 Northern Rich Fen (Water Track)

Pollinator Resources Table

OPn91 Class Factsheet. Based on 66 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Buckbean (<i>Menyanthes trifoliata</i>)	79	••	H	Perennial	Present	insects	Early spring insect	5
Pitcher plant (<i>Sarracenia purpurea</i>)	68	•	SC	Perennial	Present	insects	Generalist	2
Intermediate bladderwort (<i>Utricularia intermedia</i>)	52	•	UNK	Perennial	Present	insects	Somewhat specific insect	4
Seaside arrowgrass (<i>Triglochin maritima</i>)	48	•	UNK	Perennial	Present	wind	Generalist	0
Water horsetail (<i>Equisetum fluviatile</i>)	42	•	SC	Perennial	Present	wind, water	Generalist	0
Round-leaved sundew (<i>Drosera rotundifolia</i>)	38	•	SC	Perennial	Absent	insects	Generalist	3
Marsh cinquefoil (<i>Potentilla palustris</i>)	36	•	SC	Perennial	Present	insects	Generalist	2
Northern marsh fern (<i>Thelypteris palustris</i>)	32	••	SC	Perennial	Present	wind, water	Generalist	0
Spatulate-leaved sundew (<i>Drosera intermedia</i>)	30	•	SC	Perennial	Absent	insects	Generalist	3
Labrador bedstraw (<i>Galium labradoricum</i>)	27	•	UNK	Perennial	Present	insects	Generalist	3
Marsh bellflower (<i>Campanula aparinoides</i>)	27	•	UNK	Perennial	Present	insects	Generalist	3
Kalm's lobelia (<i>Lobelia kalmii</i>)	26	•	UNK	Perennial	Weakly	insects	Very specialized insect	5
Lesser bladderwort (<i>Utricularia minor</i>)	26	•	CH	Perennial	Present	insects	Somewhat specific insect	5
Bog aster (<i>Aster borealis</i>)	24	•	UNK	Perennial	Present	insects	Generalist	3
English sundew (<i>Drosera anglica</i>)	21	•	SC	Perennial	Absent	insects	Generalist	3
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	18	•	SI	Perennial	Present	insects	Generalist	4
Arctic raspberry (<i>Rubus arcticus</i>)	18	•	SI	Perennial	Present	insects	Generalist	4
Marsh grass-of-Parnassus (<i>Parnassia palustris</i>)	15	•	SC	Perennial	Present	insects	Generalist	2
Horned bladderwort (<i>Utricularia cornuta</i>)	14	••	CH	Perennial	Present	insects	Somewhat specific insect	5
Big-leaf white violet or Northern white violet*	14	•	Varies	Perennial	Present	insects	Varies	Varies
Linear-leaved sundew (<i>Drosera linearis</i>)	12	•	SC	Perennial	Absent	insects	Generalist	3
Bog goldenrod (<i>Solidago uliginosa</i>)	12	•	SI	Perennial	Present	insects	Generalist	4
Rose pogonia (<i>Pogonia ophioglossoides</i>)	11	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	11	•	UNK	Perennial	Present	insects	Early spring insect	4
Swamp lousewort (<i>Pedicularis lanceolata</i>)	9	•	UNK	Perennial	Present	insects	Buzz pollination	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	9	•	SC	Perennial	Weakly	insects	Generalist	2
Grasses and Sedges								
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	95	••••	SI	Perennial	Present	wind	Generalist	0
Lead-colored sedge (<i>Carex livida</i>)	79	•	UNK	Perennial	Present	wind	Generalist	0
Candle-lantern sedge (<i>Carex limosa</i>)	68	••	UNK	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	67	••	UNK	Perennial	Present	wind	Generalist	0
White beak rush (<i>Rhynchospora alba</i>)	55	••	UNK	Perennial	Absent	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	50	•	SC	Perennial	Present	wind	Generalist	0
Scheuchzeria (<i>Scheuchzeria palustris</i>)	41	•	UNK	Perennial	Present	wind	Generalist	0
Bristle-stalked sedge (<i>Carex leptalea</i>)	35	•	UNK	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	33	•	UNK	Perennial	Present	wind	Generalist	0
Hudson Bay bulrush (<i>Scirpus hudsonianus</i>)	26	••	UNK	Perennial	Present	wind	Generalist	0

Tufted bulrush (<i>Scirpus cespitosus</i>)	21	••••	UNK	Perennial	Absent	wind	Generalist	0
Chamisso's cottongrass (<i>Eriophorum chamissonis</i>)	20	•	UNK	Perennial	Present	wind	Generalist	0
Slender cottongrass (<i>Eriophorum gracile</i>)	18	•	UNK	Perennial	Present	wind	Generalist	0
Prairie sedge (<i>Carex prairea</i>)	14	••	UNK	Perennial	Present	wind	Generalist	0
Lesser-panicled sedge (<i>Carex diandra</i>)	12	•	UNK	Perennial	Present	wind	Generalist	0
Twin bentgrass (<i>Agrostis hyemalis</i>)	12	•	SI	Perennial	Absent	wind	Generalist	0
Sparse-fruited sedge (<i>Carex tenuiflora</i>)	11	•	UNK	Perennial	Present	wind	Generalist	0
Delicate cottongrass (<i>Eriophorum tenellum</i>)	11	•	UNK	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	9	•••	SI	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	9	•	SC	Perennial	Absent	wind	Generalist	0
Sooty-colored beak rush (<i>Rhynchospora fusca</i>)	9	•••	UNK	Perennial	Present	wind	Generalist	0
Slender sedge (<i>Carex echinata</i>)	9	•	UNK	Perennial	Present	wind	Generalist	0
Coastal sedge (<i>Carex exilis</i>)	9	••••	UNK	Perennial	Present	wind	Generalist	0
Buxbaum's sedge (<i>Carex buxbaumii</i>)	8	•••	UNK	Perennial	Present	wind	Generalist	0
Tall cottongrass (<i>Eriophorum polystachion</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Bog rosemary (<i>Andromeda glaucocephala</i>)	68	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	48	•	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Leatherleaf (<i>Chamaedaphne calyculata</i>)	32	••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Sweet gale (<i>Myrica gale</i>)	9	•	D	Perennial	Present	insects	Early spring insect	5
Labrador tea (<i>Ledum groenlandicum</i>)	9	•	SC	Perennial	Present	insects	Early spring insect	3
Tall Shrubs								
Bog birch (<i>Betula pumila</i>)	59	•••	Di	Perennial	Present	wind	Generalist	0
Bog willow (<i>Salix pedicellaris</i>)	47	•	D	Perennial	Present	insects	Early spring insect	5
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	21	••	SC	Perennial	Absent	insects	Generalist	3
Slender willow (<i>Salix petiolaris</i>)	12	•	D	Perennial	Present	insects	Early spring insect	5
Autumn willow (<i>Salix serissima</i>)	11	•	D	Perennial	Present	insects	Early spring insect	5
Dwarf alder (<i>Rhamnus alnifolia</i>)	9	•	UNK	Perennial	Absent	insects	Generalist	4
Sage-leaved willow (<i>Salix candida</i>)	9	•	D	Perennial	Present	insects	Early spring insect	5
Tree Seedlings or Saplings (< 6ft)								
Tamarack (U) (<i>Larix laricina</i>)	32	••	SI	Perennial	Absent	wind	Generalist	0

*Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)

OPn92 Northern Rich Fen (Basin)

Pollinator Resources

Open peatlands on deep, well-decomposed peat or floating peat mats in basins, often adjacent to lakes and ponds. Dominated by fine-leaved graminoids or shrubs.

Examples of insect pollinators (and their associated host plants in parentheses) that use OPn92 include:

Bees:

Megachile campanulae (*Campanula*)

Andrena bradleyi (*Vaccinium*)

Hylaeus sparsus (Apiaceae)

Andrena andrenoides (*Salix*)

Butterflies:

Erebia discoidalis (*Carex chordorrhiza*)

Poanes viator (*Carex lacustris*)

Boloria chariclea (*Viola*)

Moths:

Papaipema lysimachiae (*Lysimachia thyrsiflora*)

Malacosoma californica (*Betula pumila*)

Papaipema aweme (*Menyanthes trifoliata*)



Andrena bradleyi uses *Vaccinium* (blueberry, cranberry) species as a host plant.

Photo: Max McCarthy

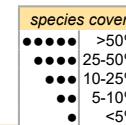


Erebia discoidalis (red-disked alpine) uses *Carex chordorrhiza* (creeping sedge) as a host plant. Photo: Kyle Johnson

OPn92 Northern Rich Fen (Basin)

Pollinator Resources Table

OPn92 Class Factsheet. Based on 102 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements		Pollination Index
Marsh cinquefoil (<i>Potentilla palustris</i>)	70	●	SC	Perennial	Present	insects	Generalist		2
Northern marsh fern (<i>Thelypteris palustris</i>)	65	●●●	SC	Perennial	Present	wind, water	Generalist		0
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	59	●	SI	Perennial	Present	insects	Generalist		4
Marsh St. John's wort (<i>Triadenum fraseri</i>)	59	●	UNK	Perennial	Present	insects	Generalist		3
Northern bugleweed (<i>Lycopus uniflorus</i>)	48	●	SC	Perennial	Weakly	insects	Generalist		2
Marsh bellflower (<i>Campanula aparinoides</i>)	44	●	UNK	Perennial	Present	insects	Generalist		3
Linear-leaved, Marsh, or Downy willow-herb*	42	●	Varies	Perennial	Present	insects	Generalist		3
Bog aster (<i>Aster borealis</i>)	35	●	UNK	Perennial	Present	insects	Generalist		3
Round-leaved sundew (<i>Drosera rotundifolia</i>)	35	●	SC	Perennial	Absent	insects	Generalist		3
Water horsetail (<i>Equisetum fluviatile</i>)	32	●●	SC	Perennial	Present	wind, water	Generalist		0
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	31	●	UNK	Perennial	Absent	insects	Generalist		4
Labrador bedstraw (<i>Galium labradoricum</i>)	28	●	UNK	Perennial	Present	insects	Generalist		3
Intermediate bladderwort (<i>Utricularia intermedia</i>)	25	●	UNK	Perennial	Present	insects	Somewhat specific insect		4
Marsh skullcap (<i>Scutellaria galericulata</i>)	25	●	SC	Perennial	Present	insects	Somewhat specific insect		3
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	25	●●	SI	Perennial	Present	insects	Generalist		4
Great water dock (<i>Rumex orbiculatus</i>)	24	●	UNK	Perennial	UNK	wind	Generalist		0
Northern blue flag (<i>Iris versicolor</i>)	18	●	SC and SI	Perennial	Present	insects	Somewhat specific insect		4
Crested fern (<i>Dryopteris cristata</i>)	18	●	SC	Perennial	Present	wind, water	Generalist		0
Buckbean (<i>Menyanthes trifoliata</i>)	17	●●	H	Perennial	Present	insects	Early spring insect		5
Dwarf raspberry (<i>Rubus pubescens</i>)	14	●	SC	Perennial	Present	insects	Generalist		2
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	13	●	UNK	Perennial	Present	insects	Generalist		3
Wild calla (<i>Calla palustris</i>)	12	●●	A	Perennial	Present	insects	Somewhat specific insect		3
Bog goldenrod (<i>Solidago uliginosa</i>)	12	●	SI	Perennial	Present	insects	Generalist		4
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	11	●	UNK	Annual	Absent	insects	Generalist		5
Big-leaf white violet or Northern white violet**	11	●	Varies	Perennial	Present	insects	Varies		Varies
Common marsh marigold (<i>Caltha palustris</i>)	10	●	SI	Perennial	Present	insects	Early spring insect		5
Pitcher plant (<i>Sarracenia purpurea</i>)	10	●	SC	Perennial	Present	insects	Generalist		2
Grasses and Sedges									
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	91	●●●●	SI	Perennial	Present	wind	Generalist		0
Creeping sedge (<i>Carex chordorrhiza</i>)	42	●●	UNK	Perennial	Present	wind	Generalist		0
Bluejoint (<i>Calamagrostis canadensis</i>)	35	●●	A	Perennial	Present	wind	Generalist		0
Beaked sedge (<i>Carex utriculata</i>)	32	●●●	UNK	Perennial	Present	wind	Generalist		0
Lake sedge (<i>Carex lacustris</i>)	31	●●●	UNK	Perennial	Present	wind	Generalist		0
Interior sedge (<i>Carex interior</i>)	25	●●	UNK	Perennial	Present	wind	Generalist		0
Slender cottongrass (<i>Eriophorum gracile</i>)	22	●	UNK	Perennial	Present	wind	Generalist		0
Prairie sedge (<i>Carex prairea</i>)	18	●●●	UNK	Perennial	Present	wind	Generalist		0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	18	●	UNK	Perennial	Present	wind	Generalist		0

Three-way sedge (<i>Dulichium arundinaceum</i>)	17	••	UNK	Perennial	Present	wind	Generalist	0
Silvery sedge (<i>Carex canescens</i>)	16	••	UNK	Perennial	Present	wind	Generalist	0
Candle-lantern sedge (<i>Carex limosa</i>)	15	••	UNK	Perennial	Present	wind	Generalist	0
Woolgrass (<i>Scirpus cyperinus</i>)	14	•	UNK	Perennial	Present	wind	Generalist	0
Slender sedge (<i>Carex echinata</i>)	13	••	UNK	Perennial	Present	wind	Generalist	0
Twin bentgrass (<i>Agrostis hyemalis</i>)	11	•	SI	Perennial	Absent	wind	Generalist	0
Tall cottongrass (<i>Eriophorum polystachion</i>)	11	••	UNK	Perennial	Present	wind	Generalist	0
Poor sedge (<i>Carex paupercula</i>)	10	•	UNK	Perennial	Present	wind	Generalist	0
Low Shrubs								
Leatherleaf (<i>Chamaedaphne calyculata</i>)	28	•••	SC	Perennial	Present	insects	Early spring insect, Somewhat specific insect	3
Large cranberry (<i>Vaccinium macrocarpon</i>)	18	•••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Bog rosemary (<i>Andromeda glaucophylla</i>)	14	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	12	•••	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Labrador tea (<i>Ledum groenlandicum</i>)	9	•	SC	Perennial	Present	insects	Early spring insect	3
Tall Shrubs								
Bog willow (<i>Salix pedicellaris</i>)	50	•	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	40	•••	Di	Perennial	Present	wind	Generalist	0
Slender willow (<i>Salix petiolaris</i>)	39	•	D	Perennial	Present	insects	Early spring insect	5
Speckled alder (<i>Alnus incana</i>)	23	•••	Di	Perennial	Present	wind	Generalist	0
Sage-leaved willow (<i>Salix candida</i>)	18	•	D	Perennial	Present	insects	Early spring insect	5
Meadowsweet (<i>Spiraea alba</i>)	18	•	SC	Perennial	Present	insects	Generalist	2
Pussy willow (<i>Salix discolor</i>)	17	•	D	Perennial	Present	insects	Early spring insect	5
Balsam willow (<i>Salix pyrifolia</i>)	17	•	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	15	•	SI	Perennial	Present	insects	Generalist	4
Steeplebush (<i>Spiraea tomentosa</i>)	13	•••	SC	Perennial	Present	insects	Generalist	2
Autumn willow (<i>Salix serissima</i>)	10	•	D	Perennial	Present	insects	Early spring insect	5
Tree Seedlings or Saplings (>6ft)								
Tamarack	26	••	SI	Perennial	Absent	wind	Generalist	0
Paper birch	15	•	Di	Perennial	Present	wind	Generalist	0
Red maple	12	•	D	Perennial	Absent	insects	Early spring insect	6
Tree Seedlings or Saplings (< 6ft)								
Tamarack (C) (<i>Larix laricina</i>)	11	••	SI	Perennial	Absent	wind	Generalist	0

* (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*); **Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)

OPn93 Northern Extremely Rich Fen

Pollinator Resources

Open peatlands dominated by fine-leaved graminoids scattered in channels of standing water. Present in areas of calcium-rich groundwater discharge in large patterned peatlands.

