

FACT SHEETS

WILD BEES OF QUEBEC

Quebec is home to more than 300 species of wild bees, spread across at least 30 genera. Wild pollinators are species that live and reproduce naturally in the environment without human intervention. Managed pollinators, on the other hand, are species that are bred, transported, or housed by humans to provide pollination services in agriculture, or, in the case of honey bees, to produce honey.



Megachile rotundata is widely managed for the production of alfalfa and hybrid canola in the west, and blueberry in Quebec.

Bombus impatiens, a native bumble bee, is essential for greenhouse tomato pollination and other high-value crops.



CROP POLLINATION

In agriculture, wild bees, play a crucial role as pollinators, often outperforming honey bees in crops due to their foraging efficiency and time when they are active.

Increasing bee diversity in and around farmland improves pollination reliability and can boost both crop yield and quality.

CONSERVATION

Supporting both wild and managed pollinators is key to building a resilient and productive agricultural system in Quebec.

However, many wild bee species are in decline due to habitat degradation, pesticide exposure, climate change, or competition with managed species.

These fact sheets list some of the bee genera found in Quebec, with some information about their nesting habitats, ecology and how you can help protect them.



Bombus on
echinaceae



Andrena on an
apple flower



Agapostemon in
strawberry

FACT SHEET

GENUS

Common Name
Family

ANDRENA

Mining bees
Andrenidae

Specialist species in Quebec: *Andrena asteris*, *Andrena clarkella*, *Andrena distans*, *Andrena erigeniae*, *Andrena erythrogaster*, *Andrena erythronii*, *Andrena fragilis*, *Andrena geranii*, *Andrena hirticincta*, *Andrena andrena*, *Andrena nubecula*, *Andrena platyparia*, *Andrena simplex*, *Andrena ziziae*

Appearance:

6-15mm.
Black/dark brown body.
White/rust coloured hairs.
Have long hairs on hind legs.

Behavior:

Solitary.
Active early spring to early
summer (April-June).

NESTING HABITAT:

- Members of this genus create underground nests in bare patches of ground, near their preferred host plant.

CONSERVATION TIPS:

- Many *Andrena* bees emerge early in the season, so early-blooming flowers can support these bees.
- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Leave patches of exposed ground to support their nesting habitat.

SPECIES DISTRIBUTION:

- There are about 74 species of *Andrena* in Canada, and at least 51 have been detected in Quebec.

Andrena frigida
Male, Face



Andrena clarkella
Female, Side



Andrena clarkella
Female, Face



FACT SHEET

GENUS

Common Name

Family

ANTHOPHORA

Digger bees

Apidae

Appearance:

12-15mm.

Black or black and white abdomen.

Light hairs.

Look similar to bumble bees.

Behavior:

Solitary.

Active in the summer

(June-September).

NESTING HABITAT:

- *Anthophora* make their nests in the soil by loosening it up using their mandibles, and digging tunnels with their front legs.
- Although they are solitary, they tend to build their nests close to one another.

SPECIES DISTRIBUTION:

There are about 11 species of *Anthophora* in Canada, and at least 1 has been detected in Quebec.

CONSERVATION TIPS:

- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Set aside farmland to provide them with year-round food and a safe places to nest, mate, rest, and avoid predators.

Anthophora terminalis
Male, Face



Hylaeus basalis
Female, Side



Anthophora terminalis
Female, Face



FACT SHEET

GENUS

Common Name

Family

BOMBUS

Bumblebees

Apidae

Threatened/Vulnerable species in Quebec: *Bombus terricola*, *Bombus fervidus*, *Bombus affinis*, *Bombus suckleyi*

Appearance:

10-23mm.

Round body, covered in hairs.

Coloration may include black, white, orange, or yellow stripes.

Behavior:

Most are eusocial.

Active from early spring to late fall (April- October).

NESTING HABITAT:

- Most bumblebees live in colonies. Each colony consist of one queen, workers, drones (males), and the eggs/larvae/pupae.
- Queens often nest underground in abandoned rodent holes, but also use hollow trees, bird nests, or under grass patches.

SPECIES DISTRIBUTION:

- There are about 41 species of *Bombus* in Canada, and at least 20 have been detected in Quebec.

