

Identifying & Observing Pollinating Insects in Pennsylvania



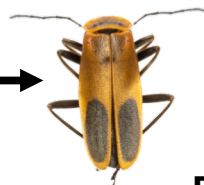
Flies

Order Diptera

Large eyes & short antennae

2 wings (1 pair)

Hardened first/outer pair of wings (elytra)



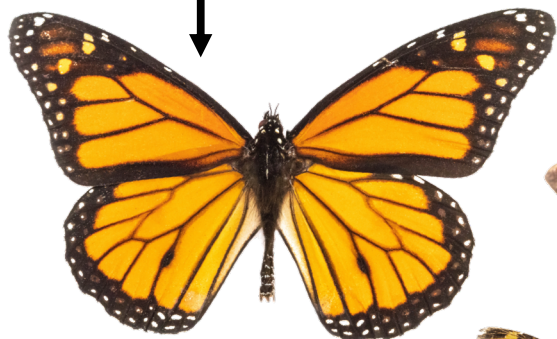
Beetles

Order Coleoptera

4 wings (2 pairs), usually covered in colored scales



Long antennae, thickest at the ends



Butterflies, Moths, & Skippers

Order Lepidoptera

Wasps
Order Hymenoptera



Smooth body

Thin "wasp waist"

4 wings (2 pairs)

Fuzzy body (usually)

No "wasp waist"

4 wings (2 pairs)



Bees

Order Hymenoptera

Why are bees important?

Non-managed, native bee communities provide valuable **pollination services** in natural habitats and agricultural systems. Most of the bee species in PA are generalists – they visit, and feed on nectar and pollen a wide variety of plants. When a bee moves pollen from one flower to another, it allows the plant to produce seeds, fruits, or vegetables. Without bees, we would not have as many **nutritious foods** or **beautiful flowers!**

What do bees do with pollen?

Most female bees specifically collect **pollen** from flowers. Depending on the bee species, **different parts of the body** are used for transporting pollen. Pollen is a critical **protein source** for developing larvae – baby bees!



Scopae can cover entire middle & hind legs!



Pollen Scopae
(specialized brushes of hair)

Only bees in the family **Megachilidae** carry pollen in scopae under their abdomens.

Pollen Basket
(pollen-pellet packing area; hind legs only)



To learn more about bee species & their identification, please see the next page...



* Insects shown approximately life-size

Identifying & Observing Bees in Pennsylvania

Field Notes

Which types of insects can you find?
Record your observations of their activities!

Introduced to the USA in the 1620s for honey production & crop pollination!



Honey Bee
Apis mellifera (Apidae)

Queens overwinter alone before founding a colony in the spring!



Bumble Bee
Bombus spp. (Apidae)

Males have a yellow spot on their face – they are territorial, but harmless!



Carpenter Bee
Xylocopa virginica (Apidae)

Only collects pollen from pumpkin & squash plants, but will visit other plant species for nectar!



Squash Bee
Eucera pruinosa (Apidae)

Many of the species in this family are bright metallic green or shiny black; a few have stripes.



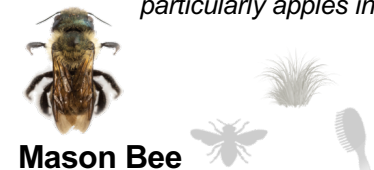
Sweat Bee
Halictidae spp.

These bees are most closely related to Carpenter Bees, but are very tiny in comparison!



Small Carpenter Bee
Ceratina spp. (Apidae)

Some species are important pollinators of tree fruits, particularly apples in PA!



Mason Bee
Osmia spp. (Megachilidae)

Females may nest close together, forming large aggregations in the spring!



Mining Bee
Andrena spp. (Andrenidae)

Females collect soft hairs from fuzzy plants to line their nests!



Wool-carder Bee
Anthidium spp. (Megachilidae)

Females cut out & use circle-shaped pieces of leaves to line their nests!



Leaf-cutting Bee
Megachile spp. (Megachilidae)

How many species of bees are there?

World-wide, there are **20,400+** bee species. In Pennsylvania, there are **430+** bee species. Most of the bees in PA are **native**, but some are **non-native**. A few species are also **endangered** or **threatened**.

In PA, you can find bees on **all kinds of flowers!** The best times of the year to look are the **spring** through the **fall**.

Scan the code to learn more about bees in PA!

Website: tiny.cc/BeesofPA
Social Media: #BeesofPA



* Bees shown approximately life-size