Examples of insect pollinators (and their associated host plants in parentheses) that use OPn93 include:

Bees:

Dufourea harveyi (*Dasiphora fruticose*)

Andrena hirticincta (*Symphyotrichum*)

Osmia virga (*Vaccinium*)

Butterflies:

Boloria frigga (*Andromeda polifolia* var. *latifolia*)

Colias interior (*Vaccinium*)

Euphyes dion (*Carex*)

Moths:

Dasychira cinnamomea (*Andromeda polifolia* var. *latifolia*)

Exyra fax (*Sarracenia purpurea* subs. *purpurea*)

Papaipema aweme (*Menyanthes trifoliata*)

Phyllonorycter ledella (*Rhododendron groenlandicum*)



Andrena hirticincta uses *Symphyotrichum* (American asters) species as a host plant. Photo: Heather Holm

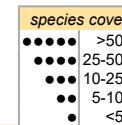


Papaipema aweme (Aweme borer moth) uses *Menyanthes trifoliata* (buckbean) as a host plant.
Photo by Kye Johnson

OPn93 Northern Extremely Rich Fen

Pollinator Resources Table

OPn93 Class Factsheet. Based on 9 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Pitcher plant (<i>Sarracenia purpurea</i>)	89	●	SC	Perennial	Present	insects	Generalist	2
Intermediate bladderwort (<i>Utricularia intermedia</i>)	78	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Buckbean (<i>Menyanthes trifoliata</i>)	78	●●	H	Perennial	Present	insects	Early spring insect	5
Kalm's lobelia (<i>Lobelia kalmii</i>)	56	●	UNK	Perennial	Weakly	insects	Very specialized insect	5
Seaside arrowgrass (<i>Triglochin maritima</i>)	56	●	UNK	Perennial	Present	wind	Generalist	0
Marsh grass-of-Parnassus (<i>Parnassia palustris</i>)	44	●	SC	Perennial	Present	insects	Generalist	2
Horned bladderwort (<i>Utricularia cornuta</i>)	33	●	CH	Perennial	Present	insects	Somewhat specific insect	5
Round-leaved sundew (<i>Drosera rotundifolia</i>)	33	●	SC	Perennial	Absent	insects	Generalist	3
English sundew (<i>Drosera anglica</i>)	33	●	SC	Perennial	Absent	insects	Generalist	3
Bog aster (<i>Aster borealis</i>)	33	●	UNK	Perennial	Present	insects	Generalist	3
American grass-of-Parnassus (<i>Parnassia glauca</i>)	22	●	UNK	Perennial	Present	insects	Generalist	3
Spatulate-leaved sundew (<i>Drosera intermedia</i>)	22	●	SC	Perennial	Absent	insects	Generalist	3
Marsh bellflower (<i>Campanula aparinoides</i>)	11	●	UNK	Perennial	Present	insects	Generalist	3
Labrador bedstraw (<i>Galium labradoricum</i>)	11	●	UNK	Perennial	Present	insects	Generalist	3
Wild calla (<i>Calla palustris</i>)	11	●	A	Perennial	Present	insects	Somewhat specific insect	3
Marsh cinquefoil (<i>Potentilla palustris</i>)	11	●	SC	Perennial	Present	insects	Generalist	2
Lesser bladderwort (<i>Utricularia minor</i>)	11	●	CH	Perennial	Present	insects	Somewhat specific insect	5
Sticky false asphodel (<i>Tofieldia glutinosa</i>)	11	●	UNK	Perennial	Present	insects	Generalist	3
Grasses and Sedges								
Candle-lantern sedge (<i>Carex limosa</i>)	89	●	UNK	Perennial	Present	wind	Generalist	0
Tufted bulrush (<i>Scirpus cespitosus</i>)	78	●●●	UNK	Perennial	Absent	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	78	●●●●	SI	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	67	●	SC	Perennial	Present	wind	Generalist	0
Twig rush (<i>Cladium mariscoides</i>)	67	●●●	UNK	Perennial	Present	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	56	●●	SI	Perennial	Present	wind	Generalist	0
Lead-colored sedge (<i>Carex livida</i>)	44	●	UNK	Perennial	Present	wind	Generalist	0
White beak rush (<i>Rhynchospora alba</i>)	44	●	UNK	Perennial	Absent	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0
Hudson Bay bulrush (<i>Scirpus hudsonianus</i>)	33	●	UNK	Perennial	Present	wind	Generalist	0
Beaked spikerush (<i>Eleocharis rostellata</i>)	33	●●●	SC	Perennial	Present	wind	Generalist	0
Creeping sedge (<i>Carex chordorrhiza</i>)	22	●	UNK	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	22	●	UNK	Perennial	Present	wind	Generalist	0
Slender sedge (<i>Carex echinata</i>)	22	●	UNK	Perennial	Present	wind	Generalist	0
Coastal sedge (<i>Carex exilis</i>)	22	●●	UNK	Perennial	Present	wind	Generalist	0
Sterile sedge (<i>Carex sterilis</i>)	22	●●	D	Perennial	Present	wind	Generalist	0
Prairie sedge (<i>Carex prairea</i>)	11	●	UNK	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	11	●	UNK	Perennial	Present	wind	Generalist	0

Low Shrubs								
Bog rosemary (<i>Andromeda glaucophylla</i>)	89	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Labrador tea (<i>Ledum groenlandicum</i>)	22	●	SC	Perennial	Present	insects	Early spring insect	3
Small cranberry (<i>Vaccinium oxycoccus</i>)	22	●	± SC	Perennial	Present	insects	Somewhat specific insect, Facultative buzz pollination	3
Tall Shrubs								
Bog birch (<i>Betula pumila</i>)	78	●	Di	Perennial	Present	wind	Generalist	0
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	33	●●	SC	Perennial	Absent	insects	Generalist	3
Dwarf alder (<i>Rhamnus alnifolia</i>)	22	●	UNK	Perennial	Absent	insects	Generalist	4
Tree Seedlings or Saplings (< 6ft)								
White cedar	67	●	UNK	Perennial	Absent	wind	Generalist	0
Tamarack	56	●●●	SI	Perennial	Absent	wind	Generalist	0
Black spruce	33	●	UNK	Perennial	Absent	wind	Generalist	0

Opp91 Prairie Rich Fen

Pollinator Resources

Open graminoid-dominated peatlands in glacial lake plains and broad glacial drainageways in the prairie region. Dominated by fine-leaved sedges and grasses, with low shrubs absent to common.

Examples of insect pollinators (and their associated host plants in parentheses) that use Opp91 include:

Bees:

Andrena mariae (*Salix*)

Melissodes desponsus (*Cirsium*)

Colletes americanus (*Solidago*)

Butterflies:

Satyrium acadica (*Salix*)

Danaus plexippus (*Asclepias*)

Chlosyne gorgone (*Lysimachia thyrsiflora*)

Moths:

Tricholita signata (*Cirsium muticum*)

Macronoctua onusta (*Iris versicolor*)

Epiblema scudderiana (*Euthamia graminifolia*)

Limnaecia phragmitella (*Typha angustifolia*)



Andrena mariae uses *Salix* (willow) species as a host plant. Photo: Heather Holm

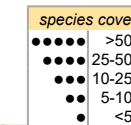


Tricholita signata (signate Quaker) uses *Cirsium muticum* (swamp thistle) as a host plant. Photo: Bob Dunlap

OPp91 Prairie Rich Fen

Pollinator Resources Table

OPp91 Class Factsheet. Based on 128 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Marsh bellflower (<i>Campanula aparinoides</i>)	55	•	UNK	Perennial	Present	insects	Generalist	3
Bog aster (<i>Aster borealis</i>)	54	••	UNK	Perennial	Present	insects	Generalist	3
Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	51	••	A	Perennial	Present	insects	Generalist	2
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	48	•	SI	Perennial	Present	insects	Generalist	4
Eastern panicled aster (<i>Aster lanceolatus</i>)	45	••	SI	Perennial	Present	insects	Generalist	4
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	41	•	SC	Perennial	Weakly	insects	Generalist	2
Swamp milkweed (<i>Asclepias incarnata</i>)	39	•	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	37	•	SC	Perennial	Weakly	insects	Generalist	2
Water smartweed (<i>Polygonum amphibium</i>)	35	••	Ge	Perennial	Present	insects	Generalist	2
Marsh St. John's wort (<i>Triadenum fraseri</i>)	31	•	UNK	Perennial	Present	insects	Generalist	3
Kalm's lobelia (<i>Lobelia kalmii</i>)	30	•	UNK	Perennial	Weakly	insects	Very specialized insect	5
Rough bugleweed (<i>Lycopus asper</i>)	30	•	SC	Perennial	Weakly	insects	Generalist	2
Common mint (<i>Mentha arvensis</i>)	29	•	SC	Perennial	Present	insects	Generalist	2
Marsh cinquefoil (<i>Potentilla palustris</i>)	27	•	SC	Perennial	Present	insects	Generalist	2
Labrador bedstraw (<i>Galium labradoricum</i>)	26	•	UNK	Perennial	Present	insects	Generalist	3
Seaside arrowgrass (<i>Triglochin maritima</i>)	26	•	UNK	Perennial	Present	wind	Generalist	0
Canada goldenrod (<i>Solidago canadensis</i>)	24	•	SI	Perennial	Present	insects	Generalist	4
Narrow-leaved and hybrid cattail (<i>Typha spp.</i>)*	20	•	SC	Perennial	Present	wind	Generalist	0
Silverweed (<i>Potentilla anserina</i>)	19	••	SI	Perennial	Present	insects	Generalist	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	19	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Northern blue flag (<i>Iris versicolor</i>)	19	•	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Germander (<i>Teucrium canadense</i>)	17	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	17	•	UNK	Perennial	Present	insects	Generalist	3
Swamp lousewort (<i>Pedicularis lanceolata</i>)	17	•	UNK	Perennial	Present	insects	Buzz pollination	5
Linear-leaved, Marsh, or Downy willow-herb**	16	•	Varies	Perennial	Present	insects	Generalist	3
Giant, Sawtooth, or Nuttall's sunflower (<i>Helianthus spp.</i>)***	15	•	SI	Perennial	Present	insects	Generalist	4
Woundwort (<i>Stachys palustris</i>)	14	••	SC	Perennial	Present	insects	Somewhat specific insect	3
Common marsh marigold (<i>Caltha palustris</i>)	14	•	SI	Perennial	Present	insects	Early spring insect	5
Giant goldenrod (<i>Solidago gigantea</i>)	13	•	GM	Perennial	Present	insects	Generalist	4
Northern bog violet (<i>Viola nephrophylla</i>)****	13	•	CL flowers present	Perennial	Present	insects	Early spring insect	4
Northern marsh fern (<i>Thelypteris palustris</i>)	12	••	SC	Perennial	Present	wind, water	Generalist	0
Spotted water hemlock (<i>Cicuta maculata</i>)	11	•	SC	Perennial	Present	insects	Generalist	2
Swamp thistle (<i>Cirsium muticum</i>)	10	•	GD	Biennial	Absent	insects	Generalist	6
Broad-leaf cattail (<i>Typha latifolia</i>)	9	••	SC	Perennial	Present	wind	Generalist	0
Clasping dogbane (<i>Apocynum sibiricum</i>)	9	•	SI	Perennial	Present	insects	Generalist	4
Marsh vetchling (<i>Lathyrus palustris</i>)	9	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Lesser fringed gentian (<i>Gentianopsis procera</i>)	9	•	UNK	Annual or biennial	Absent	insects	Somewhat specific insect	6
Poor gerardia (<i>Agalinis purpurea</i>)	9	••	herkogamy, SI	Annual	Absent	insects	Somewhat specific insect	7

Grasses and Sedges								
Stiff reed grass (<i>Calamagrostis stricta</i>)	92	•••	A	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	90	••••	SI	Perennial	Present	wind	Generalist	0
Buxbaum's sedge (<i>Carex buxbaumii</i>)	74	•••	UNK	Perennial	Present	wind	Generalist	0
Tall cottongrass (<i>Eriophorum polystachion</i>)	44	••	UNK	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	41	••	SC	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	41	•••	UNK	Perennial	Present	wind	Generalist	0
Lead-colored sedge (<i>Carex livida</i>)	39	•••	UNK	Perennial	Present	wind	Generalist	0
Hardstem and Slender bulrush (<i>Scirpus spp.</i>)*****	30	•	UNK	Perennial	Present	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	27	•••	UNK	Perennial	Present	wind	Generalist	0
Tufted hair grass (<i>Deschampsia cespitosa</i>)	21	••	UNK	Perennial	Absent	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	19	•••	SI	Perennial	Present	wind	Generalist	0
Baltic rush (<i>Juncus arcticus</i>)	17	•••	SC	Perennial	Present	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	16	••	SI	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	13	•	A	Perennial	Present	wind	Generalist	0
Hairy panic grass (<i>Panicum lanuginosum</i>)	12	••	UNK	Perennial	Absent	wind	Generalist	0
Twig rush (<i>Cladium mariscoides</i>)	10	•••	UNK	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	10	•••	SI	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	8	••	UNK	Perennial	Present	wind	Generalist	0
Shrubs								
Slender willow (<i>Salix petiolaris</i>)	59	••	D	Perennial	Present	insects	Early spring insect	5
Sage-leaved willow (<i>Salix candida</i>)	46	••	D	Perennial	Present	insects	Early spring insect	5
Autumn willow (<i>Salix serissima</i>)	33	•	D	Perennial	Present	insects	Early spring insect	5
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	29	•••	SC	Perennial	Absent	insects	Generalist	3
Pussy willow (<i>Salix discolor</i>)	23	•	D	Perennial	Present	insects	Early spring insect	5
Bog willow (<i>Salix pedicellaris</i>)	23	•	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	21	••	Di	Perennial	Present	wind	Generalist	0
Bebb's willow (<i>Salix bebbiana</i>)	18	•	D	Perennial	Present	insects	Early spring insect	5
Hoary-fruited willow (<i>Salix maccalliana</i>)	13	•	D	Perennial	Present	insects	Early spring insect	5
Heart-leaved willow (<i>Salix eriocephala</i>)	10	•	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	8	•	SI	Perennial	Present	insects	Generalist	4

*Narrow-leaved and Hybrid cattail (*Typha angustifolia* and *T. x glauca*); **Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*); ***Giant, Sawtooth, or Nuttall's sunflower (*Helianthus giganteus*, *H. grosseserratus*, or *H. nuttallii*); ****Northern bog violet (*Viola nephrophylla* and possibly *Viola sororia*); *****Hard stem and Slender bulrush (*Scirpus acutus* and *S. heterochaetus*).

OPp93 Prairie Extremely Rich Fen Pollinator Resources

Open graminoid-dominated fens on permanently saturated peat sustained by mineral-rich groundwater discharge, with little influence from surface water inputs. Typically present on sloping sites; peat is sometimes mounded or domed. Small pools and sparsely vegetated marly peat areas are commonly present.

Examples of insect pollinators (and their associated host plants in parentheses) that use OPp93 include:

Bees:

Andrena simplex (*Symphyotrichum*)
Melissodes rivalis (*Cirsium*)
Andrena vernalis (*Zizia*)

Butterflies:

Oarisma poweshiek (*Muhlenbergia richardsonis*)
Hesperia dacotae (*Andropogon gerardii*)
Atrytonopsis hianna (*Andropogon gerardii*)

Moths:

Acleris cornana (*Cornus sericea*)
Malacosoma californica (*Betula pumila*)
Tricholita signata (*Cirsium muticum*)
Oidaematophorus eupatorii (*Eutrochium maculatum*)



Atrytonopsis hianna (dusted skipper) uses *Andropogon gerardii* (big bluestem) as a host plant.
Photo: Bob Dunlap

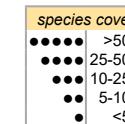


Tricholita signata (signate Quaker) uses *Cirsium muticum* (swamp thistle) as a host plant. Photo: Bob Dunlap

