



**Pollinator diversity
and abundance**

Survey protocol

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The purpose of this document is to provide instructions on how to survey pollinator diversity and abundance at your site. This survey tool has been developed by Wild Pollinator Partners- Partenaires des pollinisateurs sauvages (WPP-PPS), and the information collected will be shared with this network.

Materials needed

You will need a survey sheet (attached), a pencil, and a camera or smart phone.

Protocol

Choosing a survey date

The survey can be done any day of the week (it does not have to be the same day every time). Weather must be suitable for pollinator activity. Ideal conditions are sunny or partly sunny, with a temperature above 12°C and not too windy (Beaufort scale between 0 and 4).

For weather conditions, please consult Environment Canada:

- Ottawa (Kanata - Orléans) - https://weather.gc.ca/city/pages/on-118_metric_e.html
- Ottawa (Richmond - Metcalfe) - https://weather.gc.ca/city/pages/on-52_metric_e.html
- Gatineau - https://weather.gc.ca/city/pages/qc-126_metric_e.html
- Beaufort wind scale : <https://www.canada.ca/en/environment-climate-change/services/general-marine-weather-information/understanding-forecasts/beaufort-wind-scale-table.html>

Choosing a time to survey

Pollinators are most active from 11 a.m. to 3 p.m., so try to plan your survey to fit this time frame if possible. Starting a little earlier, or ending a little later, is fine too. It is a good idea to stay 10-15 minutes at each survey site. The data will be more accurate if you stay the same amount of time at every site.

Make sure to submit your survey sheet and other files to the appropriate person or email address when you have completed each survey. You may also have the option of entering your data into iNaturalist.

Using the survey sheet

All categories on the survey sheet are explained in detail in this section. Please read carefully. Accurate data entry is very important.

Fill out the top of the sheet before starting the survey. Enter the date in the following format: YY/MM/DD. Based on Environment Canada weather information, enter air temperature and wind speed. Do not forget to write the observer(s) name(s). If you need more than one line for your observations, feel free to use more and draw an arrow to indicate which entries belong together.

Habitat description or site ID

Please be as precise as possible when identifying your site or describing your habitat. Write the name of the location and distinguish your stops with numbers or other identifiers meaningful to you. For example, if you stop four times, make sure to number your stops or identify them with descriptive names, such as “vegetable garden,” “corner plot,” “shade bed,” “front yard”). Provide a hand drawn map or location coordinates (from Google Maps) for each stop.

Start and end time

Enter the time (hh:mm) in 24-hour notation. Enter the time when you start counting pollinators at a particular stop as the start time. After 10-15 minutes, when you have finished counting, enter your end time.

Pollinator ID

Pollinators can be very difficult to identify to the species level, especially when it comes to the Hymenoptera order (Sawflies, wasps and bees). So we ask that you identify them to the best of your ability. Be as specific as you can; if you don’t know the species, enter the genus or even family name. Take photographs, if possible, to capture details (naming picture files is discussed below under “File name”). Even if you have no idea what kind of pollinator you are seeing, a photo can provide enough clues for an expert to identify later.

Behaviour/description

Describe in general what the pollinator is doing. This information can be important in identifying the insect or even just learning more about its behaviour and what habitat seems more important for that species. It can be as simple as “on the ground,” “feeding,” “resting on leaf,” etc.

Count

Count the number of individuals you see for every species. You can use tally marks (HHH) or just numbers, either is fine.

Plant species

If the pollinator is interacting with a plant, note the plant species in this section. If the pollinator changes flowers, record all the flowers visited.

File name

Because visual data are important for identification purposes, naming your files in a systematic way is key to keeping them organized. Please follow the instructions given below when naming your file and sending it.

To organize the files, name your file as follows: MoDay_SID_Sp

(3-letter month followed by date_Site ID or habitat description_closest identification of species and number used in data sheet to identify)

Examples:

- Jul05_UCU-LG_Unknown1
- Aug22_FletcherS1_Bombusimpatiens4

The number following the species name should be used in the data sheet for future reference to the file. For example, if unknown bee #5 was on a *Taraxacum* (dandelion), please make sure you write #5 in all the places you describe its behaviour and any flowers it was on.

Notes

Feel free to record additional observations in this section.

It's a good idea to note and photograph signs of pollinator activity, even if you don't see any insects. For example:

- Are there any holes in the ground?
- Are there leaves that seem to have been cut by an insect, e.g., circular holes?
- If there is a nesting structure, are there any signs of use?
- Are there any other signs of nesting?

You may wish to describe the habitat further – by asking yourself the following sorts of questions:

- Are you near a river, stream, lake, swamp?
- What type of vegetation? Is it a planter or a field of wildflowers?
- Is it a forest? Field? Agricultural area? Residential? Commercial? Industrial?
- What does the ground cover look like? Sand? Wood chips? Dirt?

Using iNaturalist

iNaturalist is an online citizen science website and app that shares biodiversity information to help us learn about nature. To learn more visit www.inaturalist.org.

Finding the app

iNaturalist can be found at any of the links below. It can be accessed on a PC and/or by smartphone

Website: <https://www.inaturalist.org/>

Apple app: <https://itunes.apple.com/us/app/inaturalist/id421397028?mt=8>

Android app: <https://play.google.com/store/apps/details?id=org.inaturalist.android>

Entering data into iNaturalist

If you choose to use iNaturalist to enter your data, please follow these instructions. If you prefer, you can use both the data sheet and iNaturalist to record your data or just one. Make sure to check the iNaturalist box on the sheet if you have entered the info on the app. All pollinator data entered into iNaturalist will be automatically part of the Wild Pollinator Partners project. For this reason, we ask you follow the guidelines explained below.

The Wild Pollinator Partners project created in iNaturalist captures data that meet the following criteria.

Taxa must in one of the following:	Location must be in:
<ul style="list-style-type: none"> - Butterflies and Moths (Order Lepidoptera) - Ants, Bees, Wasps, and Sawflies (Order Hymenoptera) - Tachinid Flies (Family Tachinidae) - Bee Flies (Family Bombyliidae) - Dance Flies (Family Empididae) - House Flies and Allies (Family Muscidae) - Blow Flies (Family Calliphoridae) - Hover Flies (Family Syrphidae) 	<ul style="list-style-type: none"> - Ottawa, ON - Gatineau, QC - Pontiac, QC - Lanark, ON

View our iNaturalist project here:

<https://www.inaturalist.org/projects/wild-pollinator-partners-partenaires-des-pollinisateurs-sauvages>

Enter each species as a different observation on iNaturalist. If you upload your photos to iNaturalist, there is no need to also send them to WPP.

Good photos are necessary to help identify species in iNaturalist. Date and time should be added automatically when you upload your photos but, if not, please add that information manually.

For species name, enter the nearest taxonomy possible (for example, if you know it was an ant, bee, wasp or sawfly, write Hymenoptera). Other members of iNaturalist may be able to identify your observation more precisely.