

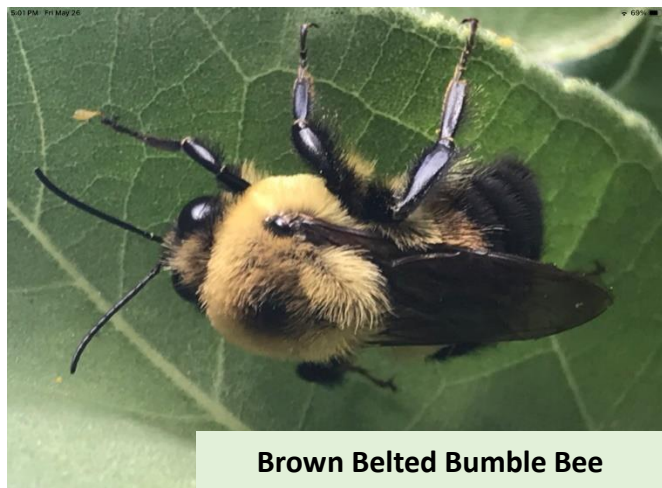
## Native Bee Basics & Protecting Native Bees

By Joe Carter, Volunteer Pollinator Specialist

Many people worry about being stung by a bee, but it is not very likely because native bees are busy and focused on storing provisions for a new generation in a very short adult life.

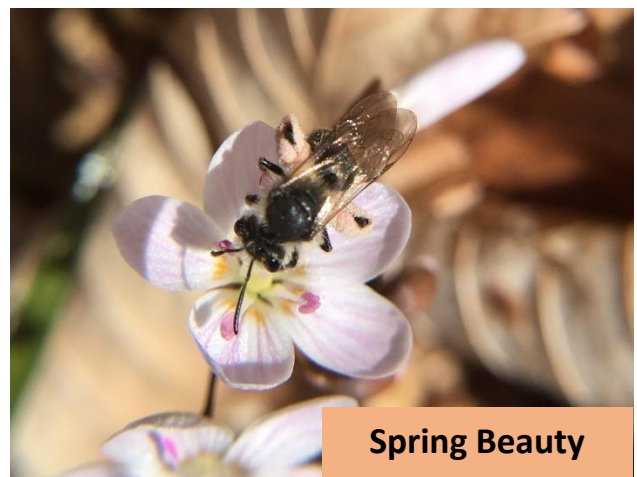
Native bees are everywhere with about 4000 species nationwide and about 500 species in Ohio. They come in many shapes and sizes from large carpenter bees to small mining bees. Most bees have a one-year life cycle with most of that cycle spent underground as eggs, larvae, and pupa. The adult stage is the stage we can see, and it lasts only a few weeks for most bees. About 70% of the bees are ground nesting, and 30% are stem nesters. Ground nesting bees need some bare ground to make nests. Stem nesters need last year's stems or some other type of cavity to build their nests.

Bees collect pollen and nectar to provision their nests, and most wild bees are solitary; a single female builds and provisions a nest without aid from other bees. Solitary bees may nevertheless sometimes build their nests in close proximity, forming large aggregations. In some species, they may go as far as to share a nest entrance, but otherwise remain independent. This is known as a communal colony. These bees' typical nest is a single burrow with one or more cells for the brood at the end, or on side branches from the main tunnel. Many bees also nest in pre-existing cavities, like old beetle burrows in wood. Bees use a variety of methods for cell construction, including leaf pieces, chewed up leaves, mud, plant resins, wood particles or gland secretions to protect and waterproof cell linings.



Bumble bees have a different social lifestyle. A lone queen starts a colony in the spring after she wakes from hibernation. She produces wax from glands in her body to make pot-like cells in which she lays her eggs and stores nectar and pollen for her brood. The first young emerge in a few weeks as female worker bees. As fall arrives most bumble bees have died and only the new, mated queens over-winter to establish next year's new colonies of about 50-400 bees. These nests are small in comparison to honeybee hives which hold about 50,000 bees.

Some bees are specialists that have co-evolved to synchronize their emergence to coincide with the bloom and pollen of certain plant species. A good example is the Spring Beauty Bee that specializes in the early spring bloom of Spring Beauty ephemeral flowers. Note the pink pollen on the legs. Bees have special hairs called scopa that help pollen cling to their legs.



Eighty to ninety percent of all plants on earth rely on insects for pollination. Most flowering plants rely on pollination services of native bees, including the fruit, vegetable and nuts we eat. We need bees!

But native bees have many threats. Humans have altered about 95% of nature through agriculture, logging, and urbanization. So, what can we do to help conserve native bees? It can all start in your yard by planting native trees, shrubs, and herbaceous plants. If you do not have a yard, volunteer with FLOW or other conservation organizations to improve habitat in your neighborhood. Provide nectar and pollen that the bees need. Plant a diversity of flowering plants that are native to your region. It is better to use true native species than cultivars. Make sure your garden has a continuous succession of flowers the entire growing season. Shrink your lawn to make room for more bee food.

In addition, provide areas of bare soil for ground nesting bees and avoid the use of landscape fabric, plaster or other soil covering. Leave some logs lying on the ground and leave plant stems over winter and cut last year's stems 12-24" high in early April. New season growths will quickly cover last year's stems. This provides nesting opportunities for cavity nesting bees. Reduce or eliminate the use of mulch, herbicides and of course pesticides. So, along with the sources of pollen and nectar, leave some wildness in your yard. Be a "messy" gardener.

Conclusion: Try rewilding or "ungardening" returning your yard to a more natural state. The "ungarden" can work to reverse the ecological decline and be a haven for native flora and fauna.



*Photos: Joe Carter*