

Pollinator Spotlight: Bees

Bees are champion pollinators!

In the United States, there are over 4,000 species of native bees. Familiar bees visiting garden flowers are the colorful, fuzzy, yellow-and-black striped bumblebees, metallic-green sweat bees, squash bees, and imported honeybee. These flower-seeking pollen magnets purposefully visit flowers to collect pollen and nectar for food for themselves and their young.

Energy Needs

All bees have very high-energy needs that must be met for their survival. Bees need key resources such as pollen and nectar from a variety of flowers. Bees need these resources for themselves and their progeny. Many bees need water in addition to nectar.

Nesting Habitat

Bee nesting habits vary greatly. For example:

- Mason bees construct nests from mud.
- Leafcutter bees use a "wrapper" of leaves, resin and sand.
- Carder bees harvest plant fibers.

Most bees excavate their nest tunnels in sunny patches of bare ground, while others seek out abandoned beetle burrows in dead tree trunks or branches. The majority of bees are solitary, but a few, like sweat bees, bumblebees, and honeybees, are social, living in colonies that consist of a queen, her worker bee daughters and a few males, the drones.

Bee Flowers

The flowers that are visited by bees are typically:

- Full of nectar
- Brightly colored with petals that are usually blue or yellow or a mixture of these (bees cannot see red)
- Sweetly aromatic or have a minty fragrance
- Open in daytime
- Provide landing platforms
- Often bilaterally symmetrical (one side of the flower is a mirror image of the other)
- Flowers are often tubular with nectar at base of tube

An example of a bee-pollinated flower is a snapdragon or Penstemon. Snapdragon flowers have sturdy, irregular shaped flowers with landing platform. Only bees of the right size and weight can trigger the flower to open. Other bee species or other insects that are too small or too large are excluded.

Nectar Guides

Many of the flowers pollinated by bees have a region of low ultraviolet reflectance near the center of each petal. This region appears invisible to humans because our visual spectrum does not extend into the ultraviolet. However, bees can detect ultraviolet light. The contrasting ultraviolet pattern called a nectar guide. This guide helps a bee quickly locate the flower's center.

This adaptation benefits both the flower and the bee. The bee can more rapidly collect nectar and the flower is more effectively pollinated.



As humans view it!



As bees view it!

Photos courtesy of Apalachicola National Forest.



A [metallic green sweat bee](#) (*Agapostemon*) struts her pollen-collecting chops as she visits a wild rose flower on the Wyoming prairie. Photo by LuRay Parker, Wyoming Wildlife.



[Rusty-patched bumblebee](#) pollinating a blossom. (Photo from discoverlife.org © Copyright Sheryl Pollock 2011.)



A

Male [carpenter bee](#) stealing nectar from the base of a penstemon. Photo by Julian Cowles.



Bee and snapdragon. Photo by Grant Lau.

Bee Mimics



The syrphid fly is a bee mimic. Photo by Beatriz Moisset 2002-2004.

Many insects such as flies and wasps mimic true bees. True bees have two sets of wings. Flies have only two wings. Wasps although they look like them are only closely related to bees.