OPp93 Prairie Extremely Rich Fen

Pollinator Resources Table

OPp93 Class Factsheet. Based on 78 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	71	●	UNK	Perennial	Present	insects	Generalist	3
Northern bog violet (<i>Viola nephrophylla</i>)*	71	●	CL flowers present	Perennial	Present	insects	Early spring insect	4
Bog aster (<i>Aster borealis</i>)	67	●	UNK	Perennial	Present	insects	Generalist	3
Flat-topped aster (<i>Aster umbellatus</i>)	67	●	UNK	Perennial	Present	insects	Generalist	3
Swamp lousewort (<i>Pedicularis lanceolata</i>)	65	●	UNK	Perennial	Present	insects	Buzz pollination	5
American grass-of-Parnassus (<i>Parnassia glauca</i>)	58	●●	UNK	Perennial	Present	insects	Generalist	3
Kalm's lobelia (<i>Lobelia kalmii</i>)	58	●	UNK	Perennial	Weakly	insects	Very specialized insect	5
Giant, Sawtooth, or Nuttall's sunflower**	54	●●	SI	Perennial	Present	insects	Generalist	4
Seaside arrowgrass (<i>Triglochin maritima</i>)	49	●●	UNK	Perennial	Present	wind	Generalist	0
Northern bedstraw (<i>Galium boreale</i>)	47	●	SI	Perennial	Present	insects	Generalist	4
Riddell's goldenrod (<i>Solidago riddellii</i>)	45	●	SI	Perennial	Present	insects	Generalist	4
Swamp thistle (<i>Cirsium muticum</i>)	41	●	GD	Biennial	Absent	insects	Generalist	6
Marsh arrowgrass (<i>Triglochin palustris</i>)	38	●	UNK	Perennial	Present	wind	Generalist	0
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	32	●	SC	Perennial	Present	insects	Generalist	2
Lesser fringed gentian (<i>Gentianopsis procera</i>)	32	●	UNK	Annual or biennial	Absent	insects	Somewhat specific insect	6
Common boneset (<i>Eupatorium perfoliatum</i>)	31	●	SI	Perennial	Present	insects	Generalist	4
Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	29	●	A	Perennial	Present	insects	Generalist	2
Broad-leaf cattail (<i>Typha latifolia</i>)	28	●●	SC	Perennial	Present	wind	Generalist	0
Canada goldenrod (<i>Solidago canadensis</i>)	28	●	SI	Perennial	Present	insects	Generalist	4
Prairie loosestrife (<i>Lysimachia quadriflora</i>)	28	●	SI	Perennial	Present	insects	Generalist	4
Northern bugleweed (<i>Lycopus uniflorus</i>)	28	●	SC	Perennial	Weakly	insects	Generalist	2
Narrow-leaved and Hybrid cattail (<i>Typha</i> spp.)****	27	●●	SC	Perennial	Present	wind	Generalist	0
Red-stemmed aster (<i>Aster puniceus</i> and <i>A. firmus</i>)	23	●	Varies	Perennial	Present	insects	Generalist	Varies
Giant goldenrod (<i>Solidago gigantea</i>)	23	●	GM	Perennial	Present	insects	Generalist	4
Dwarf raspberry (<i>Rubus pubescens</i>)	22	●●	SC	Perennial	Present	insects	Generalist	2
Golden alexanders (<i>Zizia aurea</i>)	22	●	SC	Perennial	Absent	insects	Generalist	3
Sticky false asphodel (<i>Tofieldia glutinosa</i>)	22	●	UNK	Perennial	Present	insects	Generalist	3
New England aster (<i>Aster novae-angliae</i>)	21	●	SI	Perennial	Present	insects	Generalist	4
Labrador bedstraw (<i>Galium labradoricum</i>)	21	●	UNK	Perennial	Present	insects	Generalist	3
Swamp milkweed (<i>Asclepias incarnata</i>)	21	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	19	●	D	Perennial	Present	wind	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	18	●	UNK	Perennial	Present	insects	Generalist	3
Marsh grass-of-Parnassus (<i>Parnassia palustris</i>)	17	●	SC	Perennial	Present	insects	Generalist	2
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	17	●	SC	Perennial	Weakly	insects	Generalist	2
Golden or False golden ragwort (<i>Senecio aureus</i> or <i>S. pseudoaureus</i>)	15	●	SI	Perennial	Varies	insects	Generalist	Varies
Yellow stargrass (<i>Hypoxis hirsuta</i>)	15	●	SI	Perennial	Present	insects	Generalist	4

Grasses and Sedges								
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	86	••	UNK	Perennial	Present	wind	Generalist	0
Sterile sedge (<i>Carex sterilis</i>)	76	•••	D	Perennial	Present	wind	Generalist	0
Mat muhly grass (<i>Muhlenbergia richardsonis</i>)	69	•••	UNK	Perennial	Present	wind	Generalist	0
Rigid sedge (<i>Carex tetanica</i>)	55	•	UNK	Perennial	Present	wind	Generalist	0
Narrow reed grass (<i>Calamagrostis stricta</i>)	54	•	A	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	49	••	SI	Perennial	Present	wind	Generalist	0
Prairie sedge (<i>Carex prairea</i>)	45	•••	UNK	Perennial	Present	wind	Generalist	0
Tall cottongrass (<i>Eriophorum polystachion</i>)	45	•	UNK	Perennial	Present	wind	Generalist	0
Hardstem and Slender bulrush (<i>Scirpus acutus</i> and <i>S. heterochaetus</i>)	42	•••	UNK	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	41	•	SC	Perennial	Absent	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	36	•	SI	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	35	•••	UNK	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	35	•	SC	Perennial	Present	wind	Generalist	0
Hair-like beak rush (<i>Rhynchospora capillacea</i>)	28	•••	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	28	•••	SI	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	28	•	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	27	•	UNK	Perennial	Present	wind	Generalist	0
Tufted hair grass (<i>Deschampsia cespitosa</i>)	24	••	UNK	Perennial	Absent	wind	Generalist	0
Tufted bulrush (<i>Scirpus cespitosus</i>)	22	••	UNK	Perennial	Absent	wind	Generalist	0
Three-square bulrush (<i>Scirpus pungens</i>)	21	••••	UNK	Perennial	Present	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	21	•	SC	Perennial	Present	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	19	••	UNK	Perennial	Present	wind	Generalist	0
Lead-colored sedge (<i>Carex livida</i>)	19	•	UNK	Perennial	Present	wind	Generalist	0
Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	55	•	SI	Perennial	Present	insects	Generalist	4
Bog birch (<i>Betula pumila</i>)	54	•••	Di	Perennial	Present	wind	Generalist	0
Sage-leaved willow (<i>Salix candida</i>)	50	•	D	Perennial	Present	insects	Early spring insect	5
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	42	•••	SC	Perennial	Absent	insects	Generalist	3
Pussy willow (<i>Salix discolor</i>)	33	•	D	Perennial	Present	insects	Early spring insect	5
Bebb's willow (<i>Salix bebbiana</i>)	29	•	D	Perennial	Present	insects	Early spring insect	5
Autumn willow (<i>Salix serissima</i>)	28	•	D	Perennial	Present	insects	Early spring insect	5
Slender willow (<i>Salix petiolaris</i>)	22	•	D	Perennial	Present	insects	Early spring insect	5

* Northern bog violet (*Viola nephrophylla*), possibly with Common blue violet (*Viola sororia*); **Giant, Sawtooth, or Nuttall's sunflower (*Helianthus giganteus*, *H. grosseserratus*, or *H. nuttallii*); ***Narrow-leaved and Hybrid cattail (*Typha angustifolia* and *T. x glauca*)

WMn82 Northern Wet Meadow/Carr Pollinator Resources

Open wetlands dominated by dense cover of broad-leaved graminoids or tall shrubs. Present on mineral to sapric peat soils in basins and along streams.

Examples of insect pollinators (and their associated host plants in parentheses) that use WMn82 include:

Bees:

Andrena frigida (*Salix*)
Andrena wellesleyana (*Salix*)
Hylaeus sparsus (*Apiaceae*)

Butterflies:

Poanes viator (*Carex lacustris*)
Lycaena hypophlaeas (*Rumex britannica*)
Danaus plexippus (*Asclepias*)

Moths:

Papaipema lysimachiae (*Lysimachia thyrsiflora*)
Macroctua onusta (*Iris versicolor*)
Lithophane patefacta (*Acer rubrum*)



Andrena wellesleyana uses *Salix* (willow) species as a host plant. Photo: Michael Veit

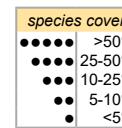


Poanes viator (broad-winged skipper) uses *Carex lacustris* (lake sedge) as a host plant. Photo: Bob Dunlap

WMn82 Northern Wet Meadow/Carr

Pollinator Resources Table

[WMn82 Class Factsheet](#). Based on 295 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	59	●	SI	Perennial	Present	insects	Generalist	4
Marsh bellflower (<i>Campanula aparinoides</i>)	58	●	UNK	Perennial	Present	insects	Generalist	3
Marsh skullcap (<i>Scutellaria galericulata</i>)	53	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Great water dock (<i>Rumex orbiculatus</i>)	52	●	UNK	Perennial	UNK	wind	Generalist	0
Three-cleft or small bedstraw (<i>Galium trifidum</i> or <i>G. tinctorium</i>)	46	●	UNK	Perennial	Present	insects	Generalist	3
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	46	●	UNK	Perennial	Absent	insects	Generalist	4
Northern bugleweed (<i>Lycopus uniflorus</i>)	45	●	SC	Perennial	Weakly	insects	Generalist	2
Linear-leaved, Marsh, or Downy willow-herb (<i>Epilobium</i> spp.)*	44	●	Varies	Perennial	Present	insects	Generalist	3
Water smartweed (<i>Polygonum amphibium</i>)	42	●	Ge	Perennial	Present	insects	Generalist	2
Northern marsh fern (<i>Thelypteris palustris</i>)	40	●●	SC	Perennial	Present	wind, water	Generalist	0
Touch-me-not (<i>Impatiens</i> spp.)	39	●●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Marsh cinquefoil (<i>Potentilla palustris</i>)	38	●	SC	Perennial	Present	insects	Generalist	2
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	34	●	UNK	Perennial	Present	insects	Generalist	3
Broad-leaved cattail (<i>Typha latifolia</i>)	32	●●	SC	Perennial	Present	wind	Generalist	0
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	28	●	UNK	Annual	Absent	insects	Generalist	5
Crested fern (<i>Dryopteris cristata</i>)	24	●	SC	Perennial	Present	wind, water	Generalist	0
Marsh St. John's wort (<i>Triadenum fraseri</i>)	23	●	UNK	Perennial	Present	insects	Generalist	3
Swamp milkweed (<i>Asclepias incarnata</i>)	22	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Northern blue flag (<i>Iris versicolor</i>)	22	●	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	22	●●	SI	Perennial	Present	insects	Generalist	4
Labrador bedstraw (<i>Galium labradoricum</i>)	21	●	UNK	Perennial	Present	insects	Generalist	3
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	21	●●	Varies	Varies	Varies	insects	Generalist	Varies
Sensitive fern (<i>Onoclea sensibilis</i>)	20	●	SC	Perennial	Present	wind, water	Generalist	0
Common mint (<i>Mentha arvensis</i>)	19	●	SC	Perennial	Present	insects	Generalist	2
Red-stemmed aster (<i>Aster puniceus</i>)	19	●	SI	Perennial	Present	insects	Generalist	4
Marsh vetchling (<i>Lathyrus palustris</i>)	17	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Common marsh marigold (<i>Caltha palustris</i>)	17	●	SI	Perennial	Present	insects	Early spring insect	5
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	17	●	SC	Perennial	Weakly	insects	Generalist	2
Non-native cattails (<i>Typha angustiolia</i> or <i>T. x glauca</i>)	13	●●	SC	Perennial	Present	wind	Generalist	0
Long-leaved chickweed (<i>Stellaria longifolia</i>)	13	●	SC	Perennial	Present	insects	Generalist	2
Bog aster (<i>Aster borealis</i>)	12	●	UNK	Perennial	Present	insects	Generalist	3
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	12	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Giant goldenrod (<i>Solidago gigantea</i>)	12	●	GM	Perennial	Present	insects	Generalist	4
Big-leaf white violet or Northern white violet (<i>Viola</i> spp.)**	12	●	Varies	Perennial	Present	insects	Varies	Varies
Lesser-duckweed (<i>Lemna minor</i>)	12	●	SC	Perennial	Present	water	Generalist	0
Dwarf raspberry (<i>Rubus pubescens</i>)	11	●	SC	Perennial	Present	insects	Generalist	2
Sweet flag (<i>Acorus calamus</i>)	11	●●	A	Perennial	Present	insects	Generalist	2

Rough cinquefoil (<i>Potentilla norvegica</i>)	11	●	SC	Annual, biennial, or short-lived perennial	Present	insects	Generalist	4
Common boneset (<i>Eupatorium perfoliatum</i>)	11	●	SI	Perennial	Present	insects	Generalist	4
Water horsetail (<i>Equisetum fluviatile</i>)	10	●	SC	Perennial	Present	wind, water	Generalist	0
Grasses and Sedges								
Bluejoint (<i>Calamagrostis canadensis</i>)	80	●●●●	A	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	72	●●●●	UNK	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	41	●●●●	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	33	●●●	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	29	●●●	SI	Perennial	Present	wind	Generalist	0
Woolgrass (<i>Scirpus cyperinus</i>)	22	●●	UNK	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	11	●●●	SI	Perennial	Present	wind	Generalist	0
Half-Shrubs								
Red raspberry (<i>Rubus idaeus</i>)	13	●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Slender willow (<i>Salix petiolaris</i>)	42	●●●	D	Perennial	Present	insects	Early spring insect	5
Pussy willow (<i>Salix discolor</i>)	29	●●	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	24	●●	SI	Perennial	Present	insects	Generalist	4
Speckled alder (<i>Alnus incana</i>)	24	●●●	Di	Perennial	Present	wind	Generalist	0
Meadowsweet (<i>Spiraea alba</i>)	23	●	SC	Perennial	Present	insects	Generalist	2
Bebb's willow (<i>Salix bebbiana</i>)	20	●●	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	14	●●	Di	Perennial	Present	wind	Generalist	0
Tree Seedlings or Saplings (<6ft)								
Paper birch	8	●	Di	Perennial	Present	wind	Generalist	0
Black ash	7	●	D	Perennial	Absent	wind	Generalist	0
Red maple	5	●	D	Perennial	Absent	insects	Early spring insect	6

* Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*); **Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)

WMs83 Southern Seepage Meadow/Carr Pollinator Resources

Open wetlands dominated by a dense cover of hummock-forming broadleaved sedges or tall shrubs. Present in areas of groundwater seepage along streams and drainage ways, on sloping terraces, and at bases of slopes.

Examples of insect pollinators (and their associated host plants in parentheses) that use WMs83 include:

Bees:

Perdita maculigera (*Salix*)
Andrena platyparia (*Cornus* [*Swida*])
Melissodes dentiventris (*Solidago*)
Lasioglossum lusorium (*Onagraceae*)



Andrena platyparia (plated miner bee) uses *Cornus* (dogwood) species as a host plant.

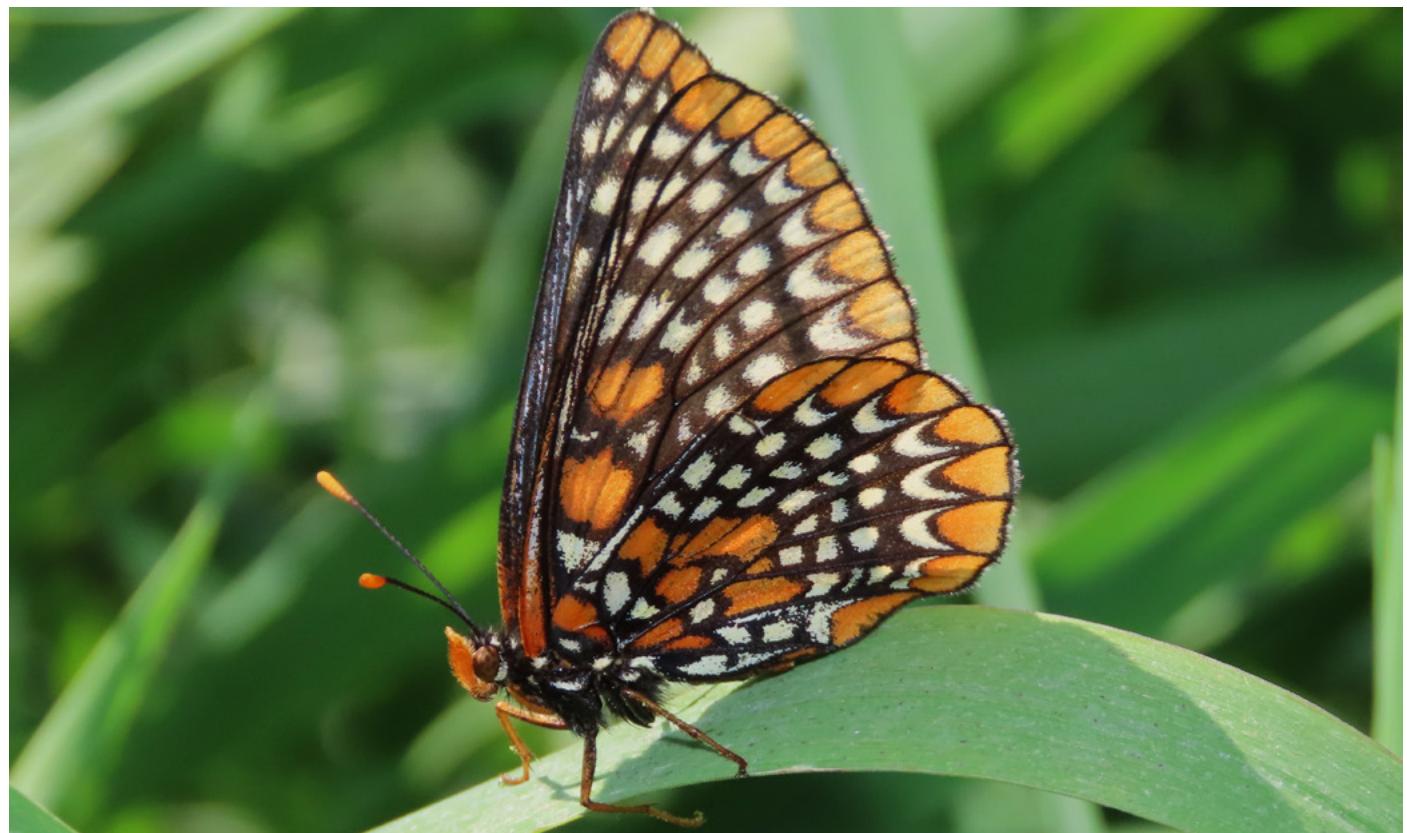
Photo: Max McCarthy

Butterflies:

