

Texas/Oklahoma Pollinator Project Identification Guide

Welcome to the Texas/Oklahoma Pollinator Project; and thank you for being a Citizen Science volunteer! The goal of the TOPP is to gather observational data on what plants are most attractive to bees and other pollinators. Based on your observations, we hope to provide good, local data to be used for regional fact sheets, and for efforts to protect and preserve our important pollinator resources.

The data you provide will go into a large database of observations on plant visitation. This identification guide is designed to help ensure that your data is recorded accurately, and that you have the information you need to feel comfortable collecting that data.

Plant identification is critical to the success of this project. Please try to accurately identify the plants you observe by scientific name (the form includes a dropdown list of common plant names). **If you are unsure of the scientific name of the plant ask another expert you trust, or take a picture of the plant** and submit with your observation. Try to get close enough to clearly show both leaves and flowers.

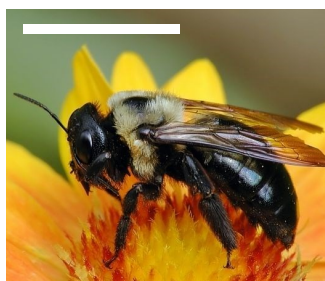
To conduct the study, **choose five kinds of plants** from any Texas or Oklahoma garden (we want to know good *and* not-so-good plants for bees, so don't worry if you don't see lots of bees on a given plant). **Conduct your count within a 2 ft by 2 ft patch** of only one kind of flowering plant. **For one minute, count and classify every flying insect you see visiting your patch.** The hours from **10 am to 7 pm** are best for **observing pollinators**; but most important, try to be consistent to make your counts at approximately the same time every day. Use the paper data sheet provided, or even better enter your data directly into our website via computer or phone (type in the URL address or, with your phone, scan the QR code on the reverse side of this sheet.) You are welcome to observe **more often** than once a week, and **more than** five kinds of plant. Simply choose the level of effort with which you are comfortable.

The flowers and patches you choose will bloom and eventually fade. For this reason, feel free to switch patches when blooming declines. For each observation you make try to estimate how far through the patch has progressed compared to full bloom (less than 25% in bloom, more than 75% in bloom, etc.)

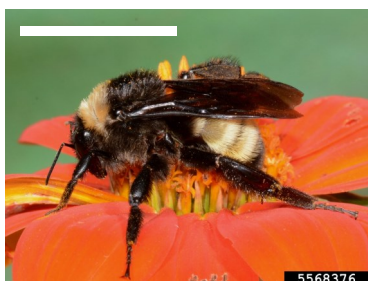
You do not have to know exactly what kind of insect you are seeing. The **data sheet is coded** for general kinds of pollinators (e.g., honey bees, bumble bees, other bees, etc.). This sheet will help you recognize these categories. Also, you must know how to tell the difference between a bee, wasp, and fly. Flies often mimic bees or stinging wasps. The pictures on this sheet are designed to help make learning these distinctions easier.

Insect Pollinator Examples

Bars indicate approximate actual size



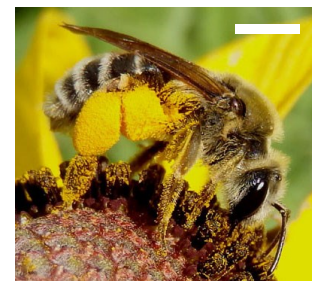
Carpenter bee (OthB), *Xylocopa*



Bumble bee (BumB), *Bombus*



Honey bee (HunB), *Apis mellifera*



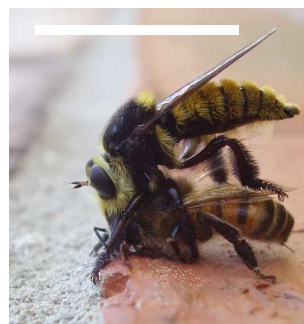
miner bee (OthB), *Halictus*



Sweat bee (OthB), *Lasioglossum*



Green sweat bee (OthB) *Augochlora*



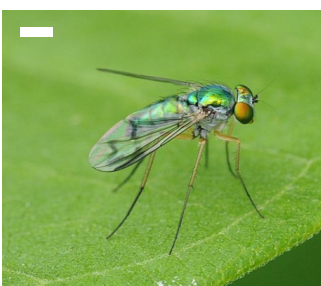
Robber fly attacking honey bee (Fly)



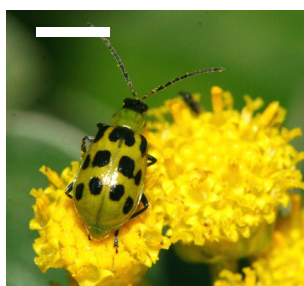
Prairie wasp (Wasp) *Ancistrocerus*



Leafcutter bee (OthB) Megachilidae



Longlegged fly (Fly) Dolichopodidae



Cucumber beetle (Beet) *Diabrotica*



Garden webworm moth (Lep) *Achyra rantalis*

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Telling bees from flies



Bees	Flies
4 wings	2 wings
Eyes more oval, on sides of head.	Eyes large, often encompassing head. May almost meet above head.
Hairy on thorax and (sometimes) on abdomen.	Usually less hairy.
May be covered in pollen on body and on hind legs. Hind legs often broad and fringed with hairs.	Pollen usually light, no accumulations on hind legs. Hind legs usually slender.
Longer, elbowed antennae.	Usually short stubby antennae.

Entering Project Data

Scan this QR code with your cell phone camera, or enter the URL below to access the online data sheet for the project. The form can be filled out on a computer or on your mobile phone.



SCAN ME

<https://sixleggedaggie.com/pollinator>

Thanks for use of photos to: Donna Race, Mark Brown, Molly Jacobson, Ilona Loser, Maurice Whalen, Bill Claff, Michael Merchant, David Cappaert, Jim Baker and Danielle Dunn.

Telling bumble bees from carpenter bees

Large carpenter bees (*Xylocopa*) are heavy-bodied, hairy bees, similar to bumble bees (*Bombus*). In our study we will classify carpenter bees as "Other Bees" (OthB), so it's important to be able to tell the two bee groups apart. The main difference between the two is that carpenter bees lack hairs on the top of the thorax. Bumble bees have yellow, black or orange hairs on the top of their abdomens.



Telling bees from wasps



Bees	Wasps
Usually hairy and thick-bodied with bluntly constricted "waist"	Few body hairs. More slender. Abdomen sometimes borne on a slender, stalk-like "waist"
Legs (especially hind legs) with broad, hairy segments, sometimes carrying balls of pollen. Few spines.	Longer, thinner legs, often with spines. Not hairy and not carrying balls of pollen
Wings usually folded flat over abdomen at rest	Wings often at rest in a V. Often folded lengthwise in the stinging wasps

Recognizing honey bees

One of the bees you will be asked to identify for this project is the honey bee, *Apis mellifera*. Look for a medium-sized bee with body color ranging from golden brown to black and dark stripes on the abdomen. HunB's are relatively slow-fliers and dangle their back legs in flight. Look also for pollen balls packed into corbicula (pollen baskets) on the hind legs.