CONSERVATION TIPS:

- Create and protect bumblebee habitats (Ex: leave large areas of land uncut and undisturbed).
- Avoid mowing, burning, or herbicide/pesticide use near nesting or foraging areas during their active season.

Bombus rufocinctus
Male, Side



Bombus ternarius
Female, Face



Bombus rufocinctus
Female, Side



FACT SHEET

GENUS

Common Name

Family

CERATINA

Small carpenter bees

Apidae

Appearance:

3-15mm.

Dark, shiny, and mostly hairless body.
Some possess yellow markings on the face/body.

Behavior:

Most are solitary.

Active early spring to early fall (April-September).

NESTING HABITAT:

- This species nests in hollowed plant stems, where the female deposits eggs in individual cells, separated by partitions made of wood debris and saliva.

CONSERVATION TIPS:

- Do not cut down flower stalks during the winter.
- Some *Ceratina* species love raspberry stems for nesting.
- Cut overwintered flower stalks right before the *Ceratina* start being active.
- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.

SPECIES DISTRIBUTION:

- There have been least 4 species of *Ceratina* detected in Quebec.

Ceratina dupla
Female, Face



Ceratina mikmaqi
Female, Back



Ceratina mikmaqi
Female, Face



FACT SHEET

GENUS

Common Name

Family

COLLETES

Plasterer/Cellophane bees

Colletidae

Specialist species in Quebec: *Colletes simulans*

Appearance:

7-16mm.

Black body.

Hairy head and thorax and bands of hair on their abdomen.

Behavior:

Mostly solitary.

Active from spring to summer (April-July).

NESTING HABITAT:

- Most *Colletes* species make their nests in the ground line their brood cells with a waterproof, cellophane-like secretion to protect them from fungi and water.
- Although they are solitary, some *Colletes* species tend to build their nests close to one another.

CONSERVATION TIPS:

- Avoid mowing, burning, or herbicide/pesticide use near nesting or foraging areas during their active season.
- Require well-drained, sandy soil for nesting.

SPECIES DISTRIBUTION:

- There are about 33 species of *Colletes* in Canada, and at least 4 have been detected in Quebec.

Colletes kincaidii
Female, Back



Colletes kincaidii
Femelle, Face



Colletes kincaidii
Female, Side



FACT SHEET

GENUS

COELIOXYS

Common Name

leaf-cutting cuckoo/sharp-tailed bees

Family

Megachilidae

Cleptoparasitic species in Quebec: *Coelioxys novomexicanus*, *Coelioxys sayi*, *Coelioxys octodentata*, *Coelioxys porterae*

Appearance:

7–14mm.

Black/dark brown body.
Pale hair bands on abdomen.

Behavior:

Cleptoparasite
Active from summer to fall (June–September).

NESTING HABITAT:

- Cleptoparasitic species are indicators of biodiversity by their presence, which indicates a rich and balanced ecosystem.

The term *cleptoparasite* refers to a behavior where an animal lays its eggs in another species' nest so its babies can eat the food meant for the host's young.

- Members of this genus parasitize leafcutter bee (*Megachile*) nests.

CONSERVATION TIPS:

- Protect and restore diverse nesting and foraging habitats that support both the parasite and its host species.
- Monitor host-parasite dynamics and promote native plant diversity
- Avoid broad-spectrum pesticides.

SPECIES DISTRIBUTION:

- There are about 19 species of *Coelioxys* in Canada, and at least 4 have been detected in Quebec.

Coelioxys octodentata
Male, Face



Coelioxys porterae
Male, Top



Coelioxys porterae
Male, Face



FACT SHEET

GENERA

Common Name

Family

AGAPOSTEMON, AUGOCHLORA AUGOCHLORELLA

Green sweat bees

Halictidae

Appearance:

4-11mm

Very shiny metallic green and blue bees. Some species (*Agapostemon*) have a black and yellow striped abdomens.

Behavior:

Generally solitary, some species exhibit social behaviors
Primarily nest in the ground.

Active from early spring to early fall (April-September).

NESTING HABITAT:

- Most green sweat bees nest in the ground.
- Their nests often consist of a main burrow with lateral tunnels leading to individual brood cells.
- Some species, particularly in the genera *Augochlora* may also nest in decaying wood.

