



Native Bees

What are native bees?

- Native Illinois species are organisms that were present before settlement of the area by people of European descent.
- Bees are insects of the Order Hymenoptera along with wasps, ants and some other relatives.
- The hymenopterans have four, thin wings (if present), two long antennae and mouthparts for chewing.
- Female hymenopterans may have an egg-laying structure that is modified into a sting.
- Their life cycle includes four stages: egg; larva; pupa; and adult. Fertilized eggs produce females. Males develop from unfertilized eggs.
- Bees are different from the other members in the Order Hymenoptera because they have branched hairs (plumose hairs) on some part of their body. Most bees are covered with hairs, but some species have more hairs than others.
- Bumble bees, carpenter bees, plasterer bees, cuckoo bees, mason bees, leafcutter bees, sweat bees and mining bees are types of native bees in Illinois.

Why are they important?

As pollinators, bees provide for the existence of many plant species and in turn, all terrestrial animals, including humans.

How many types of native bees live in Illinois?

There are approximately 400 to 500 species of native bees in Illinois.

Where do native bees live?

Because there are so many native bee species, their habits are varied. They live in wetland, woodland, grassland and urban habitats.

What types of life styles do they have?

- Solitary native bees make and care for their own nest. They may live with other bees of their own kind nearby (aggregations), or they may prefer to be away from all other bees.
- Communal bees are solitary bees that use a single entrance to the nesting site, but each bee digs its own nest from that point.
- Semisocial bees work together to raise their young with the colony only lasting one year. The mother and her offspring do not inhabit the colony at the same time.
- Eusocial bees live in a single nest with the inhabitants sharing the reproductive and nest-making functions. These bees include a mother and her daughters in a complex system.
- Cuckoo bees are nest parasites and rely on other bees to raise their young
- Bees must have a place to lay their eggs where their larvae and pupae can develop safely. They construct nests to raise their young. Some bees nest in the ground. They often choose a bare, sunny spot and dig a tunnel to raise their young. About 30 percent of native bees nest in holes. Mason and leafcutter bees use existing holes in hollow stems, dead wood and rock crevices for nest sites. Carpenter bees excavate holes in wood to form a chamber for their eggs. Other locations may be used as bee nesting sites, too.

- In the nest, a mixture of pollen, nectar and saliva is formed into loaves. Each egg is provided with a pollen loaf in a single cell. Mud, leaf pieces and sawdust are all types of materials used to build partitions between cells. When the larva emerges from the egg, it feeds on the pollen loaf until it is time to enter the pupa stage.

How big are the native bees in our state?

They range in size from about one-tenth of an inch to about one inch in length.

What about stinging?

- Bees, some wasps and ants have the ability to sting. The sting structure is a modified ovipositor, or egg-laying structure. In the stinging insects, the eggs are deposited from the base of the sting instead of through it as in a regular ovipositor.
- Only females have a sting structure. They use it for defense. The sting can be used multiple times in all bees, ants and wasps except for the nonnative honey bee (*Apis mellifera*).
- People generally only get stung by a bee if they step on it, pick it up or if gets tangled in their clothing. Honey bees and bumble bees may defend their nest, so you should avoid those areas if you know a nest is present. Ground-nesting yellow jacket wasps (*Vespula spp.*) do sting readily and should be avoided. Bees are often blamed for the actions of these wasps.