

Pollinator-friendly habitat at home

Native Flowers

- Choose flowering plants **native** to your province.
- Native plants are important **hosts to specialist pollinators**.
- **Think diversity:** The more diverse your garden, the more pollinators it can support.
- **Think seasonal:** Plant flowers that bloom at different times of year so that food and shelter are available from spring to fall.
- Avoid plants that have been treated with **pesticides**, as some chemicals can remain in the plant tissues consumed by pollinators.

Nesting and Overwintering Habitat

- Depending on the species, pollinators need dead wood, hollow stems, leaf litter, bare soils, and decaying materials as places to nest, for larvae to develop, and for surviving the winter.
- **Be hands-off:** Leave your garden intact in fall. Leaves and stems offer insulation and shelter.
 - **Rake and rest:** A few piles of leaves are great for nesting and overwintering.
 - Wait to clear your garden until **after the last frosts** in spring. This gives overwintering insects an opportunity to emerge.

Native Planting Example

- | | |
|------------------------------------|---|
| Prairie crocus | S |
| <i>Anemone patens</i> | P |
| Early blue violet | R |
| <i>Viola adunca</i> | I |
| Blue-eyed grass | N |
| <i>Sisyrinchium montanum</i> | G |
| Heartleaf Alexander | |
| <i>Zizia aptera</i> | |
| Purple prairie clover | |
| <i>Dalea purpurea</i> | S |
| Black-eyed Susan | U |
| <i>Rudbeckia hirta</i> | M |
| Bergamot | M |
| <i>Monarda fistulosa</i> | E |
| Swamp milkweed | R |
| <i>Asclepias incarnata</i> | |
| Stiff goldenrod | |
| <i>Solidago rigida</i> | |
| Prairie sunflower | |
| <i>Helianthus pauciflorus</i> | F |
| Smooth aster | A |
| <i>Symphotrichum laeve</i> | L |
| New England aster | L |
| <i>Symphotrichum novae-angliae</i> | |



References

- ¹Sheffield *et al.* 2014. Chpt. 11 In Arthropods of Canadian Grasslands, Vol. 4. Biological Survey of Canada. pp. 427-467.
- ²Bousquet *et al.* 2013. Checklist of the beetles (Coleoptera) in Canada and Alaska, 2nd ed. Zookeys 360: 1-44.
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Native Plant Providers:
 prairieoriginals.com
 prairieflora.com
 winnipeg.ca/livingprairie

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Conserving Our Native Insect Pollinators



Who they are, and what you can do to help.

What are pollinators?

A pollinating insect transports pollen from the flower of one plant to the flower of another plant of the same species. When the pollen (male) contacts the stigma (female) of the flower, fertilization follows. Pollinators help create the seeds that will produce the next generation of about 85% of all flowering plant species.

A variety of different insects are responsible for pollination, including bees, wasps, flies, beetles, butterflies, and moths. Some of these insects are extremely reliant on particular native host plants to complete their life cycles.

Why are pollinators important?

Our pollinators are important for ecosystems and agriculture. Insect pollination increases genetic diversity in the plant community, which translates into hardier populations and thriving natural ecosystems. Pollination from wild and managed insects increases yields in our food crops. Without our native pollinators, habitat would diminish, plant species would be lost, and food production would suffer.

Pollinators face a number of challenges to their survival, including climate change, pesticides, parasites, diseases, and habitat loss. A combination of these stressors have resulted in population declines. Fortunately, there are very simple things that can be done to improve the health and numbers of these essential insects. Providing pollen and nectar, places to nest, and overwintering habitat can make a big difference.

Who are our pollinators?

Bees

- Four wings
- Long antennae
- Hairy and/or metallic bodies
- Pollen basket
- Sting



Bees come in a variety of shapes and sizes. Of the approximately 800 species of bee in Canada, the prairie region has some of the greatest diversity, with ~387 described species¹. The majority are solitary bees which do not develop hives or colonies with workers and a queen. Instead, a foundress female provisions her young with pollen and nectar, who then feed and develop into adults that go on to produce offspring of their own. Bumble bees are eusocial (have a queen and worker daughters), and every colony is started by a new queen each spring.

Bees feed their young by gathering pollen and nectar. Pollen is transported in different ways depending on the species: Pollen baskets (corbicula) on the hind legs, regions of dense hair on the legs or abdomen (scopa), or internally in a small stomach called a crop.

Did You Know...

Honey bees are not native to North America. This important agricultural pollinator arrived with European settlers, and continues to be used for crop pollination and honey production. Natural areas do not require honey bees to thrive; pollination is provided by native insects.



Wasps

- Four wings
- Long antennae
- Bright markings with little hair
- No pollen basket
- Sting

Wasps are predatory insects that raise their young on protein from other arthropods. However, wasps will still visit flowers for a drink of nectar, particularly near the end of summer when prey are harder to find. Wasps can act as effective pollinators when visiting multiple flowers.

Did You Know...

Wasps and some flower fly larvae are considered beneficial. They feed on garden pests that can damage your fruits and veggies.

Flies

- Two wings
- Variable antennae
- Bright markings
- Hairy or bristly
- No pollen basket
- No sting



A number of species of fly play a large role in pollination. Flies visit flowers to feed on pollen or nectar, moving pollen on their bristly bodies as a result. Flower flies are common floral visitors, so much so that they have developed colour patterns that mimic bees and wasps. This resemblance to stinging insects offers protection from predators. Other groups of flies, such as blow flies, parasitic flies, and house flies, will also pollinate flowers.

Butterflies

- Four wings with bright scales
- Wings held upright or open
- Clubbed and/or hooked antennae



Much of the life of a butterfly or moth is spent as a caterpillar that will only feed on particular native host plants. If host plants are not available, they cannot complete their life cycle. As adults, butterflies pollinate flowers when feeding on nectar. Pollen adheres to their proboscis (long tongue), feet, or bodies. Not all adult moths feed on nectar, but day-flying clearwing moths are often mistaken for hummingbirds or bumble bees.



Beetles

- Two hardened wings (elytra)
- Two flight wings
- Diverse body forms and colours
- Can be very hairy

Beetles are extremely diverse, with about 8000 species found in Canada². Not all beetles visit flowers, but those that do are often brightly coloured and quite hairy. Pollen adheres to the hair while foraging on flowers.

Moths

- Four wings, may lack scales
- Wings folded over body
- Feathered or thread-like antennae



Pollinator life cycle from egg to adult

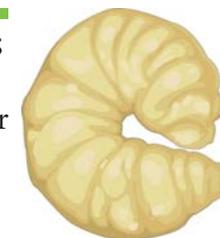


Egg

Most pollinating insects require nutrients from pollen to produce eggs. Pollen contains the protein important for egg development and larval growth.

Larva

Bee larvae feed on a pollen ball; a combination of pollen and nectar collected by their mother or sisters. Larvae of other pollinators may be predators or feed on decaying material.



Pupa



Pupae do not feed. The tissues of the insect are undergoing the final changes required to become an adult. Bee pupae remain in the nest, but pupae of other pollinators may be suspended on twigs, inside stems, or in the soil.

Adult

Adult pollinators feed on pollen and nectar. Nectar provides sugars and water, giving insects the energy to pollinate wildflowers and crops. Both pollen and nectar need to be available from early spring to late fall. This offers a variety of pollinators the resources they require to complete their life cycles. Native plants are preferred by local pollinators, and provide the necessary hosts for specialist insects.