CONSERVATION TIPS:

- Leave patches of bare soil for ground nesting, especially near flowerbeds.
- Plant a diversity of native flowers.
- If one lands on you, let it catch a drop of sweat, it's a source of sodium and other nutrients for them (they rarely bite).

SPECIES DISTRIBUTION:

- There are at least 5 species of green sweat bees that have been detected in Quebec.

Agapostemon virescens
Female, Side



Augochlora pura
Male, Side



Augochlorella aurata
Female, Side



FACT SHEET

GENUS

Common Name

Family

HALICTUS

Sweat bees

Halictidae

Appearance:

5-15mm.

Dark body.

Light hair bands on abdomen.

Some look slightly metallic green.

Behavior:

Some solitary, some eusocial. Their social behavior is plastic, varying depending on environmental factors.

Active from early spring to early fall (April-September).

NESTING HABITAT:

- *Halictus* bees nest underground. Some species are solitary, while others share a common nest entrance.
- They deposit their eggs in cells lined with a waterproof secretion and supply their larvae with a mixture of pollen and nectar.

SPECIES DISTRIBUTION:

- There are about 12 species of *Halictus* in Canada, and at least 3 have been detected in Quebec.

CONSERVATION TIPS:

- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Set aside farmland to provide them with year-round food and a safe places to nest, mate, rest, and avoid predators.

Halictus ligatus
Male, Face



Halictus ligatus
Female, Side



Halictus confusus
Female, Face



FACT SHEET

GENUS

Common Name

Family

HYLAEUS

yellow-faced/Masked bees

Colletidae

Appearance:

5-7mm.

Black body with yellow or white markings on face and legs. wasp-like appearance.

Behavior:

Solitary.

Active early spring to early fall (May-September).

NESTING HABITAT:

- *Hylaeus* nest in holes in wood or stems. They line their nests with a cellophane-like material and fill each brood cell with a liquid mix of pollen and nectar, then lay an egg on top.

SPECIES DISTRIBUTION:

- There are about 20 species of *Hylaeus* in Canada, and at least 13 have been detected in Quebec.

CONSERVATION TIPS:

- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Provide a variety of hollow and pithy stems. Leave these stems in place through the summer and winter to allow bees to use them.

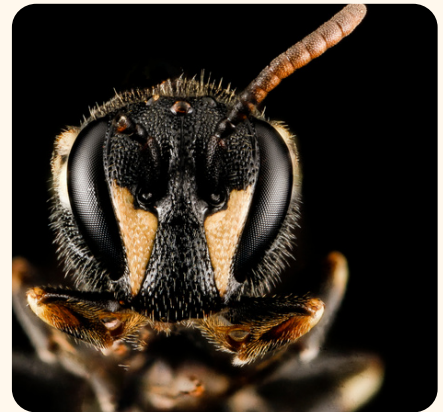
Hylaeus hyalinatus
Male, Face



Hylaeus basalis
Male, Side



Hylaeus hyalinatus
Female, Face



FACT SHEET

GENUS

Common Name

Family

LASIOGLOSSUM

Sweat bees

Halictidae

Specialist species in Quebec: *Lasioglossum oenotherae*

Threatened/Vulnerable species in Quebec: *Lasioglossum michiganense*

Appearance:

3-10mm.

Black body.

Some species have bands of light hairs on the base of their abdomen.

Behavior:

Mostly solitary - but some exhibit social behaviors, including primitive eusociality and social parasitism.

Active from early spring to fall (April-October).

NESTING HABITAT:

- *Lasioglossum* species nest in the ground or in rotten logs and, depending on the species, exhibit solitary nesting, primitive eusociality, or social parasitism.
- Some members of this genus are specialists, meaning they have a preferred host plant.

CONSERVATION TIPS:

- Avoid mowing, burning, or herbicide/pesticide use near nesting or foraging areas during their active season.
- Plant or protect their preferred host plants.

SPECIES DISTRIBUTION:

- There are about 135 species of *Lasioglossum* in Canada, and at least 60 have been detected in Quebec.

Cleptoparasites

The term *cleptoparasite* refers to a behavior where an animal lays its eggs in another species' nest so its babies can eat the food meant for the host's young.