Euphydryas phaeton (*Chelone glabra*)
Chlosyne gorgone (*Helianthus giganteus*)
Lycaena hypophlaeas (*Rumex*)

Moths:

Haploa clymene (*Eupatorium perfoliatum*)
Cisseps fulvicollis (*Carex stricta*)
Loscopia velata (*Carex stipata*)

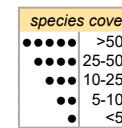


Euphydryas phaeton (Baltimore checkerspot) uses *Chelone glabra* (white turtlehead) as a host plant. Photo: Kyle Johnson

WMs83 Southern Seepage Meadow/Carr

Pollinator Resources Table

WMs83 Class Factsheet. Based on 63 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	83	••	UNK	Perennial	Present	insects	Generalist	3
Great water dock (<i>Rumex orbiculatus</i>)	59	•	UNK	Perennial	UNK	wind	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	56	•	UNK	Perennial	Present	insects	Generalist	3
Red-stemmed aster (<i>Aster puniceus</i>)	50	••	SI	Perennial	Present	insects	Generalist	4
Common boneset (<i>Eupatorium perfoliatum</i>)	50	•	SI	Perennial	Present	insects	Generalist	4
Swamp milkweed (<i>Asclepias incarnata</i>)	48	•	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Giant goldenrod (<i>Solidago gigantea</i>)	47	•	GM	Perennial	Present	insects	Generalist	4
Northern bugleweed (<i>Lycopus uniflorus</i>)	44	•	SC	Perennial	Weakly	insects	Generalist	2
Touch-me-not (<i>Impatiens</i> spp.)	42	•••	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Common marsh marigold (<i>Caltha palustris</i>)	41	••	SI	Perennial	Present	insects	Early spring insect	5
Sunflower*	39	••	SI	Perennial	Present	insects	Generalist	4
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	38	•	SC	Perennial	Weakly	insects	Generalist	2
Marsh vetchling (<i>Lathyrus palustris</i>)	38	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Broad-leaved cattail (<i>Typha latifolia</i>)	36	•••	SC	Perennial	Present	wind	Generalist	0
Linear-leaved, Marsh, or Downy willow-herb**	34	•	Varies	Perennial	Present	insects	Generalist	3
Stemless blue violets***	33	•	Varies	Perennial	Present	insects	Varies	Varies
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	33	•	D	Perennial	Present	wind	Generalist	0
Canada goldenrod (<i>Solidago canadensis</i>)	33	•	SI	Perennial	Present	insects	Generalist	4
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	31	•	SI	Perennial	Present	insects	Generalist	4
Bog aster (<i>Aster borealis</i>)	31	•	UNK	Perennial	Present	insects	Generalist	3
Flat-topped aster (<i>Aster umbellatus</i>)	31	•	UNK	Perennial	Present	insects	Generalist	3
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	30	•	SC	Perennial	Present	insects	Generalist	2
Northern marsh fern (<i>Thelypteris palustris</i>)	30	••	SC	Perennial	Present	wind, water	Generalist	0
Common mint (<i>Mentha arvensis</i>)	28	•	SC	Perennial	Present	insects	Generalist	2
Marsh skullcap (<i>Scutellaria galericulata</i>)	27	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Dwarf raspberry (<i>Rubus pubescens</i>)	27	•••	SC	Perennial	Present	insects	Generalist	2
Swamp thistle (<i>Cirsium muticum</i>)	25	•	GD	Biennial	Absent	insects	Generalist	6
Eastern panicled aster (<i>Aster lanceolatus</i>)	23	•	SI	Perennial	Present	insects	Generalist	4
Water smartweed (<i>Polygonum amphibium</i>)	22	••	Ge	Perennial	Present	insects	Generalist	2
Spotted water hemlock (<i>Cicuta maculata</i>)	20	•	SC	Perennial	Present	insects	Generalist	2
American, Purple-leaved, or Northern willow-herb****	20	•	Varies	Perennial	Present	insects	Generalist	3
Labrador bedstraw (<i>Galium labradoricum</i>)	20	•	UNK	Perennial	Present	insects	Generalist	3
Clearweed (<i>Pilea</i> spp.)	20	••	sometimes D	Annual	Absent	wind	Generalist	0
Swamp lousewort (<i>Pedicularis lanceolata</i>)	20	•	UNK	Perennial	Present	insects	Buzz pollination	5
White turtlehead (<i>Chelone glabra</i>)	19	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Woundwort (<i>Stachys palustris</i>)	19	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Rough bugleweed (<i>Lycopus asper</i>)	17	•••	SC	Perennial	Weakly	insects	Generalist	2

Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	16	●	UNK	Perennial	Absent	insects	Generalist	4
Blue vervain (<i>Verbena hastata</i>)	14	●	SC	Perennial	Present	insects	Generalist	2
Starry false Solomon's seal (<i>Smilacina stellata</i>)	14	●	UNK	Perennial	Present	insects	Early spring insect	4
Sensitive fern (<i>Onoclea sensibilis</i>)	14	●●	SC	Perennial	Present	wind,	Generalist	0
Grasses and Sedges								
Tussock sedge (<i>Carex stricta</i>)	58	●●●●	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	45	●●●	A	Perennial	Present	wind	Generalist	0
Fowl bluegrass (<i>Poa palustris</i>)	36	●	SC	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	33	●●	UNK	Perennial	Present	wind	Generalist	0
Prairie sedge (<i>Carex prairea</i>)	33	●●●	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	31	●	UNK	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	28	●●	SI	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	25	●●●●	SI	Perennial	Present	wind	Generalist	0
Porcupine sedge (<i>Carex hystericina</i>)	25	●●	UNK	Perennial	Present	wind	Generalist	0
Redtop (<i>Agrostis stolonifera</i>)	23	●	SI	Perennial	Present	wind	Generalist	0
Fringed brome (<i>Bromus ciliatus</i>)	23	●	SC	Perennial	Absent	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	22	●	SC	Perennial	Present	wind	Generalist	0
Interior sedge (<i>Carex interior</i>)	22	●	UNK	Perennial	Present	wind	Generalist	0
Dark green or Pale bulrush (<i>Scirpus atrovirens</i> or <i>S. pallidus</i>)	19	●	UNK	Perennial	Present	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	17	●●●	UNK	Perennial	Present	wind	Generalist	0
Prairie cordgrass (<i>Spartina pectinata</i>)	17	●●●	UNK	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	16	●	UNK	Perennial	Present	wind	Generalist	0
Awl-fruited sedge (<i>Carex stipata</i>)	16	●	UNK	Perennial	Present	wind	Generalist	0
Reedgrass (<i>Calamagrostis stricta</i>)	16	●●●	A	Perennial	Present	wind	Generalist	0
Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	48	●●●	SI	Perennial	Present	insects	Generalist	4
Pussy willow (<i>Salix discolor</i>)	39	●●	D	Perennial	Present	insects	Early spring insect	5
Slender willow (<i>Salix petiolaris</i>)	27	●●	D	Perennial	Present	insects	Early spring insect	5
Bebb's willow (<i>Salix bebbiana</i>)	19	●	D	Perennial	Present	insects	Early spring insect	5
Sage-leaved willow (<i>Salix candida</i>)	17	●	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	16	●●●	Di	Perennial	Present	wind	Generalist	0
Heart-leaved willow (<i>Salix eriocephala</i>)	14	●●	D	Perennial	Present	insects	Early spring insect	5

*Giant, Sawtooth, or Nuttall's sunflower (*Helianthus giganteus*, *H. grosseserratus*, or *H. nuttallii*); **Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*); ***American, Purple-leaved, or Northern willow-herb (*Epilobium ciliatum*, *E. coloratum*, or *E. glandulosum*)

WMs92 Southern Basin Wet Meadow/Carr Pollinator Resources

Open wetlands dominated by dense cover of broad-leaved sedges. Typically present in small, closed, shallow basins isolated from groundwater inputs.

Examples of insect pollinators (and their associated host plants in parentheses) that use WMs92 include:

Bees:

Andrena mariae (*Salix*)

Melissodes desponsus (*Cirsium*)

Calliopsis coloradensis (Asteraceae)

Butterflies:

Danaus plexippus (*Asclepias*)

Tharsalea hyllus (*Polygonum*)

Poanes viator (*Carex lacustris*)

Moths:

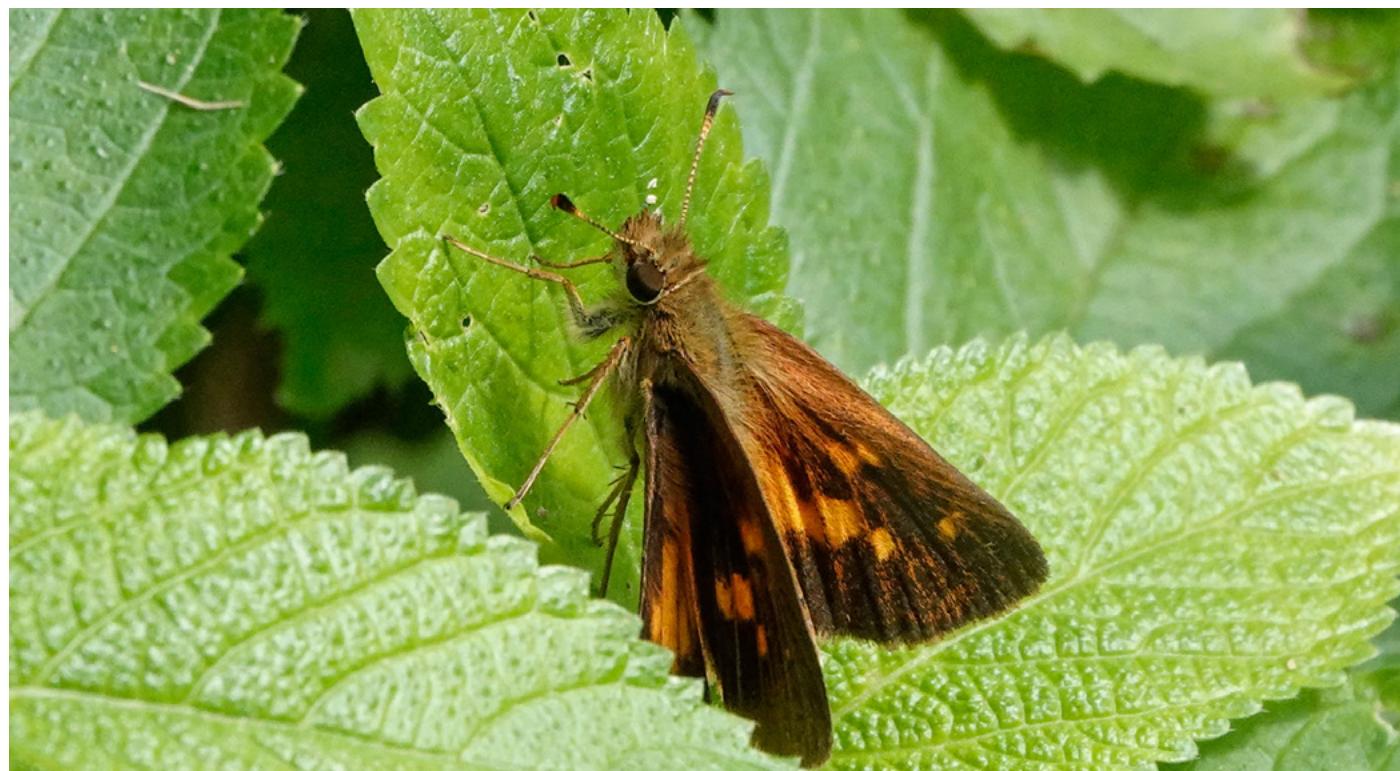
Photedes inops (*Spartina pectinata*)

Phragmatobia fuliginosa (*Eutrochium maculatum*)

Cisseps fulvicollis (*Carex stricta*)



Andrena mariae uses *Salix* (willow) species as a host plant. Photo: Heather Holm

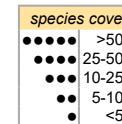


Poanes viator (broad-winged skipper) uses *Carex lacustris* (lake sedge) as a host plant. Photo: Bob Dunlap

WMs92 Southern Basin Wet Meadow/Carr

Pollinator Resources Table

WMs92 Class Factsheet. Based on 29 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Water smartweed (<i>Polygonum amphibium</i>)	79	••	Ge	Perennial	Present	insects	Generalist	2
Rough bugleweed (<i>Lycopus asper</i>)	34	•	SC	Perennial	Weakly	insects	Generalist	2
Common mint (<i>Mentha arvensis</i>)	34	•	SC	Perennial	Present	insects	Generalist	2
Water parsnip (<i>Sium suave</i>)	31	•	Pa	Perennial	Absent	insects	Generalist	5
Swamp milkweed (<i>Asclepias incarnata</i>)	28	•	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	24	•	SI	Perennial	Present	insects	Generalist	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	24	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Germander (<i>Teucrium canadense</i>)	21	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	21	•	UNK	Perennial	Present	insects	Generalist	3
Eastern panicled aster (<i>Aster lanceolatus</i>)	21	•	SI	Perennial	Present	insects	Generalist	4
Canada thistle (<i>Cirsium arvense</i>)	21	•	GD	Perennial	Present	insects	Generalist	4
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	17	•	SC	Perennial	Weakly	insects	Generalist	2
Great water dock (<i>Rumex orbiculatus</i>)	17	•	UNK	Perennial	UNK	wind	Generalist	0
Linear-leaved, Marsh, or Downy willow-herb*	17	•	Varies	Perennial	Present	insects	Generalist	3
Giant bur reed (<i>Sparganium eurycarpum</i>)	14	••	UNK	Perennial	Present	wind	Generalist	0
Woundwort (<i>Stachys palustris</i>)	14	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Marsh vetchling (<i>Lathyrus palustris</i>)	14	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Clasping dogbane (<i>Apocynum sibiricum</i>)	14	•	SI	Perennial	Present	insects	Generalist	4
Canada goldenrod (<i>Solidago canadensis</i>)	14	••	SI	Perennial	Present	insects	Generalist	4
Marsh bellflower (<i>Campanula aparinoides</i>)	14	•	UNK	Perennial	Present	insects	Generalist	3
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	14	•	Varies	Varies	Varies	insects	Generalist	Varies
Red-stemmed aster (<i>Aster puniceus</i>)	10	•	SI	Perennial	Present	insects	Generalist	4
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	10	•	UNK	Perennial	Absent	insects	Generalist	4
Sweet flag (<i>Acorus calamus</i>)	10	•	A	Perennial	Present	insects	Generalist	2
Touch-me-not (<i>Impatiens</i> spp.)	10	••	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Stinging nettle (<i>Urtica dioica</i>)	10	•	D	Perennial	Present	wind	Generalist	0
Large yellow water crowfoot (<i>Ranunculus flabellaris</i>)	10	•	SI	Perennial	Present	insects	Early spring insect	5
Bog aster (<i>Aster borealis</i>)	10	•	UNK	Perennial	Present	insects	Generalist	3
Spotted water hemlock (<i>Cicuta maculata</i>)	10	•	SC	Perennial	Present	insects	Generalist	2
Bristly buttercup (<i>Ranunculus pensylvanicus</i>)	7	•	SI	Perennial	Present	insects	Generalist	4
Arrow-leaved sweet coltsfoot (<i>Petasites sagittatus</i>)	7	••	D	Perennial	Present	insects	Early spring insect	5
Arum-leaved arrowhead (<i>Sagittaria cuneata</i>)	7	•	SI	Perennial	Present	insects	Generalist	4
Spring water starwort (<i>Callitricha palustris</i>)	7	•	SC	Annual	Weakly	water,	Generalist	3
Giant goldenrod (<i>Solidago gigantea</i>)	7	•	GM	Perennial	Present	insects	Generalist	4
Common marsh marigold (<i>Caltha palustris</i>)	7	•	SI	Perennial	Present	insects	Early spring insect	5
Golden dock (<i>Rumex maritimus</i>)	7	•	UNK	Annual or	Absent	wind	Generalist	0
Grasses and Sedges								
Slough sedge (<i>Carex atherodes</i>)	93	••••	UNK	Perennial	Present	wind	Generalist	0

Bluejoint (<i>Calamagrostis canadensis</i>)	45	••••	A	Perennial	Present	wind	Generalist	0
Whitetop (<i>Scolochloa festucacea</i>)	41	•••••	UNK	Perennial	Present	wind	Generalist	0
Prairie cordgrass (<i>Spartina pectinata</i>)	34	••	UNK	Perennial	Present	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	31	•••	SC	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	31	••••	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	21	••••	UNK	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	21	••	SI	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	21	••	UNK	Perennial	Present	wind	Generalist	0
Reed canary grass (<i>Phalaris arundinacea</i>)	17	••	SI	Perennial	Present	wind	Generalist	0
Tall manna grass (<i>Glyceria grandis</i>)	14	•••	UNK	Perennial	Present	wind	Generalist	0
River bulrush (<i>Scirpus fluviatilis</i>)	14	•••	UNK	Perennial	Present	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	10	••	SI	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	7	•	SI	Perennial	Present	wind	Generalist	0
Fowl bluegrass (<i>Poa palustris</i>)	7	•	SC	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	7	•	UNK	Perennial	Present	wind	Generalist	0
Small-fruited bulrush (<i>Scirpus microcarpus</i>)	7	•	UNK	Perennial	Present	wind	Generalist	0
Tall Shrubs								
Pussy willow (<i>Salix discolor</i>)	17	•	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	14	•	SI	Perennial	Present	insects	Generalist	4
Slender willow (<i>Salix petiolaris</i>)	10	••••	D	Perennial	Present	insects	Early spring insect	5
Prickly wild rose (<i>Rosa acicularia</i>)	7	•	SC	Perennial	Present	insects	Generalist	2

* Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*)

WMp73 Prairie Wet Meadow/Carr

Pollinator Resources

Open wetlands dominated by a dense cover of graminoids. Present in small, shallow depressions in the western and southern parts of the state.

