

Bees



Bees come in a wide variety of sizes, shapes and colours. They also vary in their lifestyle, the flowers they visit, the nests they build and the season they are active.

Our native bees have evolved with our diverse landscapes - from prairies and meadows to high alpine mountain environments and the tundra of the north. Canada's 725 species of bees live very differently, with approximately 90% of bees living in solitary environments and the remainder living socially or communal.

Solitary bees are those that construct their own nest to rear their offspring. A single female bee is responsible for completing all the tasks that many bees carry out in social nests. She constructs the nest, forages for food, lays the eggs and defends the nest all in the 4 - 6 weeks that she is alive as an adult.

Social bees form small colonies, and have multiple overlapping generations of queen bees and her offspring at one time. Labor of nest construction, food foraging, and rearing offspring is cooperative within the bee colony.

Ontario bee species are group into five families

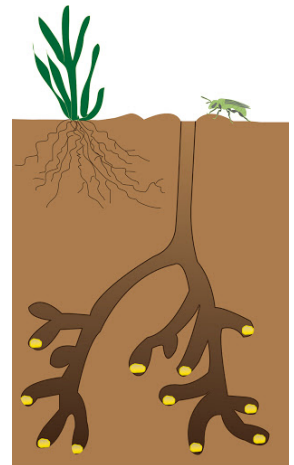
Bee Family Name	Types of bees in this family in Ontario
Andrenidae	Miner bees
Apidae	Squash, carpenter, bumblebee, honey bees, and cuckoo
Colletidae	Cellophane and masked bees
Halictidae	Sweat and pearly-banded bees
Megachilidae	Leafcutter, orchard and mason bees

Nesting

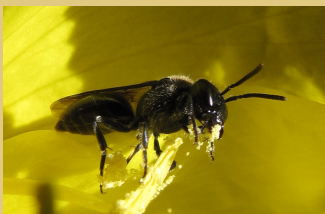
Nesting sites vary among the different species of bees, with 70% constructing their nest below ground and the other 30% of bees construct their nest above ground.

Female ground nesting bees excavate shallow or intricate burrows in sandy soils and dense loam or silt-loam soil. Since soil becomes saturated with water, bees line the nest cells with waterproofing material to protect the brood cells.

Above ground nesting bees construct their nests in preexisting cavities in dead trees, logs on the ground or in the holes of flower stalks and soft woody branches. Some cavity nesting bees will excavate their own cavity in wood, flower stalks or soft woody branches such as elderberry or sumac. Dry, hollow or pithy perennial flower stalks from the previous growing season provide excellent nesting opportunities.



Graphic by: Heather Holm



Most bees are generalists, meaning they will forage for pollen and nectar on a variety of plant species. However, certain native bees will only forage for pollen on specific species of plants. These are known as specialist bees because they depend on a few families of flowering plants for their survival. One example is the sweat bee (*Lasioglossum oenotherae*) - pictured left, who collects only evening primrose pollen. This is why planting and protecting native plants is so important! We need certain species of plants to provide food and shelter for our native specialist bees.

Andrenidae - Miner Bees

This family of bees nest in the ground, with an appropriate common name - mining bees. They are solitary bees that excavate single or aggregate nests in lawns, fields, gardens, wooded edges and sandy sites such as beaches. Many are active only in spring, the next generation remain underground developing through the summer, fall and winter, then emerge the next spring. Since they are one of the earliest bees to emerge in spring, they forage for food on willows, maples, violets and other blooming spring wildflowers.

Apidae - Bumblebees: These big fuzzy bees build social, annual colonies in rodent holes, under plant debris, in bird nest boxes or in sheds, barns or other sites that provide insulation.

Digger Bees: These bees are solitary and build their nests in ground embankments along rivers, in large piles of clay, bare ground and upturned tree root masses, and cavities in rotting wood.

Carpenter Bees: This family of bees may have solitary lives, communal or social colonies. They may have 1 to 3 generations born in one year. Nesting sites include: rotting and woody or herbaceous plant stems. As their common name implies, these bees excavate their nests in wood by chewing holes with their mandibles.

Squash Bees: These interesting bees specialize in pollinating plants in the Cucurbita family such as squash and pumpkin. They are solitary bees that construct nests in the ground close to the forage source (squash flowers).

Long horned bees: These bees are solitary and nest in the ground. Their favourite flowers are in the Asteraceae family - sunflowers, coneflowers, asters and goldenrod.

Honey Bees: These bees build social, perennial colonies in man made hives, or in the wild- in tree cavities. Honey bees came to North America in 1620 and provided wax for candles, and honey for new settlers.

Cuckoo Bees: This family of bees do not actually build their own nest. Instead they will search for an active ground nest, lay low and then invade the nest and lay their eggs when the female host bee is away.

Colletidae - Cellophane Bees: These bees live solitary and construct their nests in bare soil, on slopes or riparian embankments (land beside creeks, streams, gullies, rivers and wetlands) or sparsely vegetated sites in prairies or woodland edges.

Yellow- Faced Bee: This bee also lives solitary, but builds nests in cavities; they use preexisting cavities in hollow stems, beetle burrows in wood or in rock cavities.

Halictidae Metallic Green Sweat Bee: These colourful bees can be solitary, communal or semi-social. They excavate nests in the ground, usually in well drained soil, and sometimes in rotting wood such as tree trunks, limbs and stumps.

Sweat Bee: This species of bee can live in solitary, communal or social nests. They have been found to have social nests in warm climates and solitary nests in cool, northern or high-altitude climates, where a shorter growing and breeding season occur. They nest in the ground in well drained, compact soil or in rotting wood.

Megachilidae: Mason Bees and Leafcutter Bees

Both species are solitary bees, who nest in cavities below or above ground. They may choose holes in standing dead trees, pithy plant stems, abandoned mud dauber wasp nests and snail shells or in shallow cavities in the soil.

Mason bees are so efficient at pollinating fruit orchards such as apple, cherry and plum that they have another common name: Orchard Bees.

Leafcutter bees actually cut out circular pieces of leaves or petals to be used in the construction of their nests.

See photos of all these different species of bee on the
NATIVE BEES poster by Heather Holm

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