In Quebec, the following *Lasioglossum* species are cleptoparasites: *Lasioglossum asteris*, *Lasioglossum cephalotes*, *Lasioglossum izawsum*, *Lasioglossum michiganense*.

Lasioglossum zonulum
Male, Side



Lasioglossum inconditum
Female, Face



FACT SHEET

GENERA

Common Name

Family

MACROPIS

Loosestrife bees

Melittidae

Appearance:

7-12mm

Mostly black, males have yellow-marked faces, while females have specialized hairs on hind legs for collecting floral oils.

Behavior:

Solitary bees

Active from June to July (aligns with blooming period of host plant).

NESTING HABITAT:

- *Macropis* bees nest in the ground.
- These bees require moist habitats close to their host plant, *Lysimachia* (loosestrife).
- These bees collect floral oils from these plants for waterproofing their nests and provisioning their young.

CONSERVATION TIPS:

- *Macropis* bees have a close association with plants in the *Lysimachia* genus, also known as loosestrifes.
- Plant native loosestrifes to attract these bees (e.g. *Lysimachia ciliata*).



SPECIES DISTRIBUTION:

- There are 2 species of *Macropis* that have been detected in Canada and Quebec.

Macropis nuda
Male, Face



Macropis ciliata
Female, Side



Macropis nuda
Female, Face



FACT SHEET

GENUS

Common Name

Family

MEGACHILE

Leafcutter bees

Megachilidae

Specialist species in Quebec: *Megachile addenda*

Appearance:

5-21mm.

Dark body.

Often have pale bands of hair on abdomen.

Behavior:

Solitary.

Active in spring to summer (April-September).

NESTING HABITAT:

- Females of this genus build nests in the ground or in hollow twigs, lining each cell with cut leaves or plant resin, and deposit pollen and an egg in each one.

SPECIES DISTRIBUTION:

- There are about 41 species of *Megachile* in Canada, and at least 16 have been detected in Quebec.

CONSERVATION TIPS:

- Plant and protect their preferred host plants.
- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Leave patches of exposed soil and dead plant material to support nesting.

Megachile centuncularis
Male, Face



Megachile centuncularis
Male, Back



Megachile melanophaea
Female, Face



Pollinature Inc.



Megachile rotundata is an important managed bee in Canada, used for alfalfa seed pollination, and blueberry pollination in Quebec.

FACT SHEET

GENUS

Common Name

Family

OSMIA

Mason bees

Megachilidae

Specialist species in Quebec: *Osmia brevis*, *Osmia marginipennis*, *Osmia montana*, *Osmia regulina*

Threatened/Vulnerable species in Quebec: *Osmia odontogaster*

Appearance:

9.5-16mm.

Metallic green/blue or black body.

Black or white fur on face and thorax.

Behavior:

Solitary.

Active from early spring to early summer (March-June).

NESTING HABITAT:

- Females mason bees construct their nests in hollow plant stems or old insect tunnels.
- Using clay-rich mud, they create walls and seal off each egg in their nest.

CONSERVATION TIPS:

- Provide them with nesting material, such as wood trays, cardboard tubes, sticks, etc.
- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Ensure they have access to mud.

SPECIES DISTRIBUTION:

- There are about 81 species of *Osmia* in Canada, and at least 16 have been detected in Quebec.

Osmia pumila
Male, Face



Osmia pumila
Male, Back



Osmia pumila
Female, Face



The blue orchard bee (*Osmia lignaria*) is an important native *Osmia* species used for pollinating orchard crops like apples and cherries.

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FACT SHEET

GENUS

Common Name

Family

MELISSODES

Long-horned bees

Apidae

Specialist species in Quebec: *Melissodes rivalis*, *Melissodes desponsa*, *Melissodes druriella*

Appearance:

7-18mm.

Black body with yellow banding.

Covered in pale hairs.

Some males have yellow faces and long antennae.

Behavior:

Solitary.

Active late summer to early fall (July-September).

NESTING HABITAT:

- Members of this genus create underground nests or horizontal nests in exposed banks.
- Some *Melissodes* species have a preference for asters or daisies.

SPECIES DISTRIBUTION:

- There are about 24 species of *Melissodes* in Canada, and at least 7 have been detected in Quebec.

