



UNIVERSITY OF  
CALGARY

FACULTY OF SCIENCE / Department of Biological Sciences

# Timed Pollinator Count Guide

Bee a Citizen Scientist

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In partnership with the Office of Sustainability & Knowledge Engagement

<https://biodiversity.ucalgary.ca/>

## INTRODUCTION

The five or ten minute pollinator count is a timed count of all the insects that visit one type of flower. To do a timed pollinator count:

- find a patch of flowers (all or mostly the same species)
- place a quadrat (a 50 cm x 50 cm square) over the patch
- take a photo, and record basic information about your patch
- watch your patch, start a timer for 5 or 10 minutes once the first insect arrives.
- count all of the insects that visit the flowers in your quadrat until your timer stops

A timed pollinator count is a great way to see and learn about the pollinators visiting flowers in your neighbourhood, garden, or yard. Sharing counts of pollinators helps us better understand how many pollinators different types of flowering plants support.

This timed pollinator count is based on the [UK Pollinator Monitoring Scheme](#).

## MATERIALS

- Quadrat (see step 1)
- Data sheet (see step 2)
- Camera or smartphone camera
- Pencil or pen
- Timer or stopwatch (phone timers are great!)

## STEPS

### Step 1: Make a 50 cm x 50 cm quadrat

You will use a 50 cm x 50 cm square quadrat to mark the area that you will watch for five or ten minutes. You can make your own quadrat with duct tape, string, cardboard, wire, sticks, or PVC pipe.

### Step 2: Print or have on a device the *pollinator count data sheet*

Besides the number of pollinators, you will need to write down other important information including:

- Type and number of flowers
- Time
- Location
- Date



You can use this [data sheet](#) for this information while outside. Later you will put your information in this [online form](#).

It is a good idea to read the data sheet before you start your pollinator count, so you include all of the needed information.

### Step 3: Find and identify a plant with pollinators

You will want to find a plant that has visiting pollinators to watch for your pollinator count. You have the best chances of seeing pollinators on warm, sunny days (>20C; <50% cloud cover) with little wind. You can look for plants in your neighbourhood, backyard, community garden, park - anywhere in the city that is a safe location. Please remember to social distance and not get in the way of others. You must also identify your plant. If you do not recognize your plant, [Seek by iNaturalist](#) can help with plant identification. You can also use the [Alberta Native Plant Council's identification keys](#) for native plants. If your plant is in a natural and non-cultivated setting (NOT a backyard, lawn, or landscaped area), you can upload your plant photograph as an [iNaturalist](#) observation for expert comment on the identification.

## Step 4: Upload your photos to iNaturalist

Once you have identified your plant, place your 50 x 50 cm quadrat over a patch. You will only focus on a single kind of plant, so choose a location for your quadrat with many of that plant's flowers. For plants close to the ground, you can put the quadrat on the ground. For large plants, you can put the quadrat vertically or at an angle.

Look at your patch and write down:

- plant species
- location, time and date, weather
- how much of the quadrat your flower fills (less than half the patch, half the patch, more than half the patch)
- how many flowers you are watching in the quadrat
  - only count flowers that are fresh
  - counting flowers is different for different flower structures:

## Step 5: Count pollinators!

You will start your 5 or 10 minute timer when you see the first pollinator. A pollinator is **any insect you see touch a flower's surface**.

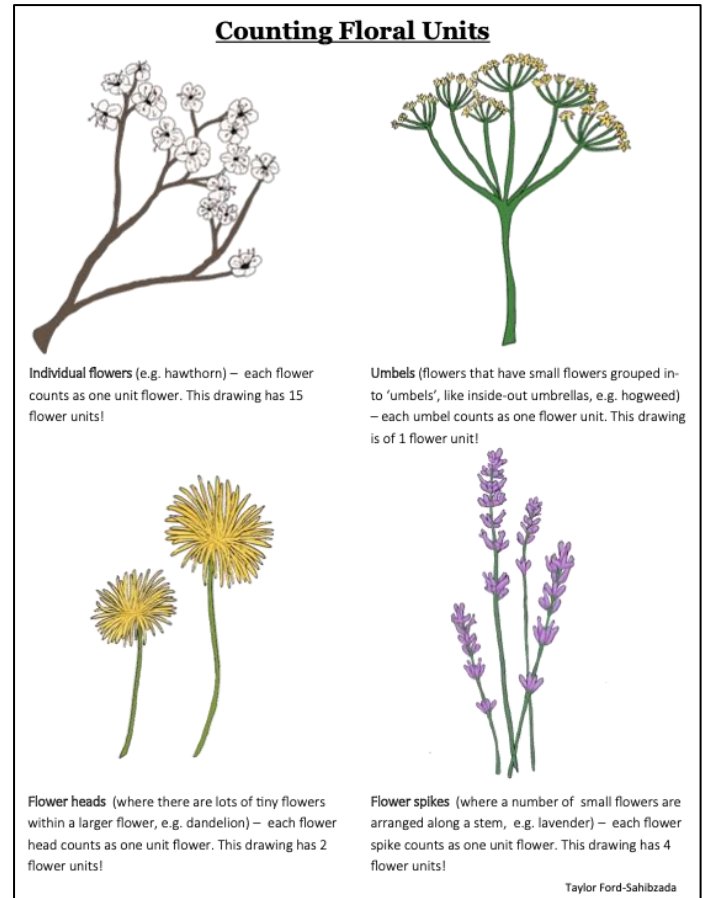
Count:

- Large and small insects that land on the flower or flower parts of the plant species you watch

Don't count:

- Insects that land on other flower types in the quadrat
- Insects that only land on or touch leaves
- Insects hiding at the bottom of the plant
- Animals that are not insects, like spiders or snails.

As you watch for five or ten minutes, write down:



- Start and end time of your count (in MST)
- The total number of pollinators you see visit the flowers you watch
- If possible, how many pollinators of each major group you see (e.g. bumble bee, honeybee, wasp, fly, butterfly, beetles)
  - you can use this [guide to recognising insects](#) from the UK pollinator monitoring program to help you identify insects
  - test your identification skills with this [Pollinator Identification Quiz](#)
  - If you are not comfortable identifying insects, don't worry - total count numbers are important and help with this project!

Tip: don't lean over the quadrat - it stops insects from visiting. A good way to check is to see if your shadow goes into the quadrat.

## Step 6: Photograph the plant, the quadrat, and any pollinators

When you finish your pollinator count, please take photographs of:

- the plant (the flowers, the leaves, and the entire plant)
- the quadrat
- any visiting insect pollinators (if possible)

We recommend sharing your photographs of pollinators (and plants) on iNaturalist (see [Photographing Pollinators Guide](#)). Only take photos of insects after your timed pollinator count, as you may disturb them.

## Step 7: Share your data with our project

Put the information from your [data sheet](#) and your photos into this [online form](#).

## Step 8: Watch your plant again or other plants!

To see different pollinators:

- watch other types of plants
- watch the same type of plant in different locations
- watch the same plant at a different time of the season

The more pollinator counts people share, the more we will learn about how plants and pollinators interact in Calgary!