Examples of insect pollinators (and their associated host plants in parentheses) that use WMp73 include:

Bees:

Andrena nubecula (*Symphyotrichum*)
Colletes robertsonii (Fabaceae)
Macropis nuda (*Lysimachia quadriflora*)
Andrena erythrogaster (*Salix*)



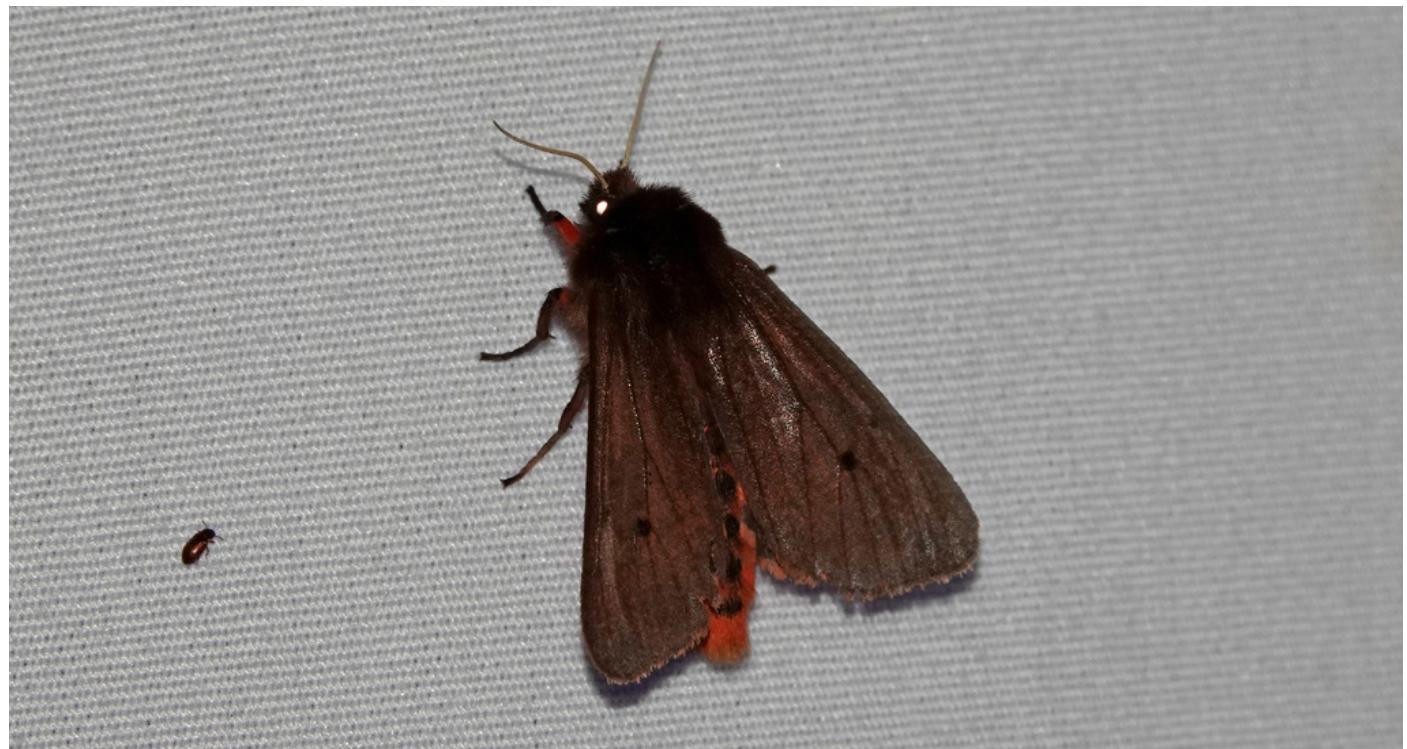
Butterflies:

Danaus plexippus (*Asclepias*)
Chlosyne gorgone (*Helianthus giganteus*)
Argynnis idalia (*Viola*)

Moths:

Resapamea stipata (*Spartina pectinata*)
Hemileuca nevadensis (*Salix interior*)
Phragmatobia fuliginosa (*Eutrochium maculatum*)

Andrena nubecula (cloudy-winged mining bee) uses *Symphyotrichum* (American aster) species as a host plant. Photo: Heather Holm

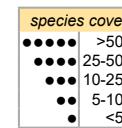


Phragmatobia fuliginosa (ruby tiger moth) uses *Eutrochium maculatum* (spotted joe-pye weed) as a host plant.
Photo: Bob Dunlap

WMp73 Prairie Wet Meadow/Carr

Pollinator Resources Table

WMp73 Class Factsheet. Based on 25 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Eastern panicled aster (<i>Aster lanceolatus</i>)	69	••	SI	Perennial	Present	insects	Generalist	4
Rough bugleweed (<i>Lycopus asper</i>)	58	•	SC	Perennial	Weakly	insects	Generalist	2
Swamp milkweed (<i>Asclepias incarnata</i>)	54	•	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Water smartweed (<i>Polygonum amphibium</i>)	54	••	Ge	Perennial	Present	insects	Generalist	2
Common mint (<i>Mentha arvensis</i>)	46	•	SC	Perennial	Present	insects	Generalist	2
Spotted water hemlock (<i>Cicuta maculata</i>)	42	•	SC	Perennial	Present	insects	Generalist	2
Giant, Sawtooth, or Nuttall's sunflower*	42	••	SI	Perennial	Present	insects	Generalist	4
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	42	•	SC	Perennial	Weakly	insects	Generalist	2
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	38	••	UNK	Perennial	Present	insects	Generalist	3
Marsh vetchling (<i>Lathyrus palustris</i>)	38	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Stemless blue violets**	38	•	Varies	Perennial	Present	insects	Varies	Varies
Prairie loosestrife (<i>Lysimachia quadriflora</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Clasping dogbane (<i>Apocynum sibiricum</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	31	•	A	Perennial	Present	insects	Generalist	2
Silverweed (<i>Potentilla anserina</i>)	31	•••	SI	Perennial	Present	insects	Generalist	4
Linear-leaved, Marsh, or Downy willow-herb***	27	•	Varies	Perennial	Present	insects	Generalist	3
Canada goldenrod (<i>Solidago canadensis</i>)	23	•	SI	Perennial	Present	insects	Generalist	4
Giant goldenrod (<i>Solidago gigantea</i>)	23	•	GM	Perennial	Present	insects	Generalist	4
Swamp lousewort (<i>Pedicularis lanceolata</i>)	19	•	UNK	Perennial	Present	insects	Buzz pollination	5
Woundwort (<i>Stachys palustris</i>)	19	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	19	•	D	Perennial	Present	wind	Generalist	0
Bog aster (<i>Aster borealis</i>)	19	•••	UNK	Perennial	Present	insects	Generalist	3
Autumn sneezeweed (<i>Helenium autumnale</i>)	19	•	UNK	Perennial	Absent	insects	Generalist	4
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	15	•	SC	Perennial	Present	insects	Generalist	2
Golden or False golden ragwort (<i>Senecio aureus</i> or <i>S. pseudoaureus</i>)	15	•	SI	Perennial	Varies	insects	Generalist	Varies
Field horsetail (<i>Equisetum arvense</i>)	15	••	SC	Perennial	Present	wind, water	Generalist	0
Red-stemmed aster (<i>Aster puniceus</i>)	15	•	SI	Perennial	Present	insects	Generalist	4
Golden alexanders (<i>Zizia aurea</i>)	15	•	SC	Perennial	Absent	insects	Generalist	3
Kalm's lobelia (<i>Lobelia kalmii</i>)	12	•	UNK	Perennial	Weakly	insects	Very specialized insect	5
Veiny pea (<i>Lathyrus venosus</i>)	12	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	12	•	SC	Perennial	Weakly	insects	Generalist	2
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	12	•	SI	Perennial	Present	insects	Generalist	4
Maximilian's sunflower (<i>Helianthus maximiliani</i>)	12	•	SI	Perennial	Present	insects	Generalist	4
Flat-topped aster (<i>Aster umbellatus</i>)	12	•	UNK	Perennial	Present	insects	Generalist	3
Seaside arrowgrass (<i>Triglochin maritima</i>)	12	••	UNK	Perennial	Present	wind	Generalist	0
Water parsnip (<i>Sium suave</i>)	12	•	Pa	Perennial	Absent	insects	Generalist	5
Common false Solomon's seal (<i>Smilacina racemosa</i>)	8	•	UNK	Perennial	Present	insects	Early spring insect	4

Common boneset (<i>Eupatorium perfoliatum</i>)	8	●	SI	Perennial	Present	insects	Generalist	4
Riddell's goldenrod (<i>Solidago riddellii</i>)	8	●	SI	Perennial	Present	insects	Generalist	4
Germaner (<i>Teucrium canadense</i>)	8	●●	SC	Perennial	Present	insects	Somewhat specific insect	3
Grasses and Sedges								
Prairie cordgrass (<i>Spartina pectinata</i>)	85	●●●	UNK	Perennial	Present	wind	Generalist	0
Narrow reedgrass (<i>Calamagrostis stricta</i>)	81	●●●	A	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	69	●●●	SI	Perennial	Present	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	69	●●●●	UNK	Perennial	Present	wind	Generalist	0
Baltic rush (<i>Juncus arcticus</i>)	62	●●●	SC	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	46	●●●	A	Perennial	Present	wind	Generalist	0
Dark green or Pale bulrush (<i>Scirpus atrovirens</i> or <i>S. pallidus</i>)	35	●	UNK	Perennial	Present	wind	Generalist	0
Buxbaum's sedge (<i>Carex buxbaumii</i>)	35	●●	UNK	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	31	●	SC	Perennial	Present	wind	Generalist	0
Foxtail barley (<i>Hordeum jubatum</i>)	23	●●●	SC	Perennial	Absent	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	23	●●●	SC	Perennial	Present	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	19	●	UNK	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	19	●●●●	UNK	Perennial	Present	wind	Generalist	0
Rigid sedge (<i>Carex tetanica</i>)	15	●	UNK	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	15	●	UNK	Perennial	Present	wind	Generalist	0
Very slender sedge (<i>Carex praegracilis</i>)	12	●●●●	UNK	Perennial	Present	wind	Generalist	0
Sweet grass (<i>Hierochloe odorata</i>)	12	●	UNK	Perennial	Present	wind	Generalist	0
Slough sedge (<i>Carex atherodes</i>)	12	●●●	UNK	Perennial	Present	wind	Generalist	0
Emory's sedge (<i>Carex emoryi</i>)	8	●●●●	UNK	Perennial	Present	wind	Generalist	0

*Giant, Sawtooth, or Nuttall's sunflower (*Helianthus giganteus*, *H. grosseserratus*, or *H. nuttallii*); ** Stemless blue violets (*Viola sororia*, *V. nephrophylla*, and similar *Viola* spp.); ***Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*)

MRn83 Northern Mixed Cattail Marsh

Pollinator Resources

Emergent marsh communities, typically dominated by cattails. Present on floating mats along shorelines in lakes, ponds, and river backwaters or rooted in mineral soil in shallow wetland basins.

Examples of insect pollinators (and their associated host plants in parentheses) that use MRn83 include:

Bees:

Andrena persimulata (*Cornus [Swida]*)

Hylaeus sparsus (*Apiaceae*)

Butterflies:

Poanes viator (*Carex lacustris*)

Chlosyne gorgone (*Lysimachia thrysiflora*)

Danaus plexippus (*Asclepias*)

Tharsalea dione (*Polygonum*)

Moths:

Cisseps fulvicollis (*Carex stricta*)

Limnaecia phragmitella (*Typha latifolia*)

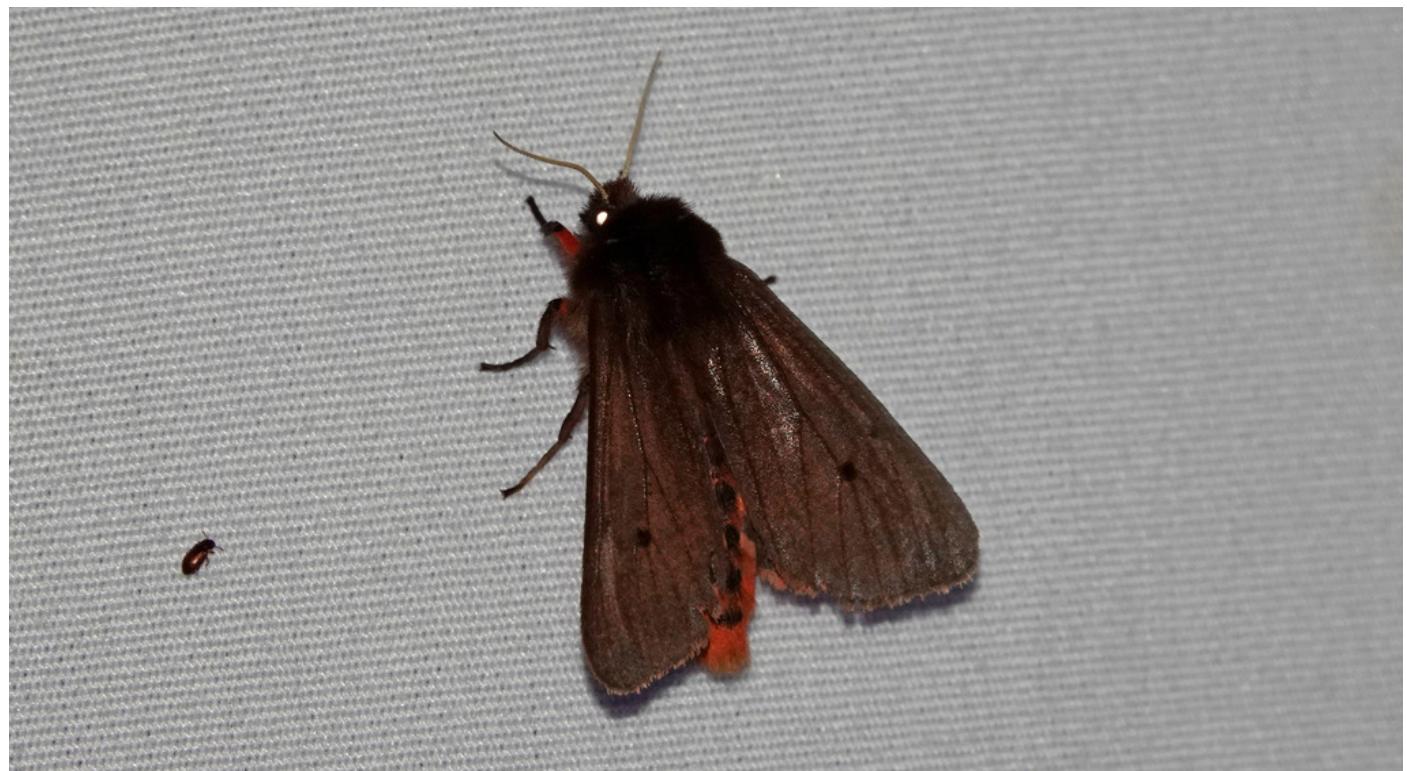
Acleris cornana (*Cornus sericea*)

Phragmatobia fuliginosa (*Eutrochium maculatum*)



Poanes viator (broad-winged skipper) uses *Carex lacustris* (lake sedge) as a host plant.

Photo: Bob Dunlap



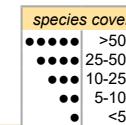
Phragmatobia fuliginosa (ruby tiger moth) uses *Eutrochium maculatum* (spotted joe-pye weed) as a host plant.

