

## Bees of Maine

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Nearly 4,000 bee species have been identified in United States. In Maine, there are over 270 species of bees, representing six families.

### **Family Apidae** (Bumble, Carpenter, Cuckoo, and Honey Bees)

This is a very diverse family containing many of the best known species of bees. Members of these families display a wide range of nesting, foraging, and social behavior. In Maine there are 12 genera with *Bombus* spp. and *Nomada* spp. being the most diverse. *Bombus* spp. (Bumble Bees) are medium to large (0.4 to 0.9 inches long) and very hairy. They have yellow, white, black, orange and red bands and markings. They are some of the first bees to emerge in the spring and are generalist foragers; visiting a wide variety of plant species over the foraging season. They are cavity nesters and utilize old mouse burrows. Colonies live for one year and can reach a couple of hundred individuals. There are 17 species of bumble bees in Maine. *Nomada* spp. (Cuckoo bees) do not make their own nests but lay their eggs in the nests of other species.

### **Family Megachilidae** (Leafcutter and Mason Bees)

Megachilids are moderately sized (0.3 - 0.6 inches in length) and females have rows of hairs under their abdomens (called scopa) that are used to collect pollen. Most are tunnel nesters, using straws and reeds as nesting sites. They will readily nest in artificial bee nesting blocks. In Maine there are 49 species, representing 8 genera. Of these, *Osmia* spp. and *Megachile* spp. are the most common. *Osmia* spp. (mason bees) are 0.2 to 0.8 inches long and often metallic blue, or blue-black. They have round, broad heads and abdomens. *Osmia* are early spring generalist foragers and can be important for fruit tree pollination in many areas. They nest in rotten wood, twigs, between stones, cracks, and artificial nesting blocks. *Megachile* spp. (leafcutter bees) are 0.4 – 0.8 inches long, gray to brown in coloration, and often have abdominal stripes. They have stout bodies with flattened abdomen and are moderately hairy. They have large mandibles that they use to cut leaves and flower petals to wrap brood in. Some species are generalists while others are specialist foragers. They nest in pre-existing cavities (hollow plant stems, abandoned beetle tunnels, gaps in bark, artificial nesting blocks, etc.).

### **Family Halictidae** (Halictids, Cuckoo, and Sweat Bees)

Some members of this family are metallic blue or green but most are dull black or brown. They are small in size, ranging from 0.1 - 0.6 inches in length. They are slender and range from bald to moderately hairy. Most species are solitary soil nesters but some are sub-social and multiple females build and defend a single nest. Females are generalist foragers and carry pollen on the hind legs or thorax. There are 8 genera found in Maine with *Lassioglossum* being the most diverse. *Lassioglossum* spp. (sweat bees) are small, slender bees that are black, green, blue or metallic. They contain a row of hairs along each abdominal segment. They are generalists and carry pollen on the upper portion of back legs. They nest in sandy soil on flat ground and line brood chambers with a wax like secretion.

### **Family Colletidae** (Plasterer, Cellophane, Polyester and Yellow-faced Bees)

Bees in this family are small (0.2 - 0.6 inches in length). Female Colletids line brood cells with a cellophane or polyester type substance that is waterproof and resistant to fungus, which protects eggs and developing larvae. There are two genera found in Maine. *Colletes* spp. (polyester bees) are 0.3 to 0.6 inches long and very hairy. Most are black with white hair on head, thorax, and in strips on the abdomen. Many are specialist feeders, only feeding on a few species and they are soil nesters. *Hylaeus* spp. (yellow-faced bees) are small (0.2 to 0.3 inches long), slender, and relatively hairless. Most are black with yellow or white markings on their faces, thorax, and legs. They are generalist feeder and collect nectar and pollen in their stomach. Most species nest in twigs and plant stems. They will readily nest in artificial bee nesting blocks.

### **Family Andrenidae** (Miner and Sand Bees)

Andrenids are one of the first bees to emerge in the spring. They are moderately sized (0.3 - 0.7 inches in length) and hairy. Most are black or gray-brown, some with abdominal stripes. This family contains both specialist and generalist foragers and female bees carry pollen high on their hind legs. They are soil nesters and can be found in aggregations when conditions are favorable. Females excavate a vertical shaft with lateral tunnels used as brood chambers. In Maine there are four genera, but the vast majority of species are found in the genera *Andrena*.

### **Family Melittidae** (Melittids and Oil Collecting Bees)

This is a very uncommon and small family. Individuals in this family look similar to Andrenids. Melittids are ground nesters and will often be found in aggregations. In Maine there are 2 genera present (*Macropis* and *Melitta*). *Macropis* spp. collect loosestrife oil and line cells with it. They also feed it mixed with pollen to young.