

The Pennsylvania Native Bee Survey
Citizen Scientist Pollinator Monitoring Guide

POCKET IDENTIFICATION GUIDE



© Leo Donovani/Pennsylvania Department of Agriculture



Bees vs. Wasps vs. Flies

Bees

- Usually Very Hairy
- Four Wings
- Long, Elbowed Antennae
- Legs Broad and Hairy
- Often Loaded w/ Pollen (On Scopa)



Wasps

- Usually Less Hairy or Not At All
- Four Wings
- Long Antennae, Not Elbowed
- Legs Narrow and Not Hairy
- No or Little Pollen (No Scopa)



Flies

- Usually Less Hairy or Not At All
- Two Wings
- Short, Thick Antennae
- Legs Narrow and Not Hairy
- No or Little Pollen (No Scopa)



Honey Bees



Size and Shape: Medium to large, moderately robust.



Color: Orange-brown to nearly black.

Hair: Fuzzy thorax and head, legs and abdomen less hairy.

Stripes: Abdomen tri-toned, with black, pale and orange-brown stripes of hair and body coloration.

Scopa: Enlarged, flattened hind legs; hairless in the center.

Antennal Length: Short.

Notes: Makes a buzzing sound when flying; the only bee with “hairy eyes”.

Bumble Bees

Size and Shape: Medium to very large, robust.



Color, Hair and Stripes: Body black, with yellow, black, and, sometimes, orange hair stripes on thorax and abdomen.

Scopa: Hind legs enlarged and flattened; hairless in center.

Antennal Length: Short for females (for most bumble bees encountered), long for males.

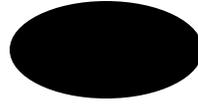
Notes: Make a low buzzing sound when flying; painful sting that does not linger.



Large Carpenter Bees



Size and Shape: Very large and robust.



Color and Hair: Shiny, nearly hairless black abdomen; thorax covered in yellow/light hair; males with a yellow spot on face.

Stripes: None.

Scopa: Hind leg enlarged, completely covered in scopal hairs.

Antennal Length: Short.

Notes: Will only see one or a few at a time; only species in PA: *Xylocopa virginica*.

Hairy Leg Bees

Size and Shape: Small/medium to medium/large and robust.



Color and Hair: Dark, with white to yellowish/orange hairs.

Stripes: Abdomen often with pale stripes.

Scopa: On hind legs; appear as dense stands of long hair (like pipe-cleaners).

Antennal Length: Generally longer than most bees, especially males, who have very long antennae.

Notes: Very quick; difficult to collect.



Large Dark Bees



Size and Shape: Small to Medium/large, relatively narrow to moderately robust.



Color and Hair: Body dark, thorax covered in short, white to yellowish hairs; females with facial foveae; males with beard or mustache or yellow facial markings.

Stripes: If present, made up of pale hairs.

Scopa: On hind legs, often pale and short.

Antennal Length: Short in females, longer in males.

Notes: Can be numerous in Spring and Fall; one rare species, *Nomia nortoni*, with iridescent abdominal stripes.

Small Dark Bees

Size and Shape: Tiny to small/medium, moderately narrow.



Color, Hair and Stripes: Dark, often metallic; sometimes with yellow marks on face, thorax and/or legs; abdomen can be yellowish or reddish; body often dulled by short pale hairs, that can be in stripes or patches on abdomen.

Scopa: On hind legs, but can be difficult to see without pollen load.

Antennal Length: Short in females, longer in males.

Notes: Often most abundant group in the garden throughout the season.



Green Sweat Bees



Size and Shape: Small to Medium, relatively narrow.



Color, Hair and Stripes: Metallic green; abdomen can be dark and striped with yellow body markings or pale hairs.

Scopa: On hind legs; less noticeable than other bees, unless covered in pollen.

Antennal Length: Short in females, longer in males.

Notes: Relatively fast flying and numerous; most are ground nesters, but one especially numerous species nests in rotting wood, and, so, may be found in areas with a lot of woody debris.

Metallic Hairy Belly Bees

Size and Shape: Small to medium/large and robust.



Color, Hair and Stripes: Dull to bright metallic green or blue; dark, white or pale yellow to orange; stripes absent or faint on abdomen; some very hairy and dark with coppery reflections.

Scopa: On underside of abdomen (look for pollen load).

Antennal Length: Short.

Notes: Most numerous in spring; active for only a short period of time; a couple of species with short facial "horns".



Dark Hairy Belly Bees



Size and Shape: Small to very large, usually robust, can be relatively narrow.



Color: Dark; some with bright yellow or red markings on thorax and abdomen.

Hair and Stripes: Thorax and head thickly covered in white/pale to orange-colored hairs; abdomen with pale to white stripes or not striped.

Scopa: On underside of abdomen, can be dark or pale to orange (look for pollen).

Antennal Length: Short.

Notes: Abdomen often flexed upward (or “elevated”) when feeding.

Cuckoo Bees

Size and shape: Tiny to medium and often narrow-bodied.



Color: Body black, red, or yellowish; often wasp-like, with elaborate body markings or light-colored hair patterns.

Hair and Stripes: Usually not very hairy; some with short, densely-arranged hair covering entire body.

Scopa: Lack pollen carrying structures.

Antennal Length: Sometimes short, often long (especially males).

Notes: Look very wasp-like; only minor pollinators - most are nest parasites.