Photo: Bob Dunlap

MRn83 Northern Mixed Cattail Marsh

Pollinator Resources Table

MRn83 Class Factsheet. Based on 22 plots. November 2024



Grasses and Sedges	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Lake sedge (<i>Carex lacustris</i>)	45	●●●	UNK	Perennial	Present	wind	Generalist	0
Bristly sedge (<i>Carex comosa</i>)	41	●●	UNK	Perennial	Present	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	32	●	SC	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	27	●●●	A	Perennial	Present	wind	Generalist	0
Rice cut grass (<i>Leersia oryzoides</i>)	23	●	SC	Perennial	Present	wind	Generalist	0
Tall manna grass (<i>Glyceria grandis</i>)	23	●	UNK	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	18	●●	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	14	●	SI	Perennial	Present	wind	Generalist	0
Wild rice (<i>Zizania palustris</i>)	14	●●	UNK	Annual	Absent	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	14	●	SI	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	14	●	UNK	Perennial	Present	wind	Generalist	0
Cyperus sedge (<i>Carex pseudocyperus</i>)	14	●●	UNK	Perennial	Present	wind	Generalist	0
River bulrush (<i>Scirpus fluviatilis</i>)	14	●●	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	14	●●	UNK	Perennial	Present	wind	Generalist	0
Ovoid spikerush (<i>Eleocharis ovata</i>)	9	●	SC	Annual	Absent	wind	Generalist	0
Lesser-panicked sedge (<i>Carex diandra</i>)	9	●	UNK	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	9	●●	SI	Perennial	Present	wind	Generalist	0
Fragrant cyperus (<i>Cyperus odoratus</i>)	9	●	UNK	Annual or short-lived perennial	Present	wind	Generalist	0
Porcupine sedge (<i>Carex hystericina</i>)	9	●●	UNK		Present	wind	Generalist	0
Woolgrass (<i>Scirpus cyperinus</i>)	9	●	UNK	Perennial	Present	wind	Generalist	0
Floating-leaved and Submergent Forbs								
Star-duckweed (<i>Lemna trisulata</i>)	64	●●	UNK	Perennial	Present	water	Generalist	0
Lesser-duckweed (<i>Lemna minor</i>)	59	●●	SC	Perennial	Present	water	Generalist	0
Greater duckweed (<i>Spirodela polyrhiza</i>)	55	●	UNK	Perennial	Present	water	Generalist	0
Common bladderwort (<i>Utricularia vulgaris</i>)	45	●●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Common coontail (<i>Ceratophyllum demersum</i>)	36	●●	SC	Perennial	Present	water	Generalist	0
Emergent Forbs								
Non-native cattails (<i>Typha angustiolia</i> or <i>T. x glauca</i>)	82	●●●●	SC	Perennial	Present	wind	Generalist	0
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	64	●	SI	Perennial	Present	insects	Generalist	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	64	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Three-cleft or small bedstraw*	59	●	UNK	Perennial	Present	insects	Generalist	3
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	50	●	Varies	Varies	Varies	insects	Generalist	Varies
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	45	●	SI	Perennial	Present	insects	Generalist	4
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	41	●●	UNK	Perennial	Absent	insects	Generalist	4
Great water dock (<i>Rumex orbiculatus</i>)	41	●	UNK	Perennial	UNK	wind	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	41	●	UNK	Perennial	Present	insects	Generalist	3
Clearweed (<i>Pilea</i> spp.)	36	●	sometimes D	Annual	Absent	wind	Generalist	0

Northern bugleweed (<i>Lycopus uniflorus</i>)	32	●	SC	Perennial	Weakly	insects	Generalist	2
Broad-leaved cattail (<i>Typha latifolia</i>)	32	●●●	SC	Perennial	Present	wind	Generalist	0
Water smartweed (<i>Polygonum amphibium</i>)	32	●	Ge	Perennial	Present	insects	Generalist	2
Touch-me-not (<i>Impatiens</i> spp.)	32	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Giant bur reed (<i>Sparganium eurycarpum</i>)	27	●●●	UNK	Perennial	Present	wind	Generalist	0
Water parsnip (<i>Sium suave</i>)	27	●	Pa	Perennial	Absent	insects	Generalist	5
Linear-leaved, Marsh, or Downy willow-herb**	23	●	Varies	Perennial	Present	insects	Generalist	3
Spotted water hemlock (<i>Cicuta maculata</i>)	23	●	SC	Perennial	Present	insects	Generalist	2
Dotted smartweed (<i>Polygonum punctatum</i>)	18	●	UNK	Annual or perennial	Present	insects	Generalist	5
Sweet flag (<i>Acorus calamus</i>)	18	●●●	A	Perennial	Present	insects	Generalist	2
Swamp milkweed (<i>Asclepias incarnata</i>)	18	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Northern marsh fern (<i>Thelypteris palustris</i>)	18	●	SC	Perennial	Present	wind, water	Generalist	0
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	18	●	SC	Perennial	Weakly	insects	Generalist	2
Marsh cinquefoil (<i>Potentilla palustris</i>)	14	●	SC	Perennial	Present	insects	Generalist	2
Flat-stemmed pondweed (<i>Potamogeton zosteriformis</i>)	14	●	SI	Perennial	Absent	wind	Generalist	0
Common white water-lily (<i>Nymphaea odorata</i>)	14	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	14	●	UNK	Perennial	Present	insects	Generalist	3
Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	9	●	UNK	Perennial	Absent	wind	Generalist	0
Marsh horsetail (<i>Equisetum palustre</i>)	9	●	SC	Perennial	Present	wind, water	Generalist	0
Common mint (<i>Mentha arvensis</i>)	9	●	SC	Perennial	Present	insects	Generalist	2
Intermediate bladderwort (<i>Utricularia intermedia</i>)	9	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Yellow pond lily (<i>Nuphar variegata</i>)	9	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Unbranched bur reed (<i>Sparganium emersum</i>)	9	●	UNK	Perennial	Present	wind	Generalist	0
Stinging nettle (<i>Urtica dioica</i>)	9	●	D	Perennial	Present	wind	Generalist	0
Leafy pondweed (<i>Potamogeton foliosus</i>)	9	●	SC	Perennial	Absent	water	Generalist	0
Nodding smartweed (<i>Polygonum lapathifolium</i>)	9	●	UNK	Annual	Absent	insects	Generalist	5
Lady's thumb (<i>Polygonum persicaria</i>)	9	●	SC	Annual	Absent	insects	Generalist	4
Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	9	●●	SI	Perennial	Present	insects	Generalist	4

Three-cleft or small bedstraw (*Galium trifidum* or *G. tinctorium*); **Linear-leaved, Marsh, or Downy willow-herb (*Epilobium* spp.)

MRn93 Northern Bulrush-Spikerush Marsh

Pollinator Resources

Emergent marsh communities, typically dominated by bulrushes or spikerushes. Present mainly along lakeshores and stream borders.

Examples of insect pollinators (and their associated host plants in parentheses) that use MRn93 include:

Bees:

Hylaeus sparsus (Apiaceae)
Dufourea maura (*Campanula*)
Megachile campanulae (*Campanula*)

Butterflies:

Chlosyne gorgone (*Lysimachia thyrsiflora*)
Danaus plexippus (*Asclepias*)
Tharsalea hyllus (*Polygonum*)
Euphyes dion (*Carex*)
Tharsalea dione (*Rumex*)

Moths:

Macronoctua onusta (*Iris versicolor*)
Limnaecia phragmitella (*Typha latifolia*)



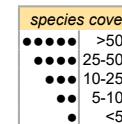
Danaus plexippus (monarch) uses *Asclepias* (milkweed) species as a host plant. Photo: Bob Dunlap

Megachile campanulae (bellflower resin bee) uses *Campanula* (harebell) species as a host plant.
Photo: Heather Holm

MRn93 Northern Bulrush-Spikerush Marsh

Pollinator Resources Table

MRn93 Class Factsheet. Based on 34 plots. November 2024



Grasses and Sedges	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Rice cut grass (<i>Leersia oryzoides</i>)	65	●●●	SC	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	38	●●●	UNK	Perennial	Present	wind	Generalist	0
River bulrush (<i>Scirpus fluviatilis</i>)	38	●●●●	UNK	Perennial	Present	wind	Generalist	0
Reed canary grass (<i>Phalaris arundinacea</i>)	35	●●	SI	Perennial	Present	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	32	●●●	SC	Perennial	Present	wind	Generalist	0
Tall manna grass (<i>Glyceria grandis</i>)	26	●●●	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	24	●●●	UNK	Perennial	Present	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	18	●●●	SI	Perennial	Present	wind	Generalist	0
Three-way sedge (<i>Dulichium arundinaceum</i>)	18	●●●	UNK	Perennial	Present	wind	Generalist	0
Bristly sedge (<i>Carex comosa</i>)	18	●	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	18	●●	A	Perennial	Present	wind	Generalist	0
Northern manna grass (<i>Glyceria borealis</i>)	15	●	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	12	●	SI	Perennial	Present	wind	Generalist	0
Woolgrass (<i>Scirpus cyperinus</i>)	12	●	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	12	●●●	UNK	Perennial	Present	wind	Generalist	0
Floating-leaved and Submergent Forbs								
Lesser-duckweed (<i>Lemna minor</i>)	56	●●●	SC	Perennial	Present	water	Generalist	0
Greater duckweed (<i>Spirodela polyrhiza</i>)	18	●	UNK	Perennial	Present	water	Generalist	0
Common white water-lily (<i>Nymphaea odorata</i>)	15	●●●	SI	Perennial	Present	insects	Somewhat specific insect	5
Common coontail (<i>Ceratophyllum demersum</i>)	12	●	SC	Perennial	Present	water	Generalist	0
Northern water milfoil (<i>Myriophyllum sibiricum</i>)	12	●	UNK	Perennial	Present	wind	Generalist	0
Flat-stemmed pondweed (<i>Potamogeton zosteriformis</i>)	12	●	SI	Perennial	Absent	wind	Generalist	0
Star-duckweed (<i>Lemna trisulata</i>)	12	●●	UNK	Perennial	Present	water	Generalist	0
Flexuous naiad (<i>Najas flexilis</i>)	12	●	SC	Annual	Absent	water	Generalist	0
Emergent Forbs								
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	68	●●●	SI	Perennial	Present	insects	Generalist	4
Water smartweed (<i>Polygonum amphibium</i>)	65	●●	Ge	Perennial	Present	insects	Generalist	2
Bur marigold and Beggarticks (<i>Bidens l.</i>)	59	●●	Varies	Varies	Varies	insects	Generalist	Varies
Giant bur reed (<i>Sparganium eurycarpum</i>)	47	●●●●	UNK	Perennial	Present	wind	Generalist	0
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	35	●	UNK	Perennial	Absent	insects	Generalist	4
Water parsnip (<i>Sium suave</i>)	29	●	Pa	Perennial	Absent	insects	Generalist	5
Clearweed (<i>Pilea spp.</i>)	26	●●	sometimes D	Annual	Absent	wind	Generalist	0
Non-native cattails (<i>Typha angustiolia</i> or <i>T. x glauca</i>)	26	●●	SC	Perennial	Present	wind	Generalist	0
Three-cleft or small bedstraw*	26	●●	UNK	Perennial	Present	insects	Generalist	3
Marsh skullcap (<i>Scutellaria galericulata</i>)	26	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	26	●●	SI	Perennial	Present	insects	Generalist	4
Common water plantain (<i>Alisma triviale</i>)	26	●●	SC	Perennial	Present	insects	Generalist	2

Nodding smartweed (<i>Polygonum lapathifolium</i>)	24	●	UNK	Annual	Absent	insects	Generalist	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	24	●●	SC	Perennial	Weakly	insects	Generalist	2
Sweet flag (<i>Acorus calamus</i>)	21	●●●	A	Perennial	Present	insects	Generalist	2
Common mint (<i>Mentha arvensis</i>)	21	●	SC	Perennial	Present	insects	Generalist	2
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	18	●	SC	Perennial	Weakly	insects	Generalist	2
Dotted smartweed (<i>Polygonum punctatum</i>)	18	●	UNK	Annual or perennial	Present	insects	Generalist	5
Broad-leaved cattail (<i>Typha latifolia</i>)	15	●	SC	Perennial	Present	wind	Generalist	0
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	15	●	UNK	Annual	Absent	insects	Generalist	5
False nettle (<i>Boehmeria cylindrica</i>)	15	●●	D	Perennial	Present	wind	Generalist	0
Great water dock (<i>Rumex orbiculatus</i>)	15	●	UNK	Perennial	UNK	wind	Generalist	0
Golden dock (<i>Rumex maritimus</i>)	15	●	UNK	Annual or biennial	Absent	wind	Generalist	0
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	12	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Swamp milkweed (<i>Asclepias incarnata</i>)	12	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Bulrush (<i>Scirpus acutus</i> or <i>S. heterochaetus</i>)	12	●●●	UNK	Perennial	Present	wind	Generalist	0
Icelandic yellow cress (<i>Rorippa palustris</i>)	12	●	SC	Annual, biennial, or perennial	Present	insects	Generalist	4
Labrador bedstraw (<i>Galium labradoricum</i>)	12	●	UNK	Perennial	Present	insects	Generalist	3
Touch-me-not (<i>Impatiens</i> spp.)	12	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Floating pondweed (<i>Potamogeton natans</i>)	9	●	SI	Perennial	Present	wind	Generalist	0
Common bladderwort (<i>Utricularia vulgaris</i>)	9	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Northern blue flag (<i>Iris versicolor</i>)	9	●	SC and SI	Perennial	Present	insects	Somewhat specific insect	4
Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	9	●	UNK	Perennial	Absent	wind	Generalist	0
Spiny coontail (<i>Ceratophyllum echinatum</i>)	9	●	SC	Perennial	Present	water	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	9	●	UNK	Perennial	Present	insects	Generalist	3
Pennsylvania smartweed (<i>Polygonum pensylvanicum</i>)	9	●●	SC	Annual	Absent	insects	Generalist	4
Watershield (<i>Brasenia schreberi</i>)	6	●●	Di	Perennial	Present	insects	Generalist	4
Grass-leaved pondweed (<i>Potamogeton gramineus</i>)	6	●	UNK	Perennial	Present	wind	Generalist	0
Unbranched bur reed (<i>Sparganium emersum</i>)	6	●●●●	UNK	Perennial	Present	wind	Generalist	0

* Three-cleft or small bedstraw (*Galium trifidum* or *G. tinctorium*)

MRp83 Prairie Mixed Cattail Marsh

Pollinator Resources

Emergent marsh communities, typically dominated by cattails. Present on floating mats or rooted in mineral soil in shallow wetland basins.

Examples of insect pollinators (and their associated host plants in parentheses) that use MRp83 include:

Bees:

Macropis steironematis (*Lysimachia ciliata*)

Macropis nuda (*Lysimachia*)



Butterflies:

Tharsalea hyllus (*Polygonum*)

Poanes viator (*Carex lacustris*)

Danaus plexippus (*Asclepias*)

Poanes massasoit (*Carex stricta*)

Moths:

Papaipema lysimachiae (*Lysimachia thyrsiflora*)

Cisseps fulvicollis (*Carex stricta*)

Lintneria eremita (*Agastache foeniculum*)

Carmenta pyralidiformis (*Eupatorium perfoliatum*)

Macropis nuda uses native *Lysimachia* (loosestrife) species as a host plant. Photo by Michael Veit



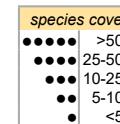
Tharsalea hyllus (bronze copper) uses *Polygonum* (knotweed, smartweed) species as a host plant.

