

Community **IPM**

Bumble Bees – Pollinators that Sting

Bumble bees are familiar spring and summer insects in the North-eastern United States. They are most often observed visiting flowers, but can become a problem when nesting near human activity. Some bumble bee species nest underground in empty rodent burrows or natural openings, while other species nest in tree holes or even inside the walls of buildings. With the ability to sting, bumble bees are considered a public health concern. However, they are also important pollinators that contribute to agricultural food production. Therefore, they are regarded as economically and ecologically valuable in one respect, and a pest in another.

Did You Know ... ?

- **By the Dozens:** There are over 200 species of bumble bees in the world, with 50 species present in North America.
- **Well Adapted:** Bumble bees range much further north than honey bees and can be found close to the North Pole.
- **Defenders:** Bumble bees are not typically aggressive, but will defend themselves or their nest with repeated stings when threatened. Skunks and other animals may be stung when they try to dig up a ground nest to eat bumble bee brood (young bees).
- **Decline:** Bumble bee populations have declined dramatically in the past few years due to reasons not well understood – although pesticides are thought to be a factor. Conservation of bumble bees is important. Homeowners can provide food for bumble bees by planting pollinator-friendly plants and ensuring that pesticides are not applied to flowers, in the lawn or landscape. Clover and dandelions are two examples of flowers often found in lawns that provide valuable pollen and nectar for pollinators.
- **Myth:** The old adage that bumble bees should not be able to fly was based on early aerodynamic theory. More recent studies show that, while bumble bees are not aerodynamically efficient, their large thoraxes generate enough force to permit flight.

Identification

Bumble bees are most easily recognized by their black and yellow warning coloration, which informs other animals that they can deliver a potent sting when threatened. They have a hairy, or fuzzy, appearance, and foraging bumble bees may have a clump of pollen on their



Bumble Bee: *Bombus fervidus*. Photo: Gary Alpert.



Bumble bees forage on many different flowers to collect pollen and nectar. Photo: Joellen Lampman.

legs in a structure called a pollen basket, or corbicula. Bumble bees are robust insects that generate a loud buzzing sound during flight. Just as this sound causes alarm in humans, it also keeps birds and other predators away from the bees. Bumble bees within a hive vary in size depending on their job, but workers generally measure about $\frac{3}{4}$ of an inch, with queens growing up to one inch in length. Several species occur in the Northeastern United States, and can be distinguished by examining variation in color markings.

Bumble bees are sometimes confused with carpenter bees. Whereas bumble bees are covered completely in hairs, the abdomen of carpenter bees is bare and shiny black. Furthermore, carpenter bees excavate nests in exposed wood, while bumble bees make their nests in existing cavities.

Biology

Bumble bee nests are created in the spring by solitary, overwintered, fertilized females: the queen. After selecting a site in a vacated rodent burrow, tree hollow or other cavity, the queen will construct a nest and raise the first brood of workers on pollen and nectar collected from flowers. After the first brood is reared, the workers will provide food and nourishment to the colony while the queen shifts her efforts to laying eggs. During the course of a summer, 50 to 400 workers may be produced. Workers live approximately four to six weeks, with colonies declining in the fall. Males and worker bees die

out at the end of the season, while fertilized queen bees survive to repeat the cycle.

Management

Bumble bees are important pollinators, and are reluctant to attack when foraging. However, when individuals near the nest are threatened, bumble bees will defend themselves with multiple stings (unlike honey bees that can only sting once).

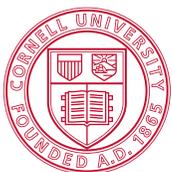
Nests found in non-threatening areas should be left alone to help conserve bumble bee populations. Post a warning sign so others can avoid potential stings. You can prevent bees from nesting in the same place the following year by sealing openings on buildings and other structures where bumble bee nests were observed. This work should be completed at the end of the season (Fall).

If the nest is a public health threat, it is a good idea to contact a professional pest management company. Nests discovered in sensitive areas (for example, near a playground) are more easily eliminated early in the season before they become larger and more dangerous.

Summary

Bumble bees are important pollinators that should be protected and conserved where possible. Problem nests can be avoided with signs, and sealing nest openings can prevent bees from nesting in the same location in subsequent years.

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