

## Pollinators in Ontario

The delicious food we eat every day and the magnificent nature that surrounds us are a direct result of pollinators. In order to produce seeds, plants need pollinators to move pollen from one plant part (the anther) to another (the stigma). Pollinators can include water, wind, and even gravity, but most people think of animals, and even more specifically, insects, when they think of pollinators. Most of the 250,000 flowering plants we see today evolved ways to attract animals in order to help them with pollination. There are many types of animal pollinators: birds, bats, reptiles, spiders, snails, and of course, insects like butterflies, wasps, beetles, flies, and bees. Bees are, perhaps, the best known class of pollinators, but did you know that the honey bee (*Apis mellifera*) is not native to North America! Before honey bees were introduced, and even today, wild bees play a vital role in pollinating both wild plants and managed crops.

There are over 400 species of wild bees in Ontario. Bees may be the best pollinators for reasons described below, but each and every species of animal pollinator has an important niche in the ecological fabric of our ecosystems.

### Why bees are the best:

Bees need pollen and nectar for food, so they are more likely than other pollinators to pick up and drop off pollen as they move from flower to flower. Their hairy bodies brush against pollen even when they are not actively collecting it. Bee hairs are slightly positively charged with energy, so that negatively charged pollen is actually attracted magnetically to move onto bees as they forage. Also, flowers can only pollinate their own species, and bees usually forage on one plant crop at a time, so they tend to carry pollen to and from the same flower species. Lastly, bees can visit many flowers on a single foraging trip, so they are efficient pollinators for plants that want to spread their pollen as quickly as possible.

### Flight Distance of bees:

Honey bees – 6 km  
 Bumble bees – 1.5 km or slightly more  
 Mining bees and leafcutter bees – 350-450 m  
 Sweat bees and small carpenter bees - <200 m



Metallic green sweat bee (*Agapostemon sp.*)  
(Kiera Newman)

## Other groups of pollinators and their advantages:

### Flies

Flies often emerge earlier in the spring and can fly at lower temperatures than many bees.

Flowers that have evolved to attract flies often smell like rotting meat to trick flies into visiting and laying eggs within the flower, carrying out incidental pollen transfer in the process. They do not usually take pollen from flowers for food as bees do, and therefore may leave more pollen for pollination. Flies are important pollinators of crops like strawberries, onions and carrots. In fact, over 100 cultivated plants rely on fly pollination including cocoa trees – that’s right, no chocolate with flies!



Hoverflies (family Syrphidae) (Kiera Newman)

### Butterflies and Moths

Butterflies may not be as fuzzy as bees, but they are still important pollinators for some flowers! Their long legs and tongues (proboscises) keep their contact with flowers to a minimum, so less pollen is incidentally transferred while they feed on nectar.

However, they have their strengths, too. For example, they are larger than many small wild bees and can lift packages of pollen called pollinia that some plants produce. They are active during the day and are attracted by colourful flowers. Moths are arguably better pollinators than their butterfly cousins because they have shorter legs, bringing them closer to a flower when they land, and fuzzier bodies that pick up more pollen. Active mainly from dusk until dawn, and attracted by scent, moths are important for night-blooming plants. There are numerous species of moths in North America (>10,000) and many are specialist pollinators, such as the Yucca moth that pollinates the Yucca plant.



Orange Sulphur (*Colias eurytheme*) (Kiera Newman)

### Wasps

Most wasp larvae are carnivorous and therefore are not fed pollen or nectar as young bees are, but adult wasps are vegetarians, eating mainly nectar and rotting fruit. They often pollinate flowers as they fly from plant to plant in search of nectar. Some wasps also transfer nectar when they visit flowers thinking they are females of their species, for example orchid wasps. Wasps are not very hairy, but they are abundant, so make good pollinators due to their numbers.



Thread-waisted wasp (family Sphecidae) (Wikipedia)