Photo: Bob Dunlap

MRp83 Prairie Mixed Cattail Marsh

Pollinator Resources Table

MRp83 Class Factsheet. Based on 21 plots. November 2024



Grasses and Sedges	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Bulrush (<i>Scirpus acutus</i> or <i>S. heterochaetus</i>)	33	•••	UNK	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	29	•••	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	29	••	UNK	Perennial	Present	wind	Generalist	0
Slough sedge (<i>Carex atherodes</i>)	19	•	UNK	Perennial	Present	wind	Generalist	0
Common reed grass (<i>Phragmites australis</i>)	19	•••	SI	Perennial	Present	wind	Generalist	0
River bulrush (<i>Scirpus fluviatilis</i>)	14	•	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	10	•	A	Perennial	Present	wind	Generalist	0
Narrow reedgrass (<i>Calamagrostis stricta</i>)	10	••	A	Perennial	Present	wind	Generalist	0
Porcupine sedge (<i>Carex hystericina</i>)	10	••	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	10	•	SI	Perennial	Present	wind	Generalist	0
Whitetop (<i>Scolochloa festucacea</i>)	10	••••	UNK	Perennial	Present	wind	Generalist	0
Red-stalked spikerush (<i>Eleocharis palustris</i>)	10	•	SC	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	10	•	UNK	Perennial	Present	wind	Generalist	0
Aquatic sedge (<i>Carex aquatilis</i>)	5	•	SI	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	5	•	SI	Perennial	Present	wind	Generalist	0
Tall manna grass (<i>Glyceria grandis</i>)	5	•	UNK	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	5	•	UNK	Perennial	Present	wind	Generalist	0
Floating-leaved and Submergent Forbs								
Water smartweed (<i>Polygonum amphibium</i>)	71	••	Ge	Perennial	Present	insects	Generalist	2
Star-duckweed (<i>Lemna trisulata</i>)	67	••••	UNK	Perennial	Present	water	Generalist	0
Lesser-duckweed (<i>Lemna minor</i>)	67	••••	SC	Perennial	Present	water	Generalist	0
Common bladderwort (<i>Utricularia vulgaris</i>)	48	••	UNK	Perennial	Present	insects	Somewhat specific insect	4
Greater duckweed (<i>Spirodela polyrhiza</i>)	33	•••	UNK	Perennial	Present	water	Generalist	0
Common coontail (<i>Ceratophyllum demersum</i>)	33	••	SC	Perennial	Present	water	Generalist	0
Flat-stemmed pondweed (<i>Potamogeton zosteriformis</i>)	10	•	SI	Perennial	Absent	wind	Generalist	0
Lesser bladderwort (<i>Utricularia minor</i>)	10	•	CH	Perennial	Present	insects	Somewhat specific insect	5
Whorled water milfoil (<i>Myriophyllum verticillatum</i>)	10	•	UNK	Perennial	Present	wind	Generalist	0
Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	5	•	UNK	Perennial	Absent	wind	Generalist	0
Blunt-leaved pondweed (<i>Potamogeton obtusifolius</i>)	5	•	SC	Perennial	Absent	wind	Generalist	0
Leafy pondweed (<i>Potamogeton foliosus</i>)	5	•	SC	Perennial	Absent	water	Generalist	0
Unbranched bur reed (<i>Sparganium emersum</i>)	5	•	UNK	Perennial	Present	wind	Generalist	0
Emergent Forbs								
Non-native cattails (<i>Typha angustiolia</i> or <i>T. x glauca</i>)	67	••••	SC	Perennial	Present	wind	Generalist	0
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	38	•	SI	Perennial	Present	insects	Generalist	4
Broad-leaved cattail (<i>Typha latifolia</i>)	33	••••	SC	Perennial	Present	wind	Generalist	0
Three-cleft or Small bedstraw*	29	•	UNK	Perennial	Present	insects	Generalist	3
Water parsnip (<i>Sium suave</i>)	24	•	Pa	Perennial	Absent	insects	Generalist	5

Water horsetail (<i>Equisetum fluviatile</i>)	19	••••	SC	Perennial	Present	wind, water	Generalist	0
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	19	•	SI	Perennial	Present	insects	Generalist	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	19	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Giant bur reed (<i>Sparganium eurycarpum</i>)	19	••	UNK	Perennial	Present	wind	Generalist	0
Marsh bellflower (<i>Campanula aparinoides</i>)	14	•	UNK	Perennial	Present	insects	Generalist	3
Bur marigold and Beggarticks (<i>Bidens spp.</i>)	14	•	Varies	Varies	Varies	insects	Generalist	Varies
Clearweed (<i>Pilea spp.</i>)	14	•	sometimes D	Annual	Absent	wind	Generalist	0
Marsh horsetail (<i>Equisetum palustre</i>)	14	•	SC	Perennial	Present	wind, water	Generalist	0
Sweet flag (<i>Acorus calamus</i>)	10	••••	A	Perennial	Present	insects	Generalist	2
Blue giant hyssop (<i>Agastache foeniculum</i>)	10	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Rough bugleweed (<i>Lycopus asper</i>)	10	•	SC	Perennial	Weakly	insects	Generalist	2
Fringed loosestrife (<i>Lysimachia ciliata</i>)	5	•	SI	Perennial	Present	insects	Generalist	4
Heart-leaved water plantain (<i>Alisma subcordatum</i>)	5	•	SC	Perennial	Present	insects	Generalist	2
Northern bugleweed (<i>Lycopus uniflorus</i>)	5	•	SC	Perennial	Weakly	insects	Generalist	2
Swamp milkweed (<i>Asclepias incarnata</i>)	5	•	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Labrador bedstraw (<i>Galium labradoricum</i>)	5	•	UNK	Perennial	Present	insects	Generalist	3
Common boneset (<i>Eupatorium perfoliatum</i>)	5	•	SI	Perennial	Present	insects	Generalist	4
Linear-leaved, Marsh, or Downy willow-herb**	5	•	Varies	Perennial	Present	insects	Generalist	3
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	5	•	SC	Perennial	Weakly	insects	Generalist	2
Germander (<i>Teucrium canadense</i>)	5	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Great water dock (<i>Rumex orbiculatus</i>)	5	•	UNK	Perennial	UNK	wind	Generalist	0
Northern marsh fern (<i>Thelypteris palustris</i>)	5	•	SC	Perennial	Present	wind, water	Generalist	0
Arum-leaved arrowhead (<i>Sagittaria cuneata</i>)	5	•	SI	Perennial	Present	insects	Generalist	4
Lady's thumb (<i>Polygonum persicaria</i>)	5	•	SC	Annual	Absent	insects	Generalist	4
Common mint (<i>Mentha arvensis</i>)	5	•	SC	Perennial	Present	insects	Generalist	2
Woundwort (<i>Stachys palustris</i>)	5	•	SC	Perennial	Present	insects	Somewhat specific insect	3
Cursed crowfoot (<i>Ranunculus sceleratus</i>)	5	•	SI	Perennial	Present	insects	Early spring insect	5

* Three-cleft or Small bedstraw (*Galium trifidum* or *G. tinctorium*); **Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*).

MRp93 Prairie Bulrush-Arrowhead Marsh

Pollinator Resources

Emergent marsh communities typically dominated by bulrushes, bur reeds, arrowheads, or spikerushes. Present along lakeshores and stream borders.

Examples of insect pollinators (and their associated host plants in parentheses) that use MRp93 include:

Bees:

Andrena simplex (*Sympyotrichum*)
Lasioglossum lusorium (*Onagraceae*)
Andrena brevipalpis (*Rhus*)



Butterflies:

Euphyes conspicua (*Carex*)
Danaus plexippus (*Asclepias*)
Tharsalea dione (*Polygonum*)
Tharsalea hyllus (*Rumex*)

Moths:

Papaipema lysimachiae (*Lysimachia thyrsiflora*)
Photedes inops (*Spartina pectinata*)
Resapamea stipata (*Spartina pectinata*)

Andrena simplex (simple miner bee) uses *Sympyotrichum* (American aster) species as a host plant. Photo: Michael Veit

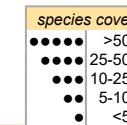


Tharsalea dione (gray copper) uses *Polygonum* (knotweed, smartweed) species as a host plant. Photo: Bob Dunlap

MRp93 Prairie Bulrush-Arrowhead Marsh

Pollinator Resources Table

MRp93 Class Factsheet. Based on 13 plots. November 2024



Grasses and Sedges	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Red-stalked spikerush (<i>Eleocharis palustris</i>)	54	•••	SC	Perennial	Present	wind	Generalist	0
River bulrush (<i>Scirpus fluviatilis</i>)	54	•••••	UNK	Perennial	Present	wind	Generalist	0
Hardstem or Slender bulrush (<i>Scirpus acutus</i> or <i>S. heterochaetus</i>)	38	••••	UNK	Perennial	Present	wind	Generalist	0
Rice cut grass (<i>Leersia oryzoides</i>)	31	•	SC	Perennial	Present	wind	Generalist	0
Beaked sedge (<i>Carex utriculata</i>)	23	•	UNK	Perennial	Present	wind	Generalist	0
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	23	•	SI	Perennial	Present	wind	Generalist	0
Soft stem bulrush (<i>Scirpus validus</i>)	23	••	UNK	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	15	•	SI	Perennial	Present	wind	Generalist	0
Tall manna grass (<i>Glyceria grandis</i>)	15	••	UNK	Perennial	Present	wind	Generalist	0
Prairie cordgrass (<i>Spartina pectinata</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Lake sedge (<i>Carex lacustris</i>)	8	•••••	UNK	Perennial	Present	wind	Generalist	0
Hayden's sedge (<i>Carex haydenii</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Pointed broom sedge (<i>Carex scoparia</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
American slough grass (<i>Beckmannia syzigachne</i>)	8	•	UNK	Annual	Absent	wind	Generalist	0
Whitetop (<i>Scolochloa festucacea</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Ovoid spikerush (<i>Eleocharis ovata</i>)	8	•	SC	Annual	Absent	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Floating-leaved and Submergent Forbs								
Water smartweed (<i>Polygonum amphibium</i>)	69	•••	Ge	Perennial	Present	insects	Generalist	2
Common coontail (<i>Ceratophyllum demersum</i>)	38	••	SC	Perennial	Present	water	Generalist	0
Flat-stemmed pondweed (<i>Potamogeton zosteriformis</i>)	38	•	SI	Perennial	Absent	wind	Generalist	0
Whorled water milfoil (<i>Myriophyllum verticillatum</i>)	38	••	UNK	Perennial	Present	wind	Generalist	0
Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	38	•	UNK	Perennial	Absent	wind	Generalist	0
Star-duckweed (<i>Lemna trisulata</i>)	31	•	UNK	Perennial	Present	water	Generalist	0
Sago pondweed (<i>Stuckenia pectinata</i>)	31	•••	UNK	Perennial	Present	water	Generalist	0
Richardson's pondweed (<i>Potamogeton richardsonii</i>)	23	•	SI	Perennial	Present	wind	Generalist	0
Flexuous naiad (<i>Najas flexilis</i>)	23	••	SC	Annual	Absent	water	Generalist	0
Lesser-duckweed (<i>Lemna minor</i>)	23	•	SC	Perennial	Present	water	Generalist	0
Illinois pondweed (<i>Potamogeton illinoensis</i>)	15	•	UNK	Perennial	Present	wind	Generalist	0
Greater duckweed (<i>Spirodela polyrhiza</i>)	8	•	UNK	Perennial	Present	water	Generalist	0
Leafy pondweed (<i>Potamogeton foliosus</i>)	8	•	SC	Perennial	Absent	water	Generalist	0
Robbins' pondweed (<i>Potamogeton robbinsii</i>)	8	•	SI	Perennial	Present	wind	Generalist	0
Very small pondweed (<i>Potamogeton pusillus</i>)	8	•	SC	Perennial	Absent	wind	Generalist	0
Grass-leaved pondweed (<i>Potamogeton gramineus</i>)	8	•	UNK	Perennial	Present	wind	Generalist	0
Fries' pondweed (<i>Potamogeton friesii</i>)	8	•	UNK	Perennial	Absent	wind	Generalist	0
Sea naiad (<i>Najas marina</i>)	8	•	D	Perennial	Present	water	Generalist	0
Southern naiad (<i>Najas guadalupensis</i>)	8	•	UNK	Perennial	Present	water	Generalist	0

Common bladderwort (<i>Utricularia vulgaris</i>)	8	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Emergent Forbs								
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	54	●●●	SI	Perennial	Present	insects	Generalist	4
Giant bur reed (<i>Sparganium eurycarpum</i>)	38	●●●●	UNK	Perennial	Present	wind	Generalist	0
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	38	●	Varies	Varies	Varies	insects	Generalist	Varies
Water parsnip (<i>Sium suave</i>)	31	●	Pa	Perennial	Absent	insects	Generalist	5
Swamp milkweed (<i>Asclepias incarnata</i>)	31	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
Northern bugleweed (<i>Lycopus uniflorus</i>)	23	●	SC	Perennial	Weakly	insects	Generalist	2
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	23	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Heart-leaved water plantain (<i>Alisma subcordatum</i>)	15	●	SC	Perennial	Present	insects	Generalist	2
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	15	●	SI	Perennial	Present	insects	Generalist	4
Marsh skullcap (<i>Scutellaria galericulata</i>)	15	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Common water plantain (<i>Alisma triviale</i>)	15	●	SC	Perennial	Present	insects	Generalist	2
Red-stemmed aster (<i>Aster puniceus</i>)	15	●	SI	Perennial	Present	insects	Generalist	4
Golden dock (<i>Rumex maritimus</i>)	15	●	UNK	Annual or biennial	Absent	wind	Generalist	0
Spotted water hemlock (<i>Cicuta maculata</i>)	15	●	SC	Perennial	Present	insects	Generalist	2
Touch-me-not (<i>Impatiens</i> spp.)	8	●	SI/SC	Annual	Absent	insects	Somewhat specific insect	6
Hedge bindweed (<i>Calystegia sepium</i>)	8	●	SI	Perennial	Present	insects	Generalist	4
Southern blue flag (<i>Iris virginica</i>)	8	●	UNK	Perennial	Present	insects	Somewhat specific insect	4
Common mint (<i>Mentha arvensis</i>)	8	●	SC	Perennial	Present	insects	Generalist	2
Three-cleft or Small bedstraw*	8	●	UNK	Perennial	Present	insects	Generalist	3
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	8	●	SC	Perennial	Weakly	insects	Generalist	2
American, Purple-leaved, or Northern willow-herb**	8	●	Varies	Perennial	Present	insects	Generalist	3
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	8	●	UNK	Perennial	Absent	insects	Generalist	4
Woundwort (<i>Stachys palustris</i>)	8	●	SC	Perennial	Present	insects	Somewhat specific insect	3
Great water dock (<i>Rumex orbiculatus</i>)	8	●	UNK	Perennial	UNK	wind	Generalist	0
Sessile-fruited arrowhead (<i>Sagittaria rigida</i>)	8	●	SI	Perennial	Present	insects	Generalist	4
Arrow-leaved tearthumb (<i>Polygonum sagittatum</i>)	8	●	UNK	Annual	Absent	insects	Generalist	5
Dotted smartweed (<i>Polygonum punctatum</i>)	8	●	UNK	Annual or perennial	Present	insects	Generalist	5
Hybrid loosestrife (<i>Lysimachia hybrida</i>)	8	●	SI	Perennial	Present	insects	Generalist	4
Mild waterpepper (<i>Polygonum hydropiperoides</i>)	8	●	SC	Perennial	Present	insects	Generalist	2
Sweet flag (<i>Acorus calamus</i>)	8	●	A	Perennial	Present	insects	Generalist	2

* Three-cleft or Small bedstraw (*Galium trifidum* or *G. tinctorium*); **American, Purple-leaved, or Northern willow-herb (*Epilobium ciliatum*, *E. coloratum*, or *E. glandulosum*)

WPn53 Northern Wet Prairie

Pollinator Resources

Grass-dominated but forb-rich herbaceous communities, often with a strong shrub component, on somewhat poorly drained to poorly drained loam soils formed in glaciolacustrine sediments, unsorted glacial till, or less frequently outwash deposits. Present primarily on level to very gently sloping sites. Flooded for brief periods at most; upper part of rooting zone is not saturated for most of growing season. Drought stress is infrequent, usually brief, and not severe. Fires were very frequent historically.

Examples of insect pollinators (and their associated host plants in parentheses) that use WPn53 include:

Bees:

Macropis nuda (*Lysimachia*)

Andrena ziziae (*Zizia*)

Heriades variolosus (Asteraceae)

Protandrena aestivalis (*Solidago*)

Butterflies:

Chlosyne gorgone (*Lysimachia quadriflora*)

Chlosyne nycteis (*Rudbeckia hirta*)

Nymphalis antiopa (*Salix discolor*)

Moths:

Aethes spartinana (*Spartina pectinata*)

Calyptro canadensis (*Thalictrum dasycarpum*)

Synchlora aerata (*Rudbeckia hirta*)



Andrena ziziae (golden-alexanders mining bee) uses *Zizia* (Alexanders) species as a host plant.