CONSERVATION TIPS:

- Many *Melissodes* are specialists meaning they rely on specific types of pollen from a limited number of plant species.
- Many *Melissodes* specialize on asters family, so native species like *Packera aurea* and *Symphyotrichum ericoides* can provide valuable early and late floral resources for them.
- Avoid early mowing or herbicide application near bloom period.
- Reduce soil disturbance.

Melissodes trinodis
Male, Face



Melissodes trinodis
Male, Side



Melissodes desponsa
Female, Face



FACT SHEET

GENUS

Common Name

Family

NOMADA

Cuckoo bees

Apidae

Cleptoparasitic species in Quebec: *Nomada florilega*, *Nomada lepida*, *Nomada media*, *Nomada subnigrocincta*, *Nomada bethunei*, *Nomada cressonii*, *Nomada denticulata*, *Nomada luteoloides*, *Nomada parva*, *Nomada pygmaea*

Appearance:

8-10mm.
wasp-like body.
Black or red with yellow,
white, or red markings.
Almost hairless.

Behavior:

Active from early spring to early
fall (April-September).

NESTING HABITAT:

- Cleptoparasitic species are indicators of biodiversity by their presence, which indicates a rich and balanced ecosystem.

The term cleptoparasite refers to a behavior where an animal lays its eggs in another species' nest so its babies can eat the food meant for the host's young.

- Adult *Nomada* bees sleep by clinging to plants using their mandibles.

CONSERVATION TIPS:

The following actions can help promote cleptoparasitic bee populations:
Protect their habitat, restore areas that support both cleptoparasites and their hosts, limit pesticide use, and promote native plant diversity.

SPECIES DISTRIBUTION:

- There are about 14 species of *Nomada* that have been detected in Quebec.

Nomada denticulata
Male, Face



Nomada denticulata
Male, Back



Nomada maculata
Female, Face



FACT SHEET

GENUS

Common Name

Family

PEPONAPIS

Squash bees

Apidae

Specialists

Appearance:

11-14mm.
Brownish in colour.
fuzzy hind legs.

Behavior:

Solitary.
Active in the summer months
(July-August).

NESTING HABITAT:

- Female *Peponapis* bees build their nests in the ground near plants from the *Cucurbita* genus (ex: Squash) because they are oligolectic to these plants. Male *Peponapis* bees can be found nesting in the blossoms.

CONSERVATION TIPS:

- Plant or protect their preferred host plants (squash plants).
- Wait until the end of flowering before mowing or applying herbicides: this will help pollinators find food and refuge.
- Avoid tilling, compacting, or mulching the soil near squash plants to protect nests.

SPECIES DISTRIBUTION:

- There is only 1 species of *Peponapis* in Quebec (*Peponapis pruinosa*).

Peponapis pruinosa
Male, Face



Peponapis pruinosa
Female, Side



Peponapis pruinosa
Female, Face



FACT SHEET

GENUS

Common Name

Family

SPHECODES

Blood bees

Halictidae

Cleptoparasitic species in Quebec: *Sphecodes brachycephalus*, *Sphecodes persimilis*, *Sphecodes stygius*, *Sphecodes clematidis*, *Sphecodes confertus*, *Sphecodes cressonii*, *Sphecodes dichrous*, *Sphecodes mandibularis*, *Sphecodes ranunculi*, *Sphecodes solonis*

Appearance:

4-15mm.

Black and red in colour.

Behavior:

Active from spring to summer
(April-July).

NESTING HABITAT:

- Cleptoparasitic species are indicators of biodiversity by their presence, which indicates a rich and balanced ecosystem.

The term *cleptoparasite* refers to a behavior where an animal lays its eggs in another species' nest so its babies can eat the food meant for the host's young.

- Members of this genus have a preference for the nests of *Halictus* and *Lasioglossum* species.

CONSERVATION TIPS:

- Protect and restore diverse nesting and foraging habitats that support both the parasite and its host species.
- Monitor host-parasite dynamics and promote native plant diversity.
- Avoid broad-spectrum pesticides.

SPECIES DISTRIBUTION:

- There are about 32 species of *Sphecodes* in Canada, and at least 12 have been detected in Quebec.

Sphecodes coronus
Female, Back



Sphecodes davisii
Female, Side



Sphecodes davisii
Male, Face

