

BBCS Biomonitoring: Pollinator Surveys

What is a pollinator survey?

There are multiple types of pollinator surveys designed to capture and identify bees and other pollinating insects, which can be broadly referred to as either *passive trapping* and *active trapping*. Passive traps can be an effective monitoring method, but because they function by killing the pollinators they capture, they are considerably less desirable from a conservation perspective. However, active trapping can be done without killing the pollinators we are sampling. The pollinator survey we will be conducting involves catching bees that are out foraging for pollen on plants using a net, cooling them down so that they are no longer active (and therefore unlikely to sting us!), identifying and photographing them, and finally re-releasing them back into the wild to continue their busy day of pollinating and foraging.

Why are pollinator surveys important?

Pollinators provide us with what we call *ecosystem services*, which refers to the free benefits that humans and society receive from wild animals that help pollinate plants within our farms, gardens, and parks. Unfortunately, the populations of many pollinator species are declining due to multiple compounding factors, including habitat degradation and climate change. As pollinator's habitats continue to be altered by humans, it is becoming increasingly important to monitor populations of pollinators in a standardized way so that we can determine which species are present in which habitats and which plants certain species are more likely to forage on and pollinate.

Survey steps:

1. When ready to begin the survey, start a 15 minute timer.
2. Walk slowly along 50 m transect, looking for pollinators in the 1 m area of either side of the transect
3. Once a bee is found, net the bee, and quickly place it in a vial. Record transect location (m), specimen number, and host plant the bee was found on. Place the specimen in the cooler.
4. Once 15 minutes has passed, go to ID bees with volunteers. Ensure that they are not active; if so, let sit longer in cooler.
5. Place each bee on a petri dish, and take a picture of the top of the thorax, the side, and the face.
6. Refer to identification materials. If unsure, save photos to send to Bumblebee Watch.
7. After data is collected on a bee, place insect in a shaded area to warm up slowly.
8. After all insects are identified, conduct flowering species survey along the transect. Walk along 50 m transect. At every 2nd m, identify flowering species that are currently in bloom.