Photo: Heather Holm

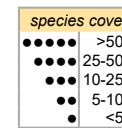


Chlosyne nycteis (silvery checkerspot) uses *Rudbeckia hirta* (black-eyed Susan) as a host plant. Photo: Bob Dunlap

WPn53 Northern Wet Prairie

Pollinator Resources Table

WPn53 Class Factsheet. Based on 167 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada goldenrod (<i>Solidago canadensis</i>)	66	••	SI	Perennial	Present	insects	Generalist	4
Sawtooth or giant sunflower*	64	••	SI	Perennial	Present	insects	Generalist	4
Prairie loosestrife (<i>Lysimachia quadriflora</i>)	62	••	SI	Perennial	Present	insects	Generalist	4
Northern bedstraw (<i>Galium boreale</i>)	60	••	SI	Perennial	Present	insects	Generalist	4
Heath aster (<i>Aster ericoides</i>)	54	•	SI	Perennial	Present	insects	Generalist	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	52	•	D	Perennial	Present	wind	Generalist	0
Eastern panicled aster (<i>Aster lanceolatus</i>)	51	•	SI	Perennial	Present	insects	Generalist	4
Common strawberry (<i>Fragaria virginiana</i>)	50	••	SC	Perennial	Present	insects	Early spring insect	3
Golden alexanders (<i>Zizia aurea</i>)	50	•	SC	Perennial	Absent	insects	Generalist	3
Spotted water hemlock (<i>Cicuta maculata</i>)	49	•	SC	Perennial	Present	insects	Generalist	2
Golden or false golden ragwort**	49	•	SI	Perennial	Varies	insects	Generalist	Varies
Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	48	•	A	Perennial	Present	insects	Generalist	2
Riddell's goldenrod (<i>Solidago riddellii</i>)	48	•	SI	Perennial	Present	insects	Generalist	4
Marsh vetchling (<i>Lathyrus palustris</i>)	47	•	SI	Perennial	Present	insects	Somewhat specific insect	5
Clasping dogbane (<i>Apocynum sibiricum</i>)	46	•	SI	Perennial	Present	insects	Generalist	4
Maximilian's sunflower (<i>Helianthus maximiliani</i>)	42	•	SI	Perennial	Present	insects	Generalist	4
Heart-leaved alexanders (<i>Zizia aptera</i>)	40	•	SC	Perennial	Absent	insects	Generalist	3
Black-eyed Susan (<i>Rudbeckia hirta</i>)	38	•	SI	Biennial or short-lived perennial	Absent	insects	Generalist	6
Northern plains blazing star (<i>Liatris ligulistylis</i>)	38	•	UNK	Perennial	Present	insects	Generalist	3
Stemless blue violets (<i>Viola sororia</i> or <i>V. nephrophylla</i>)	36	•	Varies	Perennial	Present	insects	Varies	Varies
Giant goldenrod (<i>Solidago gigantea</i>)	34	•	GM	Perennial	Present	insects	Generalist	4
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	33	••	SC	Perennial	Present	insects	Generalist	2
Swamp lousewort (<i>Pedicularis lanceolata</i>)	31	•	UNK	Perennial	Present	insects	Buzz pollination	5
Flat-topped aster (<i>Aster umbellatus</i>)	30	•	UNK	Perennial	Present	insects	Generalist	3
Gray goldenrod (<i>Solidago nemoralis</i>)	29	•	SI	Perennial	Present	insects	Generalist	4
Stiff goldenrod (<i>Solidago rigida</i>)	27	•	SI	Perennial	Present	insects	Generalist	4
Purple prairie clover (<i>Dalea purpurea</i>)	26	•	SC	Perennial	Present	insects	Generalist	2
White camass (<i>Zigadenus elegans</i>)	26	•	SI	Perennial	Present	insects	Generalist	4
Autumn sneezeweed (<i>Helenium autumnale</i>)	25	•	UNK	Perennial	Absent	insects	Generalist	4
Seaside arrowgrass (<i>Triglochin maritima</i>)	25	•	UNK	Perennial	Present	wind	Generalist	0
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	23	•	SC	Perennial	Weakly	insects	Generalist	2
Silverweed (<i>Potentilla anserina</i>)	23	••	SI	Perennial	Present	insects	Generalist	4
Smooth scouring rush (<i>Equisetum laevigatum</i>)	22	•	SC	Perennial	Present	wind, water	Generalist	0
White aster-like goldenrod (<i>Solidago ptarmicoides</i>)	22	•	SI	Perennial	Present	insects	Generalist	4
New England aster (<i>Aster novae-angliae</i>)	21	•	SI	Perennial	Present	insects	Generalist	4
Swamp thistle (<i>Cirsium muticum</i>)	21	•	GD	Biennial	Absent	insects	Generalist	6
Yellow stargrass (<i>Hypoxis hirsuta</i>)	20	•	SI	Perennial	Present	insects	Generalist	4

Kalm's lobelia (<i>Lobelia kalmii</i>)	20	●	UNK	Perennial	Weakly	insects	Very specialized insect	5
Bastard toadflax (<i>Comandra umbellata</i>)	17	●	SC	Perennial	Present	insects	Early spring insect	3
Great blazing star (<i>Liatris pycnostachya</i>)	16	●	UNK	Perennial	Present	insects	Generalist	3
Alkali plantain (<i>Plantago eriopoda</i>)	10	●●●	CH	Perennial	Absent	wind	Generalist	0
Grasses and Sedges								
Prairie cordgrass (<i>Spartina pectinata</i>)	84	●●●	UNK	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	78	●●●	SI	Perennial	Present	wind	Generalist	0
Mat muhly grass (<i>Muhlenbergia richardsonis</i>)	66	●●●	UNK	Perennial	Present	wind	Generalist	0
Tufted hair grass (<i>Deschampsia cespitosa</i>)	62	●●●	UNK	Perennial	Absent	wind	Generalist	0
Narrow reedgrass (<i>Calamagrostis stricta</i>)	50	●●	A	Perennial	Present	wind	Generalist	0
Baltic rush (<i>Juncus arcticus</i>)	48	●●	SC	Perennial	Present	wind	Generalist	0
Buxbaum's sedge (<i>Carex buxbaumii</i>)	46	●●●	UNK	Perennial	Present	wind	Generalist	0
Rigid sedge (<i>Carex tetanica</i>)	41	●	UNK	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	40	●●●	SC	Perennial	Absent	wind	Generalist	0
Slender wheatgrass (<i>Elymus trachycaulus</i>)	34	●	UNK	Perennial	Weakly	wind	Generalist	0
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	34	●	UNK	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	32	●●	SC	Perennial	Present	wind	Generalist	0
Sartwell's sedge (<i>Carex sartwellii</i>)	31	●●	UNK	Perennial	Present	wind	Generalist	0
Switchgrass (<i>Panicum virgatum</i>)	25	●●●	SC	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	24	●●	SI	Perennial	Present	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	19	●●	SI	Perennial	Present	wind	Generalist	0
Little bluestem (<i>Schizachyrium scoparium</i>)	15	●●	UNK	Perennial	Present	wind	Generalist	0
Very slender sedge (<i>Carex praegracilis</i>)	14	●●	UNK	Perennial	Present	wind	Generalist	0
Salt grass (<i>Distichlis spicata</i>)	8	●●●	SI	Perennial	Present	wind	Generalist	0
Shrubs								
Slender willow (<i>Salix petiolaris</i>)	56	●●	D	Perennial	Present	insects	Early spring insect	5
Bebb's willow (<i>Salix bebbiana</i>)	47	●●	D	Perennial	Present	insects	Early spring insect	5
Bog birch (<i>Betula pumila</i>)	44	●●●	Di	Perennial	Present	wind	Generalist	0
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	43	●●●	SC	Perennial	Absent	insects	Generalist	3
Pussy willow (<i>Salix discolor</i>)	43	●●	D	Perennial	Present	insects	Early spring insect	5
Red-osier dogwood (<i>Cornus sericea</i>)	20	●●	SI	Perennial	Present	insects	Generalist	4
Wood's rose (<i>Rosa woodsii</i>)	15	●	SI	Perennial	Present	insects	Generalist	4
Tree Canopy								
Quaking aspen	-	-	D	Perennial	Present	wind	Generalist	0
Tree Understory								
Quaking aspen	18	●	D	Perennial	Present	wind	Generalist	0

* Sawtooth or giant sunflower (*Helianthus grosseserratus* or *H. giganteus*); ** Golden or false golden ragwort (*Senecio aureus* or *S. pseudoaureus*); ***Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*)

WPs54 Southern Wet Prairie

Pollinator Resources

Grass-dominated but forb-rich herbaceous communities on poorly drained to very poorly drained loam soils formed in lacustrine sediments, unsorted glacial till, or less frequently outwash deposits. Typically in slight depressions, sometimes on very gentle slopes. Flooded for brief periods at most; upper part of rooting zone is not saturated for most of growing season, but saturation usually persists in lower zone for much of season.

Examples of insect pollinators (and their associated host plants in parentheses) that use WPs54 include:

Bees:

Andrena vernalis (*Zizia*)
Andrena simplex (*Symphytum*)
Andrena chromotricha (*Solidago*)

Butterflies:

Danaus plexippus (*Asclepias*)
Anatrytone logan (*Andropogon gerardii*)
Poanes viator (*Carex lacustris*)

Moths:

Schinia nundina (*Aster lanceolatus*)
Eugonobapta nivosaria (*Thalictrum dasycarpum*)
Dargida rubripennis (*Panicum virgatum*)
Schinia indiana (*Phlox pilosa*)



Danaus plexippus (monarch) uses *Asclepias* (milkweed) species as a host plant. Photo: Bob Dunlap

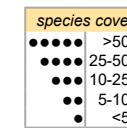


Schinia nundina (goldenrod flower moth) uses *Aster lanceolatus* (panicked aster) as a host plant.
Photo: Kyle Johnson

WPs54 Southern Wet Prairie

Pollinator Resources Table

WPs54 Class Factsheet. Based on 51 plots. November 2024



Forbs	species frequency in NPC (%)	species cover (when present)	Compatibility	Longevity	Clonality	Principal Pollen Vector	Pollinator requirements	Pollination Index
Canada goldenrod (<i>Solidago canadensis</i>)	78	●●●	SI	Perennial	Present	insects	Generalist	4
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	69	●	D	Perennial	Present	wind	Generalist	0
Heath aster (<i>Aster ericoides</i>)	67	●	SI	Perennial	Present	insects	Generalist	4
Eastern panicle aster (<i>Aster lanceolatus</i>)	61	●	SI	Perennial	Present	insects	Generalist	4
Clasping dogbane (<i>Apocynum sibiricum</i>)	61	●	SI	Perennial	Present	insects	Generalist	4
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	57	●●	SC	Perennial	Present	insects	Generalist	2
Common strawberry (<i>Fragaria virginiana</i>)	55	●	SC	Perennial	Present	insects	Early spring insect	3
Great blazing star (<i>Liatris pycnostachya</i>)	53	●	UNK	Perennial	Present	insects	Generalist	3
Sawtooth and Giant sunflower (<i>Helianthus</i> spp.)*	51	●●●	SI	Perennial	Present	insects	Generalist	4
Golden alexanders (<i>Zizia aurea</i>)	49	●	SC	Perennial	Absent	insects	Generalist	3
Giant goldenrod (<i>Solidago gigantea</i>)	45	●●	GM	Perennial	Present	insects	Generalist	4
Golden or False golden ragwort (<i>Senecio aureus</i> or <i>S. pseudoaureus</i>)	43	●●	SI	Perennial	Varies	insects	Generalist	Varies
Riddell's goldenrod (<i>Solidago riddellii</i>)	41	●	SI	Perennial	Present	insects	Generalist	4
Stemless blue violets (<i>Viola sororia</i> and <i>V. nephrophylla</i>)	41	●	Varies	Perennial	Present	insects	Varies	Varies
Northern plains blazing star (<i>Liatris ligulistylis</i>)	41	●	UNK	Perennial	Present	insects	Generalist	3
Heart-leaved alexanders (<i>Zizia aptera</i>)	39	●	SC	Perennial	Absent	insects	Generalist	3
Autumn sneezeweed (<i>Helenium autumnale</i>)	37	●	UNK	Perennial	Absent	insects	Generalist	4
Spotted water hemlock (<i>Cicuta maculata</i>)	35	●	SC	Perennial	Present	insects	Generalist	2
Stiff goldenrod (<i>Solidago rigidula</i>)	35	●	SI	Perennial	Present	insects	Generalist	4
Prairie loosestrife (<i>Lysimachia quadriflora</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Prairie phlox (<i>Phlox pilosa</i>)	33	●	SI	Perennial	Absent	insects	Early spring insect, Somewhat specific insect	6
Swamp milkweed (<i>Asclepias incarnata</i>)	33	●	SC/si	Perennial	Absent	insects	Somewhat specific insect	5
White camass (<i>Zigadenus elegans</i>)	33	●	SI	Perennial	Present	insects	Generalist	4
Northern bedstraw (<i>Galium boreale</i>)	29	●	SI	Perennial	Present	insects	Generalist	4
Purple prairie clover (<i>Dalea purpurea</i>)	29	●	SC	Perennial	Present	insects	Generalist	2
Yarrow (<i>Achillea millefolium</i>)	29	●	SI	Perennial	Present	insects	Generalist	4
Pale-spiked lobelia (<i>Lobelia spicata</i>)	29	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Canada anemone (<i>Anemone canadensis</i>)	27	●●	SI	Perennial	Present	insects	Generalist	4
Gray-headed coneflower (<i>Ratibida pinnata</i>)	27	●	SI	Perennial	Present	insects	Generalist	4
Marsh vetchling (<i>Lathyrus palustris</i>)	27	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Smooth scouring rush (<i>Equisetum laevigatum</i>)	25	●	SC	Perennial	Present	wind, water	Generalist	0
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	25	●	SC	Perennial	Weakly	insects	Generalist	2
Maximilian's sunflower (<i>Helianthus maximiliani</i>)	24	●●	SI	Perennial	Present	insects	Generalist	4
Field horsetail (<i>Equisetum arvense</i>)	24	●	SC	Perennial	Present	wind, water	Generalist	0
Grass-leaved goldenrod (<i>Euthamia graminifolia</i>)	22	●●	A	Perennial	Present	insects	Generalist	2
New England aster (<i>Aster novae-angliae</i>)	22	●	SI	Perennial	Present	insects	Generalist	4
Canada tick trefoil (<i>Desmodium canadense</i>)	22	●	A	Perennial	Absent	insects	Somewhat specific insect	4

Skyblue aster (<i>Aster oolentangiensis</i>)	22	●	SI	Perennial	Present	insects	Generalist	4
Swamp thistle (<i>Cirsium muticum</i>)	22	●	GD	Biennial	Absent	insects	Generalist	6
Bottle gentian (<i>Gentiana andrewsii</i>)	20	●	SC	Perennial	Absent	insects	Somewhat specific insect	4
Rough bugleweed (<i>Lycopus asper</i>)	18	●	SC	Perennial	Weakly	insects	Generalist	2
Veiny pea (<i>Lathyrus venosus</i>)	18	●	SI	Perennial	Present	insects	Somewhat specific insect	5
Swamp lousewort (<i>Pedicularis lanceolata</i>)	16	●	UNK	Perennial	Present	insects	Buzz pollination	5
Culver's root (<i>Veronicastrum virginicum</i>)	14	●●	UNK	Perennial	Present	insects	Generalist	3
Flat-topped aster (<i>Aster umbellatus</i>)	14	●●	UNK	Perennial	Present	insects	Generalist	3
Great lobelia (<i>Lobelia siphilitica</i>)	12	●	SC	Perennial	Weakly	insects	Somewhat specific insect	3
Yellow stargrass (<i>Hypoxis hirsuta</i>)	12	●	SI	Perennial	Present	insects	Generalist	4
Cup plant (<i>Silphium perfoliatum</i>)	12	●	SC	Perennial	Present	insects	Generalist	2
Wood lily (<i>Lilium philadelphicum</i>)	12	●	SI	Perennial	Present	insects	Generalist	4
Grasses and Sedges								
Prairie cordgrass (<i>Spartina pectinata</i>)	86	●●●	UNK	Perennial	Present	wind	Generalist	0
Big bluestem (<i>Andropogon gerardii</i>)	80	●●●	SI	Perennial	Present	wind	Generalist	0
Indian grass (<i>Sorghastrum nutans</i>)	51	●●●	SI	Perennial	Present	wind	Generalist	0
Switchgrass (<i>Panicum virgatum</i>)	47	●●●	SC	Perennial	Present	wind	Generalist	0
Woolly sedge (<i>Carex pellita</i>)	41	●●●	SI	Perennial	Present	wind	Generalist	0
Rigid sedge (<i>Carex tetanica</i>)	39	●	UNK	Perennial	Present	wind	Generalist	0
Flattened spikerush (<i>Eleocharis compressa</i>)	39	●	SC	Perennial	Present	wind	Generalist	0
Mat muhly grass (<i>Muhlenbergia richardsonis</i>)	33	●●●	UNK	Perennial	Present	wind	Generalist	0
Bluejoint (<i>Calamagrostis canadensis</i>)	25	●●	A	Perennial	Present	wind	Generalist	0
Baltic rush (<i>Juncus arcticus</i>)	25	●●	SC	Perennial	Present	wind	Generalist	0
Tussock sedge (<i>Carex stricta</i>)	24	●●●	UNK	Perennial	Present	wind	Generalist	0
Prairie dropseed (<i>Sporobolus heterolepis</i>)	24	●●	SC	Perennial	Absent	wind	Generalist	0
Narrow reedgrass (<i>Calamagrostis stricta</i>)	24	●	A	Perennial	Present	wind	Generalist	0
Fowl manna grass (<i>Glyceria striata</i>)	20	●●	UNK	Perennial	Present	wind	Generalist	0
Half-Shrubs								
Prairie rose (<i>Rosa arkansana</i>)	29	●●	SC	Perennial	Present	insects	Generalist	2
Shrubs								
Red-osier dogwood (<i>Cornus sericea</i>)	18	●	SI	Perennial	Present	insects	Generalist	4
Pussy willow (<i>Salix discolor</i>)	16	●	D	Perennial	Present	insects	Early spring insect	5

*Sawtooth and Giant sunflower (*Helianthus grosseserratus* and *H. giganteus*)