



BAT CITIZEN SCIENCE PROJECT

Nature Detective - Bat Count Instructions

WHAT IS IT:

A bat count is an opportunity to monitor bats at specific roosts as they emerge for the evening. The data from each site is sent in to the BC Community Bat Program where they keep track of bat count numbers from various sites around the province. Knowing how the bat population numbers are doing from year to year enables biologists to effectively manage and conserve bats.



In our citizen science bat count, NatureKids members will count bats from a specific roost. The data will be given to the leaders. The leaders will then do some basic math to calculate the average bat count of that roost site. This number along with the number determined by a lead adult, will be sent to the NatureKids BC bat citizen science coordinator who will assemble the counts done by all NatureKids in various communities. We will produce a project report and share the data with the BC Community Bat Project's Bat Watch program.

PREPARING FOR YOUR SURVEY:

1. Pick your site:

A roost site is a place where bats sleep during the day. Many bats shelter in abandoned houses, attics, barns, church steeples, bridges, bat-houses and other structures. You may know of a bat roost already or you may need to find one. Contact the bat citizen science project coordinator if you need help finding a roost. Remember...the site you choose should be safe for your NatureKids members.

- ✓ gain permission to be on the property (unless it is a public park or land)
- ✓ have enough space for your group to gather around the bat emergence point
- ✓ avoid a dangerous area like a busy road or a rushing river

2. Pick your evening:

Bats become active at sunset. In June and July, this means that your bat count will start between 9:00 to 9:20 pm depending on the date. This is past most children's bed time, so it will be a special occasion for them. Choose one evening to conduct the bat count – either **between June 1 and 21** (before pups can fly) or **between July 11 and August 5** (when pups are flying and exiting the roost). Some NatureKids clubs might be able to do two counts – one at each date window. Get the kids to see if there is an increase in numbers. Most bat species have one pup per female, so if you know how many bats you have during the first bat count, you will be able to calculate how many pups were born.

If you are keen, you can do 2 counts during each date window. Doing all four bat counts allows biologists to best compare numbers from year to year and between sites. Of course, you could also do bat counts at other times, but the information gathered might not be used for monitoring purposes.

3. Gather your bat count materials:

- Copies of “Bat Count Sheet for Kids”
- One copy of “Bat Count Sheet for Leaders”
- Clipboard (or book to lean on)
- Pencil
- Chair or blanket to sit on



As a group leader you will also need:

- Watch
- A calendar of sunset and civil twilight (the period after sunset or before sunrise) for your area which can be downloaded from www.sunrisesunset.com/Canada/.
- One tally counter (hand clicker)
- *Optional:*
 - Video camera if you have one. That way you can film the emergence of bats but count them later (and be able to rewind) for more accuracy.
 - Thermometer. Otherwise try to get the temperature from another source.
 - Supplies to collect guano if this is the first time the site is being counted and bat species have not been identified. You will need a small paper envelope, and possibly disposable gloves and tweezers. See “DNA Collecting Protocol for Residents” at www.bcbats.ca.

4. Arrive early and decide on survey method

Arrive at your bat roost at least 20 minutes before sunset. Bats may begin to emerge around sunset so don't be late! Some species may emerge closer to civil twilight so don't worry if it takes a little while to see the first one.

The air temperature should be at least 12°C with low wind speed. Some bats will not fly if the weather is too cold, windy or drizzly, and roost emergence counts under non-ideal weather conditions will underestimate population size.

Talk about safety rules with NatureKids:

- ✓ **Do not** enter bat roosts.
- ✓ **Do not** handle any bats if they fall to the ground.
- ✓ Stay calm and move slowly.
- ✓ Speak in a soft voice.

- ✓ When counting bats at the emergence point of roost, explain how to properly behave so don't scare bats: stand still, move slowly, speak in soft voice, do not shine bright flashlights into roost. If you need to take a break and get your excitement out, tell an adult and walk away about 25 giant steps and shake your jellies out. Keep your voice down.
- ✓ Bats might fly close to your head as they emerge. They are likely eating a mosquito that's attracted to you. They are excellent navigators. Stay still. If you move, they might not be able to adjust their flight path on time. If they accidentally land on you (extremely rare). Don't move. Freeze. Bats will fly off on their own...or Leader can get a branch or piece of clothing to remove bat from person (and hold it up high so it can fly away). Do not grab bat with bare hands.

Assign one reliable adult who will not be distracted to be your key counter. Give them the tally counter or hand clicker. This person might be an extra adult who does not have to look after a younger child. You will be comparing the kid's results with their count total.

Other considerations:



- Sit or stand so that the bats' exit point is visible from a comfortable distance. You don't want to be right under the exit point as that strains your neck but you don't want to be so far that you can't see them.
 - Usually 5 to 15 steps away works well.
 - If bats are exiting from multiple points, position your NatureKids at different spots and assign them to count only the bats that come out of one point (e.g. only count bats coming out of one side of the house).
- Try to have the light sky behind the bats exit point, to make it easier to count. This is so you can see the dark silhouette of the bat flying against the lighter backdrop of the sky.

DOING THE BAT COUNT:

5. Get started:

- Get kids to fill out their bat count sheet.
- At sunset, ask them to write down the time and start counting. Ask them to call out (but not too loudly) when they see the first bat and note the time on the bat count sheet.
- Count bats for one hour or until it is too dark to see, whichever comes first.

- One hour of counting is a long time for kids to sit still, especially for the younger ones. Have some colouring crayons and handouts available for them. If you have a young group, you might want to call it before the hour is up. Note the end time on the bat count sheet.

Tips for bat counting:

- Avoid using a flashlight because some bats may avoid exiting if there is too much light. However, a red filter flashlight is an option if it significantly aids in counting without disturbing bat emergence (bats do not see well in the red light spectrum).
- Tally the bats as they fly out for their nightly insect-eating. You may wish to use a hand “clicker” to make counting easier, or video the emergence to count later on your screen. Try to consider bats flying back inside but don't worry if there are too many to keep track of. Just count them as they leave if that's the case. Record your observations on the data form.
- Remember, no data (zero bats) is valuable data too!

AFTER THE BAT COUNT:

6. Get a final tally:

Ask participants to add up their tally marks. Enter their name and tally into the 'Leader's Bat Count Sheet'. Enter the final tally that was counted by designated adult with the hand clicker. Discuss what the challenges were? What did they like about counting?

7. Send us your results

Mail, scan and email or take a photo of your data sheet and send it along with any photos to NatureKids BC: citizenscience@naturekidsbc.ca or 1620 Mt. Seymour Road, North Vancouver, BC V7G 2R9.

Please label your images: YOUR NAME_LOCATION_DATE.

The citizen science project is made possible thanks to;



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